Acquiring and grammaticalizing individuation

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The world is divided into individuals and substances, i.e. entities that inherently separate into countable units and entities that do not. This divide is reflected in the grammar of some languages, commonly termed the count/mass distinction, and languages differ in how this distinction is made. The morphosyntactic marking of number in English and the classifier system of Mandarin Chinese are argued to be different strategies reflecting this same underlying divide (Borer 2005; Cheng and Sybesma 1998). In this paper, I link the transparency of the overt marking of the semantic divide to the acquisition of the semantic concept and how it is reflected in the lexicon and the syntax. I argue that differences in the correlation of semantic and phonetic content motivate different systems of functional projection in the grammar.

In languages like English, the individual vs. substance divide is directly reflected in the grammar. Count nouns refer to individuals and mass nouns refer to substances. The morphosyntactic behaviour of the two classes is different, such that count nouns can occur with plural morphology, after the singular indefinite article, and in direct combination with numerals, whereas mass nouns cannot. The individual vs. substance divide appears to have a one-to-one mapping with the count/mass distinction in English.[1]

In languages like Mandarin Chinese, the divide is not reflected in the same way. A bare noun can refer to individuals or substances, as in (1), meaning Mandarin nouns can refer to plural individuals without plural morphology.[2]

(1)   *Zhou-shang   you   xigua*   (from Zhang 2014)
       table-on   have   watermelon
       "There is a watermelon on the table / There are watermelons on the table / There is a slice of watermelon on the table / There are slices of watermelon on the table / There is a pile of watermelon on the table / There are piles of watermelon on the table"

For counting, nouns can only combine with a numeral through a classifier. This aligns them at least superficially with English mass nouns, which require a measure word to be countable, e.g. *three puddles of mud*, an observation that has led many to argue that all nouns in classifier languages like Mandarin are mass nouns (Chierchia 1994, 1998; Krifka 1995). However, there are broadly two types of classifier: those which pick out an individual and those which provide a measure (Cheng and Sybesma 1998). I refer to these two types as classifiers and measure words respectively. Crucially, classifiers can only combine with nouns that can refer to individuals and therefore it is classifiers which provide a grammatical reflex of the individual vs. substance divide in Mandarin Chinese.

The function of a nominal phrase is to identify reference. I maintain that this identification is achieved by taking the lexical denotation of a noun and successively applying functions to it, via functional heads, to return an output which identifies the intended referent. Both the lexical information stored on the noun and the applicable functions vary cross-linguistically based on the concepts relevant to a specific language. The functional projections are created during acquisition, based on systematic correlations between semantic notions and phonetic content. If an acquirer notices a systematic link between specific phonetic content and a specific semantic distinction, then this information will be grammaticalized as a functional head.

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[1] This puts to one side the issue of "collectives" (Bunt 1985) or "object-mass nouns" (Barner and Snedeker 2005) such as *cattle* and *furniture*, which refer to individuals but behave like mass nouns.

[2] The plural suffix *-men* is not obligatory when referring to plural individuals and is only available to animate referents, thus I set it aside as a different type of pluralizer.

For the count/mass distinction in English, the correlation between the semantic and phonetic content is near binary: if a noun can take the plural suffix then it denotes an individual, if not then it denotes a substance. The close mapping in English leads to early acquisition of the count/mass distinction, at 24 months old (Barner at al 2007), and the early grammaticalization of a functional head Number which reflects this correlation. The functional structure is used by children from a young age to inform them as to how words should be listed in their lexicon. This results in structures as in (2).

(2) (a) Plural count:
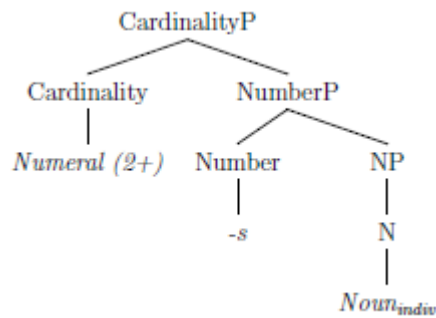
(b) Singular count:
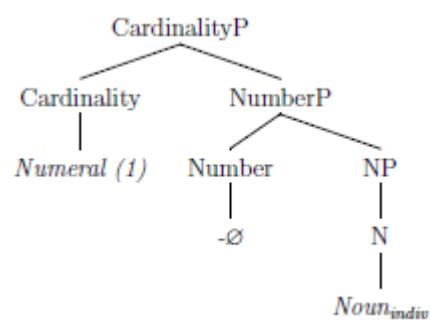
(c) Mass:
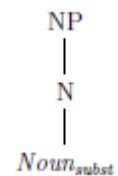
Nouns are stored as referring to individuals or substances. The function of Number can only apply to individuals and the Cardinality function can only apply to the output of the Number function – as the Number function realises the individuation in the syntax.

In Mandarin Chinese, whilst the semantic contrast remains binary, individual vs. substance, the phonetic contrasts are much more complicated. A bare noun can refer to either individuals or substances and there is a range of phonetically varied classifiers. Furthermore, classifiers have additional semantic content relative to the English plural suffix in that they can refer to the shape, animacy, function, etc. of the noun's referent. I argue that the comparatively more complex mapping leads to later acquisition of the count/mass distinction, at 6 years old (Huang et al. 2005), and the late adoption of the functional head Classifier to reflect this correlation. The functional structure cannot inform the acquirer as to whether nouns are individuals, so whether the noun's referent has inherent discrete units is stored alongside other semantic information which is not immediately relevant to the syntax. Nouns are therefore listed as "individuable". This results in structures as in (3).
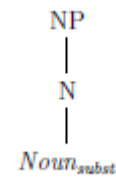
(3) (a) Counted individuated:
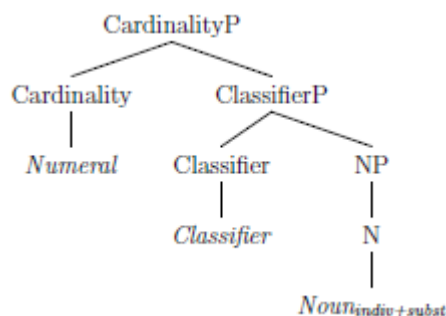
(b) Individuable:
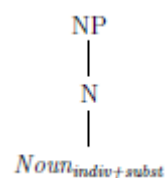
(c) Non-individuable:

Nouns are stored as individuable (individuals + substances) or not (substances). The Classifier function can only apply to individuable denotations and the Cardinality function can only apply to the output of the Classifier function – as only individuals can be counted.

In summary, based on the differences between English grammatical number and Mandarin classifiers, I argue that the transparency of the correlation between a semantic concept and its overt marking determines the point of acquisition of the concept, whether it is grammaticalized, how it is grammaticalized, and the syntactic structure that is created during acquisition.