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):

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

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

<table>
<thead>
<tr>
<th>$\pm b$</th>
<th>$\pm i$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$+b$</td>
<td>$+i$</td>
</tr>
<tr>
<td>$-b$</td>
<td>$-i$</td>
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<td></td>
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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: $+\text{sg}$ is singular, $-\text{sg}$ is plural

- $[\pm \text{c}]$ to mark count vs. non-count

- $[\pm \text{a}]$ for atomicity vs. non-atomic: $+\text{a}$ picks out nouns that have homogeneous internal structure – specifically, where the atomic parts have the same description as the original

Examples:

- individuals: teapot $[+\text{sg}, +\text{c}, -\text{a}]$

- aggregates: teapots $[-\text{sg}, +\text{c}, +\text{a}]$, cattle $[-\text{sg}, +\text{c}, +\text{a}]$

- substances: mud $[+\text{sg}, -\text{c}, -\text{a}]$

- artifactual aggregates: furniture $[+\text{sg}, -\text{c}, -\text{a}]$

- notice:
  a. $[+\text{sg}, +\text{c}] \to [-\text{a}]$ (why?)
  b. $[-\text{sg}, +\text{c}] \to [+\text{a}]$
  c. $[-\text{c}, -\text{a}] \to [+\text{sg}]$

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.
   \textit{The number of teapots belonging to Ludo is greater than the number of teapots belonging to Maria.}
   
   b. Ludo has more toothpaste than Maria. \hspace{1cm} \textit{volume}
   
   c. Ludo has more crockery/glassware than Maria. \hspace{1cm} \textit{number}
   
   d. Ludo has more quinoa/grass than Maria. \hspace{1cm} \textit{volume}

What feature is more sensitive to?

Acceptability of adjectives describing size (\textit{large, small}) and shape (\textit{round, square}):

(7) a. #The water is square. 
   
   b. #The mud is big.

(8) a. The furniture is round. 
   
   b. The mail is square.
   
   c. The luggage is large.

(9) a. The couscous is spherical 
   
   b. The grass is long.

\textbf{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, ✓ 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 one
  – 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)

  a. **small animals, insects:** llygod/-en (mice/mouse), cacwn/cacyn-en (hornets/hornet), morgrug/-yn (ants/ant)

  b. **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)

  c. **granular aggregates:** tywod/-yn (sand/grain of sand), marwor/-yn (embers/ember), llwch/llych-yn (dust/speck of dust)

- some borrowings:

<table>
<thead>
<tr>
<th>English</th>
<th>Collective</th>
<th>Singulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>bricks</td>
<td>brics</td>
<td>brics-en</td>
</tr>
<tr>
<td>figs</td>
<td>ffigys</td>
<td>ffigys-en</td>
</tr>
<tr>
<td>gooseberries</td>
<td>gwysberys</td>
<td>gwysberys-en</td>
</tr>
<tr>
<td>peas</td>
<td>pys</td>
<td>pys-en</td>
</tr>
<tr>
<td>garlic</td>
<td>garlleg</td>
<td>garlleg-en</td>
</tr>
</tbody>
</table>

- How can we formulate the collective to singulative operation?

- What is this process sensitive to?
4 References


