*The Ontology and Semantics of Parts and Wholes*

Friederike Moltmann

Fall 2024

BCL, Université Côte d'Azur

Handout 5

**Mereological and Integrity-Based Approaches to the Mass-Count Distinction**

**1. Diagnostics of the mass-count distinction – for English and similar languages**

**1.1. Plural category**

Mass nouns: do not come with the plural

Count nouns: come with the plural

**1.2. Agreement**

Generally do not trigger plural agreement of the verb and of anaphoric pronouns:

(1) The stuff was / \* were sold. It was cheap /\*They were cheap.

Generally, trigger plural agreement of the verb and of pronominal anaphora:

(2) The things were / \* was sold. They were / \* It was cheap.

**1.3. Determiner and quantifier selection**

Mass nouns:

(3) a. much, little, less water / \*people

b. a great / small amount of stuff / \*things

Singular count, plural nouns:

(4) a. a, one

b. two, three , .., few, many,

c. a great / small number of people / \* stuff

**1.3. Anaphora**

Mass:

(5) a. it, that

b. some of it / that

Count:

(6) a. them, she, he

b. one of them, one by one, one at a time

(7) a. John sold the things / \* stuff. One of them was expensive.

b. John destroyed the things / \* stuff, one at a time

**1.4. Semantic selection of predicates**

Number-related predicates that are morphologically derived from *number* (?)

(8) a. numerous, outnumber, exceed in number

b. Those things are numerous / outnumber the other things / exceed the other things in

number.

c. \* The stuff / furniture is numerous / outnumbers the gold coins.

Lexically number-related predicates

(9) a. count, enumerate, list

b. John counted / enumerated / listed the students.

c. ?? John counted / enumerated / listed the fruit in the bowl.

d. ?? John counted / enumerated / listed the class.

**1. 5. General issues about the mass-count distinction**

Fact

The mass-count distinction is a syntactic distinction, but it seems to come with a semantic content.

Issues

Does it have a semantic content?

Can all the mass-count diagnostics be accounted for in the same semantic or syntactic way?

Syntactic views of the difference between mass and count

Mass NPs and count NPs have different syntactic structures (Borer)

Mass NPs and count NPs are of different semantic types (Rothstein 2017)

Are the diagnostics of mass count to be accounted for syntactically or semantically?

Three possible views:

1. The diagnostic of mass NPs and count NPs are all just phenomena of syntactic agreement (like gender in German) (Gillon/Bale)

2. The diagnostics of mass NPs and count NPs are in part phenomena of syntactic agreement, in part a matter of semantics, the content of the mass-count distinction

3. The diagnostics of mass NPs and count NPs are all a matter of semantics.

But is a single semantic level involved?

The lexical (conceptual) -functional divide

1) The semantics of the functional part of grammar

2) The (conceptual) semantics of lexical items

1) and 2) may display mismatches.

Functional expressions

Determiners, quantifiers*, number, amount*

*Number* and *amount* are light nouns (in Kayne’s sense)

Lexical expressions:

*Count, list*

Semantic content of the mass-count distinction

Two views:

1. Based on prototypes:

no strict semantic conditions associated with mass and count

2. General semantic content:

Schematic criteria (Langacker 1987)

Mereological criteria

Integrity based criteria

----------------------------------------------------------------------------------------------------

**2. Mereological views of the mass count distinction**

Version 1 (Link 1983)

(10) a. N is a singular count noun, then for any x, N(x), then x is an atom with respect to the

part relation <plur of the domain of pluralities (Dplur, <plur).

That is, for no y, y <plur x and x ≠ y.

b. N is a mass noun, then for any x, N(x), then x not an atom with respect to the part-

relation applying within the domain of quantities / individuals <. That is, there is a y,

y < x, y ≠ x.

Version 2 (Quine and others following him)

(11) a. N is a singular count noun, then for any x, N(x), then x is an atom in the extension of

N (ext(N)) with respect to the part-relation applying to individuals.

That is, there is no y, y ∈ ext(N), y < x, and y ≠ x.

b. N is a mass noun, then for any x, N(x), then x is not an atom in the extension of N with

respect to the part-relation applying to quantities / individuals. That

is, there is an y, y < x, y ≠ x, y ∈ ext(N)

Different predictions?

Version 2:

Body: a leg, a proper part of the body, is not a body again.

Version 1:

Body – leg, a problem? No: the body is not a plurality!

Atomicity holds relative to plural-specific part relation!

The leg is an individual-specific part of the body; but the body is still an atom with respect to the plural-specific part relation.

Problems for Version 2, but not Version 1

1. Sequence-type nouns

(12) a. sequence, chain, line, fence, wall, region, location, place

2. Entity-type nouns

(12) b. entity, amount, quantity

c. collection, sum, group

Rothstein’s (2017) context-relative version of atomicity

Count nouns involve a contextually given set.

Atomicity only holds relative to that contextually given set.

A ‘sequence’ is an atom relative to a contextually given set that does not contain proper parts of the sequence.

An ‘entity’ is an atom relative to a contextually given set that does not contain proper parts of the entity.

Count nouns and mass nouns are of different semantic types

Count nouns are of type <<e, t>, <e, t>>.

Mass nouns are of type <e, t>.

Syntactic explanation of diagnostics for the mass-count distinction:

Why can numerals not apply to count nouns?

Numerals select nouns of type <<e, t>, <e, t>>.

But what about ‘agreement phenomena, involving anaphora and adverbials?

Proliferation of type distinction for verbs applicable to mass and count NPs.

Type-neutrality required for pronouns like what (*what John ate*).

-----------------------------------------------------------------------------------------------------------

**2. The mass-count distinction and the notion of an integrated whole**

**2.1. Langacker (1987)**

Points of departure

Unified cognitive content of syntactic categories based on the notion of a schema

Categorization by schemas (rather than prototypes and their perceived resemblances)

A schema is an integrated concept in its own right, it is simply characterized with less specificity and detail than its instantiations.

All nouns instantiate abstract noun schema (contrasting with verbs).

All count nouns instantiate an abstract noun schema.

All mass nouns instantiate an abstract noun schema.

Meaning in the realm of cognitive processing

Example: spatial distribution of stars

constellation - cluster of stars - specks of light in the sky

Alternative cognitive construals of the very same scene.

Expressions may invoke same domain, but contrast semantically by choosing alternative profiles for the base

Base: domain of predication

Primary and secondary domains

Profile: the entity elevated from the base that is designated

Example: island – water near the island – shoreline.

(13) a. A noun designates a region in some domain.

b. A count noun designates a bounded region in some domain.

c. A mass noun designates a homogenous region in some domain.

Region:

more general notion than that of an object

Examples

Moment, period: bounded regions in time

Point, line, circle, arc: bunded regions in two-dimensional space

Sphere, cube: bounded regions in three-dimensional space

Streak, spot, blur: visual configurations in limited expanse; their

primary domain is the extensionality of the visual field

Combination of basic domains

Beep: involves time and pitch, bounded in both domains

Flash: involves time and the visual field, but bounded only in time, need not be bounded in the visual field.

Arc

Bounded region within a conceived circle (= primary domain), mediated part of the spatial domain.

No problem dealing with sequence-type nouns

*Line, stripe, horizon, road, rover, edge, boundary, shore*:

regions bounded along one axis of a two-dimensional space

Visual field as the scope of predication

Boundary must be included in the scope of the visual field.

(14) a. I see a red spot.

b. ??? I see red.

No objective basis needed for a boundary:

1. spot on the rug: as a region of discoloration has an objective boundary

2. spot as location: boundary is merely virtual, imputed rather than observed.

Closure phenomena for completing a boundary that is only partially suggested by objective factors:

1. *Archipelago, forest, swarm*

2. Container nouns: *jar, tub, …*

More challenging:

Team, committee, TV set with remote control

Regions with a merely conceived boundary?

Here a general notion of an integrated whole seems better applicable.

-----------------------------------------------------------------------------------------------------------

**References**

Langacker, R. 1987): ‚Nouns and Verbs‘. Language 63.1.

Rothstein, S. (2017): *Semantics for Counting and Measuring*, Cambridge UP.