Aspects of individuation

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1. Introduction

Some conventional wisdom about the mass/count and English/Chinese distinctions:

- English makes a lexical distinction between mass nouns (e.g., *rice, water, mud, furniture*) and count nouns (e.g., *cat, book, pea, chair*).
- English count nouns can generally be coerced into a mass interpretation by the Universal Grinder (Pelletier 1975), and English mass nouns can generally be coerced into a count interpretation by the Universal Sorter (Bunt 1985). There are a few exceptions, such as *furniture,* which is a mass noun that cannot be coerced into a count reading.
- Chinese, unlike English, does not distinguish lexically between mass and count nouns.
- All Chinese nouns are basically like English mass nouns.

Some of this has already been refuted elsewhere—in particular, Cheng and Sybesma (1999) have shown that Chinese does indeed have a lexical mass/count contrast. But some pieces of it are still believed (or tacitly assumed). In our view, virtually all of it is wrong. Here's what we propose instead:

- The vast majority of English nouns are lexically unspecified as to whether they are mass or count.
- Interpreting 'mass' nouns as count, or 'count' nouns as mass, involves not coercion from one category to the other, but rather the morphosyntactic filling in of features that are not specified on the nouns themselves.
- Chinese, unlike English, has a lexical mass/count distinction.
- Most English nouns are basically like Chinese mass nouns. There are a few exceptions, such as *furniture,* which is more like a Chinese count noun.

2. Features and contrast

We adopt the view of contrastive underspecification outlined by Dresher, Piggott, and Rice (1994) and Dresher (to appear). Under this approach, the absence of a feature F in a given representation can be interpreted in two ways. If the feature is active in the system, then its absence is contrastive, and the interpretation is "not F". If the feature is not active in the system, then its absence has no meaning. (See also Wiltschko (to appear).)

We assume that Universal Grammar makes available (at least) the following features relevant to the semantic field of individuation and number (Cowper 2005; Cowper and Hall 2006):

(1) a. #: individuated
    b. > 1: plural

A nominal from which # is contrastively absent is interpreted as mass. Plural (> 1) is semantically dependent on #, and thus is interpretable only on count nominals. A count nominal from which > 1 is contrastively absent is interpreted as singular. Languages differ as to which features are grammatically relevant and in how the features are mapped to syntactic structure.

3. Taxonomy of English nouns

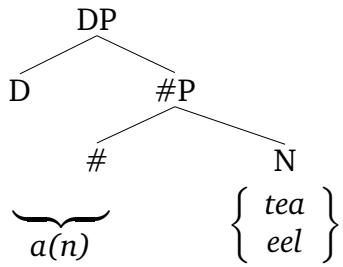
English has often been described (by, e.g., Zwicky (2006, 2008)) as permitting conversion between count and mass nominals. Contrastive underspecification permits another approach.

3.1 Eels and tea

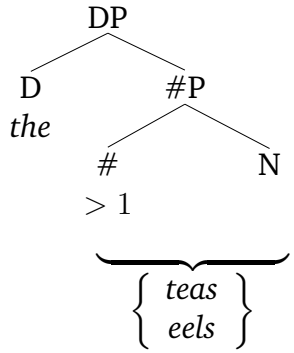
(2) a. I'd like a [$_{\#\mathrm{P}}$ tea], please.
    b. The [$_{\#\mathrm{P}}$ teas] of Sri Lanka are particularly nice.
    c. My hovercraft is full of [$_{\#\mathrm{P}}$ eels].

(3) a. The cup was full of [$_{\mathrm{NP}}$ tea].
    b. My hovercraft is full of [$_{\mathrm{NP}}$ eel].

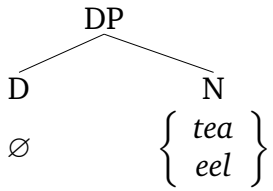
(4) a.



b.



c. *full of*



As shown in (4), the nouns *tea* and *eel* are unspecified for the count-mass property. # projects syntactically in (4a) and (4b), giving a count nominal. The (contrastive) absence of the # projection in (4c) gives rise to a mass interpretation.

Under this view, there is no featural distinction between nouns like *tea* and nouns like *eel*. They are equally capable of appearing in count and mass nominals, and no coercion is required in either case.

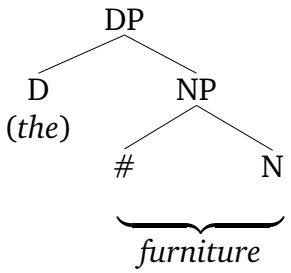
3.2 Furniture, footwear, and equipment

(5) a. The room is full of furniture.
b. *I ordered a new furniture from Ikea. It has three knobs on the front.
c. *Of all the furnitures in the world, he had to pick Louis XV.
d. How much furniture did he bring?
e. How many pieces of furniture do we have?

Nouns in this class behave in some respects like *tea,* in that they can occur as bare singulars with an unspecified-amount interpretation. However, they strenuously resist individuation by syntactic number, as can be seen in (5b) and (5c).

We propose that English nouns like *furniture* have the structure shown in (6).

(6)



They spell out both # and N, with N projecting. In this structure, # is a modifier (*sensu* Wiltschko to appear), and does not project syntactically, as it normally does in English.

- Nouns of this sort are inherently individuated—they denote a set of individuated items, with the (cancellable) implicature that the set is non-singleton.
- The grammatical feature # (without a dependent plural feature) forces singular agreement.
- Because *furniture* itself spells out #, it cannot (following Cowper and Hall 2002) combine with any independent expression encoding number, either singular (the indefinite determiner *a(n)*) or plural (the suffix *-s*).

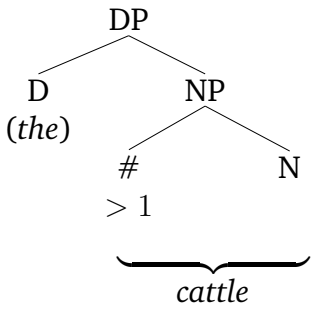
3.3 Cattle and livestock

The existence of nouns that spell out # suggests that we might also find nouns realizing # and its dependent feature > 1. Such nouns should also not combine with *a(n)* or *-s,* but they should consistently trigger plural agreement.

(7) a. The cattle are lowing.
b. *Cattle is grazing in the meadow.
c. *A cattle is lowing.
d. *How many cattles will she buy?

These nominals have the structure in (8):

(8)



Like *furniture,* these nominals cannot combine with any independent expression encoding number.

While the bundling of # with N as in *furniture* and *cattle* occurs in English only on a few exceptional lexical items, this pattern is more prevalent in other languages.

4. Nouns with and without # in Edo

Edo, as described by Baker (2003), has an underlying count/mass distinction, as seen in the fact that nouns such as *èbé* ('leaf') and *àkhé* ('pot') are compatible with numerals and plural agreement, while nouns such as *àmẹ̀n* ('water') are not:

(9) Edo (Baker 2003: 117)

a. *Ávbé* {*èbé, *àmẹ̀n*} *dè-lé.*
PL leaf water fall-PL
'The {leaves, *water(s)} fell.'

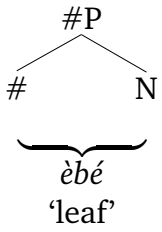
b. *Òzó dẹ̀-lẹ́* {*àkhé, *àmẹ̀n*}.
Ozo buy-PL pot water
'Ozo bought {pots, *water(s)}.'

c. *Òzó miẹ́n* {*àkhé, *àmẹ̀n*} *èvá*
Ozo find pot water two
'Ozo found two {pots, *water(s)}.'

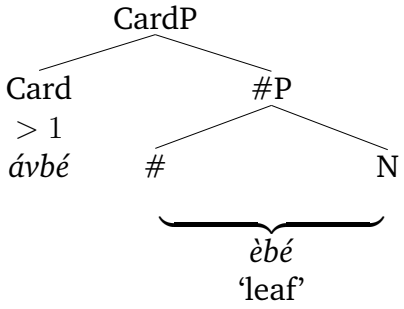
- Edo count nouns can't be like *furniture* in English, since they can be pluralized, and don't denote collections the way nouns like *furniture* do.
- They can't be like *eel* in English, since (as far as we know from Baker) they can only appear as count nominals.
- As in Hungarian and Turkish, Edo nominals with overt quantity expressions don't act as though they are plural.

We propose that in Edo, # and > 1 map to different syntactic projections. # is bundled with N, as in (10a), while > 1 projects independently, as in (10b). Mass nouns in Edo are as shown in (10c), with # contrastively absent. We assume that numerals are heads of the same syntactic category as > 1, as shown in (10d). This accounts for the absence of plural marking when a numeral appears.

(10) a.

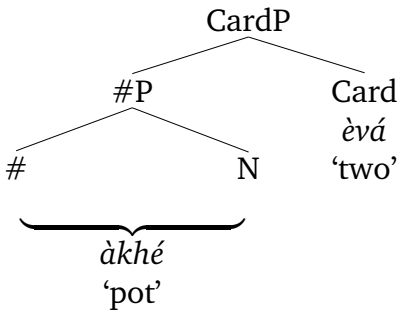


b.



c. N
àmẹ̀n
'water'

d.



5. Chinese

5.1 Count nouns and classifiers

We follow Cheng and Sybesma (1999) in assuming that Chinese nouns are lexically categorized as mass or count. In this respect, Chinese is like Edo. However, unlike count

nouns in Edo, Chinese count nouns cannot actually be counted without a classifier, as shown in (11).

(11) Mandarin (Cheng and Sybesma 1999: 514)

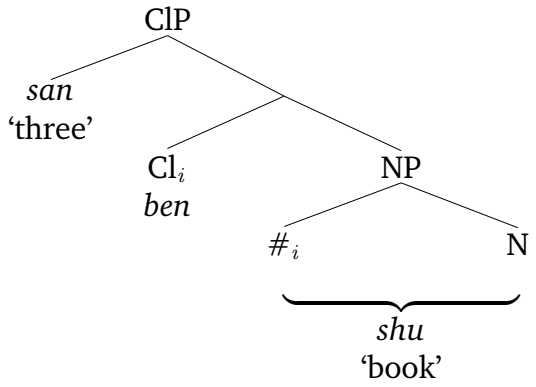
a. *san ben shu*
three CL book
'three books'

b. **san shu*

We propose that count nouns in Chinese are structured like *furniture*-class nouns in English. They bear the feature #, but it is N, not #, that projects. The Chinese *san shu* is thus ungrammatical for the same reason that *one furniture* is ungrammatical in English.

According to Cheng and Sybesma (1999: 515), classifiers "name the unit in which the entity denoted by the noun naturally occurs." We implement this with the structure in (12).

(12)



We take # and Cl to be two versions of the same projection, namely individuation. Essentially, Cheng and Sybesma's insight amounts to saying that Cl is a defective version of #. The effect of coindexing the Classifier head with the # feature within NP is to project the individuation property, converting a noun like the English *furniture*, in which # is a modifier, into one like the Edo *èbé* 'leaf', in which # projects. We assume that numerals appear in the specifier of ClP in Chinese, in parallel to their position in English in the specifier of #P, and in contrast to their position in Edo in the head of CardP.

5.2 Mass nouns and massifiers

Chinese mass nouns cannot appear with ordinary classifiers. Instead, they appear with what Cheng and Sybesma (1999) call "massifiers," as shown in (13). Count nouns can also appear with massifiers, as shown in (14).

(13) a. *san ping jiu*
three CL-bottle liquor
'three bottles of liquor'

b. *san ba mi*
three CL-handful rice
'three handfuls of rice'

c. *san wan tang*
three CL-bowl soup
'three bowls of soup'

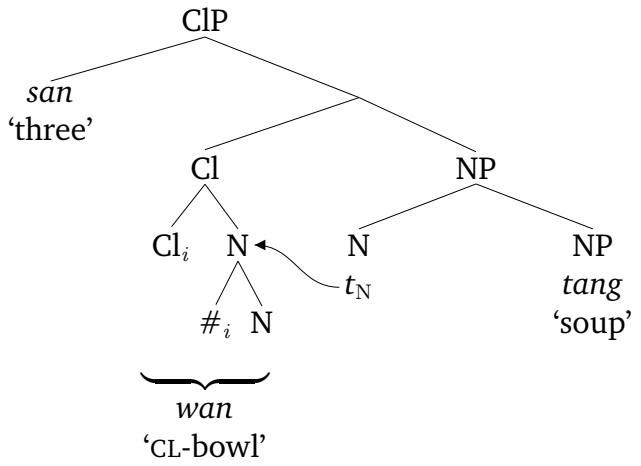
(14) *san bang rou*
three CL-pound meat
'three pounds of meat'

Massifiers have two interesting properties:

- They create, rather than simply name, a unit of measure, and can thus take mass nouns as complements.
- They can be counted without a classifier, and thus differ from other Chinese count nouns.

Cheng and Sybesma (1998) argue that massifiers are nouns that move from N to Cl within ClP. The result, for us, is that they are like Edo count nouns: They bear a number feature, and that feature projects.

(15)



6. Conclusion

- UG makes available a set of number/individuation features (though not all features are realized in every language). So far, we have identified the following elements:

#:	individuation
Cl:	defective individuation
> 1:	semantically dependent on #, may be syntactically independent
> 2:	dependent of > 1 in languages with dual number (see Cowper 2005)
Card:	any syntactic head that is semantically dependent on # (numerals, > 1)

- The different realizations of individuation (grammatical number, the mass–count distinction) arise from:
  - different lexical items spelling out the features
  - different syntactic configurations of the features
- Even within a language, we can find exceptional items that resemble the norm in other languages—e.g., English *furniture* is like a Chinese count noun.
- We expect to find the same kinds of variation in other grammatical features—e.g., tense and aspect. (See Clarke (in progress).)

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