

Lexical Semantics

Week 5: Nouns and countability

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1 The mass/count distinction

(Most) English nouns belong to one of two categories with respect to **countability**:

- **countability** can be thought of as a set of distributional properties, having to do with the number/quantificational/numerical expressions that a noun can grammatically and sensibly combine with
- **count** nouns, roughly, are ‘items’: they can be counted (modified by cardinal numbers) and pluralized

(1) two carrots, three teapots

- **mass** nouns are ‘stuff’ or ‘substances’: they can’t be counted, and don’t have a plural form

(2) *two muds, *three grasses

Some countability properties in English (Cruse 2000):

Property	Count		Mass	
separate singular, plural	✓	<i>book/books</i>	x	<i>butter/*butters</i>
cardinal modifiers	✓	<i>two books</i>	x	<i>*two butter/s</i>
indefinite article	✓	<i>a book</i>	x	<i>*a butter</i>
bare form without determiner	x	<i>*I like book</i>	✓	<i>I like butter</i>
quantifiers: <i>many/few</i>	✓	<i>few books</i>	x	<i>*many butter/s</i>
quantifiers: <i>much/little</i>	x	<i>*much book/s</i>	x	<i>much butter</i>

The basic conceptual distinction between mass and count nouns has to do with **boundedness**:

- **bounded** entities are atomic units or wholes, typically having distinguishing internal structure (e.g., an orange)

- **unbounded** entities are homogeneous or undifferentiated, having changeable shape or outline (e.g., orange juice)
- relevant properties:
 - **Homogeneity.** Bounded entities are internally heterogeneous (non-homogeneous); unbounded entities are homogeneous (at least to a point – e.g., *rice*)
 - **Divisibility.** Bounded entities are indivisible – taking away part of a bounded entity leaves you with something that cannot be given the original label; unbounded entities are divisible – if you take some of my orange juice away, I still have orange juice
 - **Additivity.** Bounded entities are not additive – two oranges are not (an) orange; unbounded entities are additive – if I put two servings of orange juice in the same glass, it's still orange juice
 - homogeneous entities are both divisible and additive

Question: Why do nouns fall into one category vs. the other?

- Bloomfield (1933) and others: it's arbitrary
 - languages make the cuts differently: English *strawberry*, *pea* are count nouns, but the Russian and Welsh equivalents are mass nouns
 - within languages, similar items work differently: *vegetables* vs. *fruit* (and compare *Gemüse*, *Obst*), *oats* vs. *wheat*
 - synonymous pairs of mass/count nouns: *foliage/leaves*, *gravel/pebbles*, *change/coins*, *mail/letters*
- Wierzbicka (1988), Goddard (2009), Wisniewski (2010) pursue a **cultural relativity** hypothesis:
 - **Distinguishability.** The size of items in an aggregate affects whether we individuate the items (count them) or not – roughly, they have to be big enough to easily distinguish (and 'interesting enough' to count – Wierzbicka).
 - * Languages make this distinction in different places, but we expect it to have some cultural uniformity – e.g., if blueberries are counted, then strawberries should be as well.
 - * Cruse: English aggregates with small granularity are mass nouns (*flour*, *sugar*, *salt*, *quinoa*), larger pieces get count names (*lentils*, *oats*, *chickpeas*)
 - **Mode of interaction.** The way we typically interact with an object affects its countability.
 - * Wierzbicka: *garlic* vs. *onions* or *scallions*, English *spaghetti* vs. Italian
 - These criterion interact with one another: *oats* vs. *wheat*

2 Other kinds of non-countability

There are different ways of being non-countable:

- we'll restrict **mass** nouns to the subset of non-count nouns describing substances (*mud, blood, juice, syrup*)
- **artifactual aggregates**: singular words for classes of unlike things (*furniture, cutlery, crockery*)
- **pluralia tantum**: plural names for 'dual' objects (*scissors, glasses, trousers*)
- **expanses**: plural words for expanses of homogeneous matter, fixed to a certain place (*guts, woods, grounds*, but not *water, mud*) – NOT countable

(3) I hate his guts – #all five of them. McCawley 1975, p.320

Murphy's binary features (from Jackendoff 1991):

- boundedness: $\pm b$
- internal structure: $\pm i$
 - whether the entity is made up of separate individuals or not
- $\pm b, \pm i$ give a 4-way distinction of nouns by countability properties

	$+b$	$-b$
$+i$	groups	aggregates
$-i$	individuals	substances

1. **groups**: *committee, team, set*

- also *collective noun*: unlike aggregates, functions as bounded whole – the individual entities are not the same as the collective
- agreement in Standard British English is plural (American English is singular)

- (4) a. The band were interviewed for the article (British)
 b. The band was interviewed for the article (American)

2. **aggregates**: *teapots, cattle, committees*

- both singular and plural

3. **individuals**: *teapot, mountain, person*

4. **substances**: *mud, rice, water*

Question: What about *furniture*?

- $[+b]$ – *furniture* is divisible and additive: two pieces of furniture are *furniture*, taking away one piece leaves you with *furniture*
- *furniture* is composed of a number of individuals, but differs from aggregates like *cattle* and *teapots* because the individuals do not need to have the same description
- *furniture* has singular, rather than plural, agreement:

(5) *The furniture are beautiful.

- **conclusion:** we need a way of distinguishing between homogeneous aggregates (with homogeneous internal structure) and heterogeneous (artifactual) aggregates

2.1 Grammatical features

We'll use:

- $[\pm \text{sg}]$ to mark morphosyntactic number: +sg is singular, –sg is plural
- $[\pm \text{c}]$ to mark count vs. non-count
- $[\pm \text{a}]$ for **atomicity** vs. non-atomic: +a picks out nouns that have homogeneous internal structure – specifically, where the atomic parts have the same description as the original

Examples:

- individuals: *teapot* [+sg, +c, –a]
- aggregates: *teapots* [–sg, +c, +a], *cattle* [–sg, +c, +a]
- substances: *mud* [+sg, –c, –a]
- artifactual aggregates: *furniture* [+sg, –c, –a]
- notice:
 - a. $[+sg, +c] \rightarrow [-a]$ (why?)
 - b. $[-sg, +c] \rightarrow [+a]$
 - c. $[-c, -a] \rightarrow [+sg]$

Question: how can we distinguish between substances and artifactual aggregates? Do we need another feature?

2.2 Other distributional data

The type of a noun affects the interpretation of certain comparative modifiers, like *more*:

- (6) a. Ludo has more teapots than Maria.
The number of teapots belonging to Ludo is greater than the number of teapots belonging to Maria.
- b. Ludo has more toothpaste than Maria. *volume*
- c. Ludo has more crockery/glassware than Maria. *number*
- d. Ludo has more quinoa/grass than Maria. *volume*

What feature is *more* sensitive to?

Acceptability of adjectives describing size (*large, small*) and shape (*round, square*):

- | | |
|----------------------------------|----------------------------------|
| (7) a. #The water is square. | (10) a. The glasses are square. |
| b. #The mud is big. | b. The trousers are flared. |
| (8) a. The furniture is round. | (11) a. The grounds are enormous |
| b. The mail is square. | b. The woods are square. |
| c. The luggage is large. | |
| (9) a. The couscous is spherical | |
| b. The grass is long. | |

Distributivity properties:

- (12) The boxes are heavy.
The boxes (all together) are heavy. (✓collective)
The boxes (individually) are heavy. (✓distributive)
- (13) The cement is heavy.
✓collective, x distributive
- (14) The glassware is heavy.
✓collective, ✓distributive
- (15) The scissors are heavy.
✓individual, ✓collective, ✓distributive

2.3 Shifting between categories

Some systematic ways of moving between countability categories:

- pluralization: requires a +sg (or +b) input, returns a -sg (-b) output
what other features change?

- **count to mass:**

- **grinding:** mass uses of count nouns, resulting from the application of a ‘universal grinder’ function (or repair operation)

(16) When the dairy van crashed, there was egg all over the road.

- **quantity** interpretations: reference to volume, not substance

(17) There was a lot of train to get over the mountains.

- **mass to count:**

- **packaging:** count use of a mass noun that usually picks out a conventional way of measuring out the stuff involved (the universal packager)

(18) I’d like a coffee with two sugars and one cream.

* relies on the conventionality of a packaging system

- **reference to kinds:** takes the plural to refer to different types or varieties of a particular substance (sometimes called the universal sorter)

(19) There were multiple wines at dinner.

(20) We went through four shales before we found any fossils.

3 Cross-linguistic counting

- English distinguishes count and non-count nouns, and makes a two-way grammatical distinction in terms of singular vs. plural
- other languages make different grammatical distinctions/show grammatical sensitivity to different features
- Proto-Indo-European had a tripartite number system: singular, dual, plural
 - in English, it’s still reflected in *both* vs. *all*, *either* vs. *any*, and so on
 - Arabic retains the dual
 - some languages only use these distinctions in certain contexts (e.g., retain a dual in the pronominal system but not elsewhere)

Morphological marking:

- some Welsh nouns are like English: singular nouns take a morphological suffix to become plural

(21) countable, singular → plural:

afal/afalau (apple/apples), *dyn/dynion* (man/men), *cadair/cadairiau* (chair/chairs)

(22) non-countable (no singular or plural distinction):
glo (coal), *llefrith* (milk)

- others go the other way: this is often referred to as a **collective/singulative** paradigm

(23) collective, plural → singular:

moch/mochyn (pigs/pig), *ader/aderyn* (birds/bird)

- small animals, insects:** *llygod/-en* (mice/mouse), *cacwn/cacyn-en* (hornets/hornet), *morgrug/-yn* (ants/ant)
- vegetation/grains/fruits/veg:** *dincod/-yn* (seeds/seed), *ceirch/-en* (oats/an oat), *cnau/cneu-en* (nuts/nut), *cennin/cenhin-en* (leeks/leek), *afan/-en* (raspberries/raspberry)
- granular aggregates:** *tywod/-yn* (sand/grain of sand), *marwor/-yn* (embers/ember), *llwch/llych-yn* (dust/speck of dust)

- some borrowings:

English	Collective	Singulative
bricks	<i>brics</i>	<i>brics-en</i>
figs	<i>ffigys</i>	<i>ffigys-en</i>
gooseberries	<i>gwsberys</i>	<i>gwysberys-en</i>
peas	<i>pys</i>	<i>pys-en</i>
garlic	<i>garlleg</i>	<i>garlleg-en</i>

- How can we formulate the collective to singulative operation?
- What is this process sensitive to?

4 References

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