*Philosophy of Language: Natural Language Ontology*

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**Handout 7**

**Ontology and Grammatical Categories**

**1 Penultimate time**

Parameters of evaluation: times, worlds

A traditional view:

Entities posited in the semantic theory, but not necessarily part of the ontological commitment of speakers of the language.

A more recent view (Cresswell, Partee, Schlenker, DRT, …):

Parameters of evaluation are on a par with *individuals*, the denotations of DPs.

Some of the arguments

[1] There are the same sorts of quantifiers ranging over times and worlds as there are for individuals:

*All – always – must*

*Some – sometimes, past, future tense – may, can*

*Most – usually, mostly – probably, likely*

Tense and modals display the same referential possibilities as DPs:

[2] Demonstrative use:

(1) a. Joe would not do that.

 b. Joe left.

[3] Bound variable use

(2) a. Whenever Mary arrives, Joe leaves.

 b. If Mary came, Joe would leave.

But unlike individuals and times, natural language does not seem to display pluralities of worlds (Viola Schmitt).

How convincing are the arguments?

Perhaps the best argument is the referential use:

Having particular times or words in mind on a referential use amounts itself to an ontological commitment.

But it is implausible that these would be entire worlds, more plausibly situations relevant for the truth of the sentence / linguistic material in question.

Likewise, perhaps not times but situations meeting particular conditions or involving particular entities.

Todays’ topics

Expand on the issues:

* More about referential parallels
* More about domains and pluralities

Syntactic categories and ontological categories

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**2. Implicit arguments vs denotations of DPs**

**2.1. Do implicit arguments display the same ‘referential’ options as individuals as denotata of DPs?**

[1] Contextual standards:

Referential use:

(3) a. John is rich.

Bound variable use?

(3) b. ??? Whenever John is in a third-world country, he is rich.

[2] Events

Quantifiers:

Adverbs of quantification: *sometimes, always, mostly*

Bound variable uses:

*When* binding event variable:

(4) When John wakes up, he drinks water.

Referential uses?

[3] Implicit location

Referential use:

(5) a. It was raining.

Bound variable use

(5) b. Whenever Joe is in Dublin, it rains.

[4] Degrees or modes (tropes) as implicit arguments of adjectives

Bound variable use?

Referential use?

**2.3. Another difference between referents of DPs and implicit arguments**

Referents to non-existents not possible with implicit arguments:

(6) a. John did not walk.

 b. There is a particular planned walk John failed to do.

This is expected on the view of reference to non-existents (intentional objects) outlined last time. On that view, nonexistents in the semantic structure of sentences do not come for free; rather they depend on quasi-referential acts, acts of unsuccessful or pretend reference, which means that they require the use of DPs.

But reference to nonexistent possible with relational nouns:

(7) There is one remarkable fact about the (nonexistent) woman John read about.

 Her *passport* is French.

What about reference to nonexistent with parameters of evaluation?

Nonexistent times (past and future times) and merely possible worlds seem unproblematic as part the domain in the first place.

**3. Domains of entities, pluralities and the part-of relation**

The standard view in natural language semantics

All domains of entities are closed under sum formation, formation of pluralities of individuals.

 Motivation for the view:

[1] Part of applies to all types of entities and pluralities

(8) a. part of the house

 b. part of the students

 c. part of the wood

 d. part of the time

 e. part of the situation

 f. part of the cases

[2] Plurality-specific, cross-domain expressions:

*Both*, binominal *each*, German *je*, German *beide(s)*

**3.1. Individuals**

Individuals – potential referents of referential singular DPs

Overt plurals

(9) a. The students laughed.

 b. The students gathered.

Conjunctions

(10) a. John and Mary met.

 b. The men and the women gathered.

Superplurals

(11) a. The students and the teachers met in adjoining rooms.

 b. The daughters and the mothers and the sons and the fathers have similar problems with

 each other.

 c. The triangles, the squares, and the circles overlap.

The standard view about pluralities more formally (Link 1983)

The domain of individuals is closed under sum formation: (D, sum<)

Sum: a function from proper subsets of D to entities in D

For a non-empty set A, sum<(A) = the least upper bound of A wrt <

Other domains of entities:

Closed under sum formation wrt to their domain-specific part relation, e. g. the set of portions of water.

**3.2. Events arguments and plurality**

Plural arguments with distributive predicate

(12) a. The students laughed.

 b.∃e(laugh(e, the students))

Plural argument with a collective predicate: the Davidsonian event argument is a single event

(13) The students gathered.

Distributive interpretations of distributive and collective predicates are available by this condition:

(14) For a two-place predicate P, if P(e, d) and P(e’, d’), then P(sum<({e, e’}), sum({d, d’}))

Presupposes that the domain of events is closed under sum formation: (E, sum<)

Further support closure of the domain of events under sum formation:

Adverbial modifiers

Conjunctions of adverbial modifiers, *yesterday and today*

(15) a. John worked yesterday and today.

 b. ?? John worked slowly and fast.

*Yesterday and today* as a plural property of events

Adverbials with plurals

(16) John worked in four different cities.

Event nominalizations

(17) a. John’s walks

 b. the walks that have been taken in this area

**3.3. Times and sums**

Sum formation based on temporal contiguity, rather than being unrestricted.

Quantification over maximal intervals, if not even more concrete situations:

(18) Mary practiced many times this week.

 ‘Many times’ ≠ many collections of moments

But unrestricted sum formation needed for the purpose of *plural semantics* (collective predicates with conjunctions):

(19) a. This afternoon and tomorrow evening *are the best times* for visiting Sue.

 b. John and Mary will get lessons this afternoon and tomorrow evening (respectively).

**3.4. Tropes and plurality**

Do adjectives form a countable domain or a mass domain wrt to their mode argument position?

General observation:

Adjective nominalizations are generally mass nouns:

(20) much happiness

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**4. Ontological categories and syntactic categories**

Nouns typically denote enduring objects, but may denote any type of entity whatsoever

Verbs: restricted to events and states (concrete states (verbs of bodily positions) and abstract states (*own, know, owe*)

Adjectives: restricted to taking modes (tropes) or dispositions as arguments

Modes: *blue, round, heavy*

Dispositions: *fragile, stable*

A puzzle

Adjectives, nouns, and verbs apparently denoting the same ongoing

(21) a. active - activity - to act

 b. fearful – fear of – to fear

Limits of syntactic categories

What matters for the semantics of sentences is syntactic functions (roles, relations), not categories.

E.g. definite NPs can functional as referential DP and as predicate

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**5. Another potential correlation of syntactic categories or functions and ontology**

Higher-order metaphysics

Roughly, syntactic functions correlate with (higher-level) ontological categories

Predicates

Stand for second-order beings, ‘properties’, which cannot be referred to by first-order terms even in the metalanguage

Sentences

Stand for propositional contents that cannot be referred to by first-order terms even in the metalanguage

Adverbials

Stand for ‘ways’ as beings not describable in first-order terms

Do higher-order beings of this sort form pluralities?

To be distinguished from the questions of the pluralities of things special quantifiers range over due to their nominalizing force (*John is several things, happy, wise, and generous*)

Potential evidence for higher-order plurality: the use of *both* in English (*jeweils* in German)

(22) a. Joe became calm and healthy, *both* because he started yoga.

 b. John said that he would revise the book and withdraw the article *both* because

 Mary was upset.

Similar examples with German, *jeweils, beides*

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**5. Properties in a logical and an ontological sense**

The logical notion of a property: representation by lambda expression

Any open sentence (sentence with unbound variable) yields a property:

(23) a. λx[e(walk(e, x) & slow(e))]

 b. λx[∃e(buy(e, John, x) & yesterday(e))]

But:

(24) a. ??? the property of walking slowly

 b. ??? the property of being bought by John

(25) the property of speaking / laughing / running

What are the constraints on complex property-referring terms?

Modes / tropes

(26) a. the property of being red /happy / wise / nervous / active

Abstract states

(26) b. the property of being owned by John

 c. the property of owing someone money

 d. the property of knowing French

Dispositions

(26) e. the property of speaking several languages

Result states

(26) f. the property of having been bought by John

Concrete states

(27) a. ??? the property of sleeping on the couch

 b. ??? the property of standing all day

 c. ??? the property of sitting on this chair

What this means:

Distinguish properties (particularized or universal) in an ontological sense from properties in a logical sense.

Should the distinction play a role in compositional semantics of sentences?

Properties in an ontological sense involve different thematic relation to individuals (bearerhood) from events and concrete states (agenthood, being theme etc)

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**3. A general issue about plurality**

Reference to pluralities of non-nominal categories

Apparent requirement of a ‘classifier’:

(28) a. John fell \* three / ok three times.

 b. John said \* two / ok two things

But *both*, German *beides* (sing.) ok:

(29) John fell yesterday and today. Both happened in Mary’s presence.

 ‘Hans fiel gestern und heute. Das beides passierte in Maria’s Anwesenheit.’

(30) John said that he was at the party and that Mary was not. Both are false.

 ‘Hans sagte, er sei auf der Party gewesen und Maria sei nicht dort gewesen.. Beides was

 falsch.

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**4. Lexicon without syntactic categories**

Distributive morphology (Halle, Marantz, Borer)

The lexicon consists in category-less roots

Only syntactic structures into which roots are inserted come with categorial specification

What does this mean ontologically?

Distinguish ‘neutral ontology’ and syntactically specified ontology?

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**Some References**

Link, G., 1983, “The Logical Analysis of Plurals and Mass Nouns,” in R. Baeuerle et al.

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