

***Furniture on its Really Peculiar Behaviour: A Functional Account***\*

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## 1. Introduction: How We Count Things

The concepts count and mass are far from straightforward but in order to begin our consideration, let us develop a relatively simple working definition. The concepts are first and foremost relevant in the nominal domain, so we start there, and consider provisionally a count noun to be one that identifies a unit that can be counted, such as *squirrel* or *chair* (one *squirrel*, three *chairs*), and a mass noun to be one that names an entity that comes in mass form and therefore cannot inherently be separated into countable units, at least not without a change in meaning (#one *air*, #six *rices*).<sup>1</sup> Similar examples include the sentences in (1) - (3) .

- (1) a. Oats are/\*is good.  
b. Wheat is/\*are good. -Bloomfield 1933: 266
- (2) a. desks  
b. two desks  
c. two hundred/hundreds  
d. thanks/\*a [one] thank
- (3) a. furniture/\*furnitures, mail/\*mails  
b. \*two furnitures, \*three mails  
c. water/\*waters, gravel/\*gravels  
d. \*two waters, \*three gravels

Along the same lines, two criteria, i.e. divisibility (Cheng 1973) and cumulativity (Quine 1960) can be invoked (Gillon 1992). Mass noun referents can generally be divided without loss of integrity, that is, half an amount of water still yields water, which is certainly not the case for a squirrel; and mass nouns can also be accumulated without essential change (to be discussed below).

A further test in English is that count nouns are those that can be pluralized (*squirrels*), whereas mass nouns are those that cannot be pluralized (without a change in meaning) (*#rices*). Once we have established this basic (partly English-based) distinction, we can pose three core questions: (i) **Do these concepts form part of a universally shared cognitive capacity and are they mapped uniformly to the real world? (cf. the contrast in (1))**. In other words, do all humans understand squirrels to be essentially different from water, and if so, would all humans consider *rice* to be mass and *pea* to be count? Perhaps the answer to the latter part of the question will be no, which will be elaborated later in section 14. (ii) **Are the concepts count and mass in some way grammatically encoded in all languages, or is it possible for languages to forgo any grammatical expression of these concepts?** (iii) **Are count and mass always realized in the same way in grammars cross-linguistically, such as through the availability (or not) of plurality noted for English above, and if not, what are the various ways that they are encoded in language?** Clearly the answers to the questions (ii) and (iii) are in the negative as is seen in the sentences in (4) .

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<sup>1</sup> The hash mark represents that the form is accepted in a different sense.

- (4) a. tsukue tsukue 机机 (desk desk ‘intended to mean two desks’)  
 b. tsukue ni-dai 机 2 台 (desk two *dai* (*classifier*) ‘intended to mean two desks’)  
 c. ni-dai-no tsukue 2 台の机 (two *dai* (*classifier*) of desk ‘intended to mean two desks’)  
 d. hitobito 人人 (人々) (person person), yamayama 山山(山々) (mountain mountain),  
 tomo-dachi 友だち (friend+plural suffix) (all intended to mean ‘a lot of referents of the  
 repeated noun’)

## 2. The Data

- (5) Jane has blond {hair/\*hairs}./Harry noticed two grey hairs on Jane’s temple.-W<sup>2</sup>  
 (6) We had {\*a very good/very good} weather when we were on holiday./We go out in all  
 weathers./He liked stormy weather.  
 (7) Sorry I’m late. I had {some trouble/troubles} with the car this morning.  
 (8) I want something to read. I’m going to buy {a/?some} paper.  
 (9) I want to write some letters. I need {\*a/some} writing paper.  
 (10) It’s very difficult to find a {\*work/job} at the moment.  
 (11) Bad news {\*don’t/doesn’t} make people happy.  
 (12) Our {?travel/journey} from London to Aberdeen by train was very interesting./Foreign  
 travel is restricted by the government./He contemplates balloon-travel and a journey to the  
 North Pole.  
 (13) The flat is empty. We haven’t got any {\*furnitures/furniture} yet.  
 (14) When the fire alarm rang, there was {\*a complete/complete} chaos./There is now complete  
 confusion and chaos in Government on abortion./ A complete chaos and deception, do not  
 book a night in this BW hotel.  
 (15) I had to buy {\*a/some} bread because I wanted to make some sandwiches.  
 (16) After spending most of his life travelling around the world, he is now writing a book about  
 his {experience/experiences}.  
 (17) a. Pinot Noir is wine./Pinot Noir is a wine.  
 b. Kim produces sculpture./Kim is producing a sculpture.  
 c. Sandy likes lamb./Sandy likes every lamb.  
 d. Beer on the table/Three beers on the table/Eight beers on tap.  
 (18) a. Leslie has more car than garage. [I had more clothes than I had closets, more cars than  
 garage space, but no money.- Sammy Davis, Jr]  
<http://www.brainyquote.com/quotes/quotes/s/sammydavis334351.html>  
 b. Chris Pronger, 6’6” worth of defenseman...  
 c. He’s got woman on his mind.  
 d. What a hunk of man!  
 e. Some people like data better than theory.  
 Pelletier (2012: 14)
- (19) While the count-mass distinction as just outlined may seem intuitively clear, it turns out to  
 be difficult to make it precise, especially to make it sufficiently precise for being  
 incorporated in a formal grammar. For example, while apple may seem a clear example of a  
 count noun, it is possible to say things like *Don’t put too much apple in the salad*, using  
 apple as a mass noun. David Lewis has invented a hypothetical device to show that every  
 count noun can be used as a mass noun. This device, the **Universal Grinder**, can take as  
 input any objects, denoted by a count noun, like apples, books, or crocodiles; it grinds these

<sup>2</sup> Throughout the paper W stands for Wierzbicka (1988).

and spits out the stuff that the objects were made of: apple-stuff, book-stuff, crocodile-stuff. This machine could be said to turn apples into apple, books into book, and crocodiles into crocodile. One can also imagine a device that works in the other direction. This device, that we might call the **Universal Packer**, takes as input a continuous stream of any stuff that a mass term *M* may refer to, and outputs packages containing amounts of *M* that are appropriate in a given context. This device illustrates that one can in general construct a count use of a mass noun by finding a context in which the stuff, that the mass noun normally refers to, comes in certain standard portions, like cups of coffee in a restaurant, where it is quite common to speak of two coffees. --Bunt 2006

- (20) There is *steak* all over the floor. Pelletier (1975: 455)  
 (21) There is *man* all over the floor. *ibid.*  
 (22) The sentence 'If there were any *unicorns* and if we were to put one into the grinder, there would be *unicorn* all over the floor' uses 'unicorn' in the required sense. Pelletier (1975: 456)

### 3. How Can the Same Noun Be Countable or Uncountable?

- (23) The piece of an iron is not a piece of iron; it's the wooden handle. --Gleason 1961: 225  
 (24) a. I bought a bag of poppy seed.  
 (25) I planted a seed. --W: 525  
 (26) a. I bought a hundred kilogram of grain/rice/butter.  
 b. There are only five grains left.-W: 518  
 (27) a. I had two eggs/apples for breakfast.  
 b. Add more apple/egg to the salad.  
 c. ?I bought 5 kilograms of apple. --W: 521

### 4. Three Properties That Make Entities Countable: A Personal Account

Countability is not a property of the entity nouns refer to, but it is concerned with the way in which native speakers of English construe (interpret) the entity.

- Boundedness/boundary
- Individuation
- Heterogeneity (heterogeneous)<sup>3</sup>

### 5. Preamble: Setting the Context

Grammatically non-countable nouns include well-behaved mass nouns (e.g. *water, butter, sand, sugar*) and some misfits (e.g. *furniture, mail, luggage, change, jewellery, ammunition*). These so called "*furniture-nouns*" are attracting attention due to a surprising combination of properties, which straddles mass and count. (Wierzbicka 1985, Wisniewski and Murphy 1989, Chierchia 1998, Barner and Snedeker 2006, Mihatsch 2007, Rothstein 2010).

The paradigm below gives the morpho-syntactic environments where the usual change in form occurs for the countable/mass nouns in English.

<sup>3</sup> Homogeneity as opposed to heterogeneity is the condition of all the things in a group being very similar or of the same type. In other words, the part of the entity is equal to the whole. In my terms, there is no internal structure of the entity. A typical instance is water; the structure of every bit of it is that of the whole. This is why water is divisive and cumulative.

■ Countable nouns

- (28) a. + [ *a/an/one* \_ ]  
 b. + [ *few/these* \_ ]  
 c. + [ *2/3/4* \_ ]

■ Uncountable nouns

- (29) a. + [ *some* \_ ]  
 b. + [ *little* \_ ]  
 c. + [ *most of the/all of the/all the/half the* \_ ]

According to this system, like core mass nouns, liquids and substances (e.g. *water, butter, sand, sugar, gravel*), *furniture*-nouns are judged to be non-countable, because they cannot pluralise, nor take numeral quantifiers.

- (30) a. *furniture*/\**furnitures*, *mail*/\**mails*  
 b. \**two furnitures*, \**three mails*  
 c. *water*/\**waters*, *gravel*/\**gravels*  
 d. \**two waters*, \**three gravels*

Previous studies have either emphasized that *furniture*-nouns are like core mass nouns; that is, they are also “unindividuated” (Wisniewski *et al.* 1996) or that the denotations of these nouns contain constituent objects; hence, Barner and Snedeker (2006) label them *object-mass nouns* as opposed to *substance-mass nouns* (e.g. *sand* or *oil*).

In this paper I argue that my analysis of *furniture*-nouns recognises both facets, which are in fact, structured, reflected and realised in English. This paper thus addresses the following key question: **what is in the denotation of *furniture*-nouns that allows them to have this puzzling conjunction of properties (i.e. non-countable syntax, individuals in denotation, heterogeneity)?**

## 6. Key to the Analysis

Let me first of all consider the key to the proposed analysis: the artefactual nature of these *furniture*-nouns, which brings in an **associated event**:

- This idea facilitates a comparison with typical mass nouns, which are natural kinds, allowing us to see similarities with and differences from them.
- When considered at the appropriate level of abstraction, these nouns turn out to be analogous to granular aggregate mass nouns (e.g. *sand* or *sugar*)

## 7. Previous Approaches

### 7.1. Collection of Individuals View

#### 7.1.1. Collection of Individuals View: Basics

Crucially this is the view proposing that the denotation of *furniture*-nouns is simply composed from their component entities (e.g. Chierchia 1998, Bale and Barner 2009).

- the existence of an associated event which canonically involves multiple participants
- the presence of constituent objects in the denotation

Notice that there is evidence supporting that both components of meanings must be acknowledged and *furniture*-nouns and their purported constituents show different grammatical behaviour in three aspects:

- Substitutability: there are limits to substitutability between a *furniture*-noun and its component parts.
- Adjectival Modification: some adjectival modifiers occur more happily with the *furniture*-noun than its component parts, and vice versa.
- Comparison: comparisons need not be based on component parts, but may involve the fulfilment of function.
- 

(31) John arranged  $\left\{ \begin{array}{l} \text{the furniture.} \\ \text{the sofa, coffee table, chairs.} \end{array} \right.$

### 7.1.2. Collection of Individuals View: Shortcomings

#### ■ Lack of Co-extensiveness

*Mail*, which is the set of objects that have in common that they have been mailed and, thus, will travel together through the postal system may include letters, but also magazines, packages, postcards, and the like. *Letters*, written to convey information to some recipient(s), on the other hand are a far narrower class of entities and therefore need not actually have been mailed.

*Packages* and *magazines* are also far narrower classes of entities; those also need not actually have been mailed but are used to facilitate the transportation of goods or can be bought in a store. Still, *mail* or *letters* may in a particular situation be used to pick out the same set of entities but it must be recognised that this coincidence, nevertheless, is not equivalence. This follows from the fact that in using one noun or the other, a speaker is choosing a specific description, with its own attributes, even if both nouns may pick out the same things in the world on a particular occasion. The choice is analogous to the contrast drawn in the linguistics literatures on aspect concerning events vs. event descriptions.

To be sure, it is intuitively clear to native speakers of English that not all letters, packages or magazines are mail. Nor is all mail letters, packages or magazines. It may well be that any strong form of substitutability between the *furniture*-nouns and their constituent parts should allow for the same inferences. Note that there is relevant evidence that not all inferences are valid. Observe the following contrast:

- (32) a. The furniture was wood.  $\supset$  The table was wood.<sup>4</sup>  
 b. The furniture was sparse.  $\not\supset$ \*The table was sparse.<sup>5</sup>  
 c. Mary sent John letters  $\supset$  Mary sent John mail.  
 d. Mary sent John long letters.  $\not\supset$ \*Mary sent John long mail.

As the contrast in (32) shows, *The furniture was wood* in (32) a can imply *The table was wood*, but *The furniture was sparse* in (32) b cannot imply *The table was sparse*. There is no reason why the implication should apply in both cases because the furniture includes the table and the inheritance will predict that the proposition true with the furniture, which is a superordinate of

<sup>4</sup> The symbol  $\supset$  means implication.

<sup>5</sup> The symbol  $\not\supset$  means the negation of implication.

table, will be automatically applied to the table. The data turn out to be to contrary. The same is true with the pair in (32) cd.

Thus it becomes apparent that the claim or prediction that *furniture*-nouns and their constituent parts are co-extensive in denotation is falsified or not true.

#### ■ Adjectival Modification

It is predicted that substitutability would suggest the same patterns of adjectival modification between two types of nouns because it is duly assumed that they share a certain degree of co-extensiveness. Due to their function, *furniture*-nouns may lend themselves to modification patterns distinct from those of their component parts. In fact, Grimm and Levin (2011) point out that their corpus analysis reveals real and systematic differences in the adjectival modification between *furniture*-nouns and their constituent entities. Concomitantly, their study underscores the importance of the associated event. The relevant evidence they found is:

- Preferential Distribution: different preferences for the adjective types are found with the two noun types.
- Complementary Distribution: adjectives which are only found with one of the noun types, which is exemplified by the contrast in (33) .
- 

The general pattern seen in *mail* and *letters*, according to Grimm and Levin (2011), is that the adjectival modifiers for *letters* often characterise the content of the letters, while the adjectival modifiers for *mail* overwhelmingly concern the event tied to the noun, its delivery. The same difference in modification pattern goes with *furniture* and *table* and *chair*. In fact, this is borne out.

(33) Instances where substitutability fails with adjectives:

- (a) contradictory letters ≠?contradictory mail
- (b) sparse furniture≠\*sparse table and chair

The generalisations Grimm and Levin (2011) provide for Preferential Distribution with *furniture* are:

- Adjectives denoting shapes, dimensions or localization are more prevalent with individual pieces of furniture.

#### Table of Results

Category	Example	<i>Furniture</i>	<i>Chairs, tables, beds</i>
Total Spatial		6%	18%
Shape	<i>oblong, high-backed</i>	< 1%	6%
Dimension	<i>high, narrow</i>	0%	4%
Localisation	<i>opposite, central</i>	0%	2%

Grimm and Levin (2011)

**Table 1** Preferential Distribution with *furniture*

#### 7.1.3. Collection of Individuals View: Conclusion

Given these facts, co-extensionality and substitutability in the strong form is likely to fail, which cast doubt on the collection of individuals view of *furniture*-nouns.

## 7.2. Mass Superordinate View

I will now turn to some data that render the alternative view Mass Superordinate View untenable.

### 7.2.1. Mass Superordinate View: Basics

The view takes it that *furniture*-nouns are a sort of superordinate term, viz. name of the top element of a taxonomic hierarchy (Markman 1985, Rosch 1975). The view is motivated among other things by the motivating question: why does the denotation of a *furniture*-noun, for example, *mail* encompass so many different types of objects?

The relation between a noun such as *mail* and its components resembles the manner in which a superordinate term gathers together heterogeneous subordinate terms. Figure 1 represents a Mass Superordinate View of *mammal* and its components.

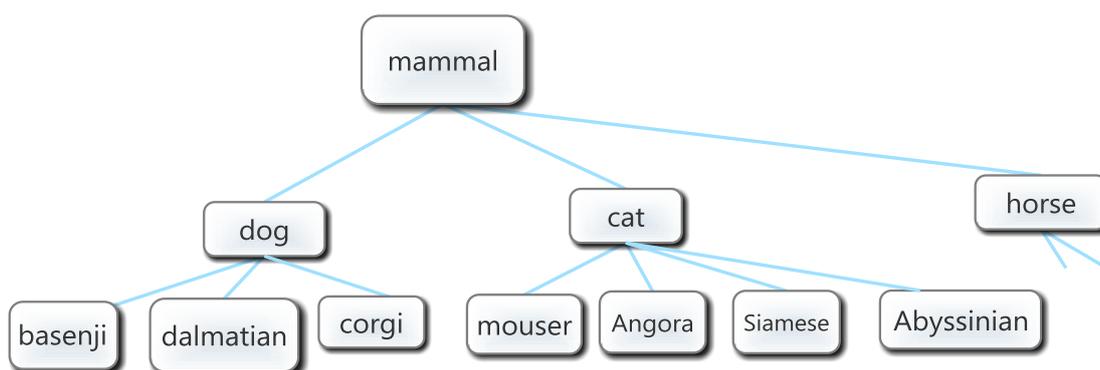


Figure 1 Mass Superordinate View of *Mammal* and its Components

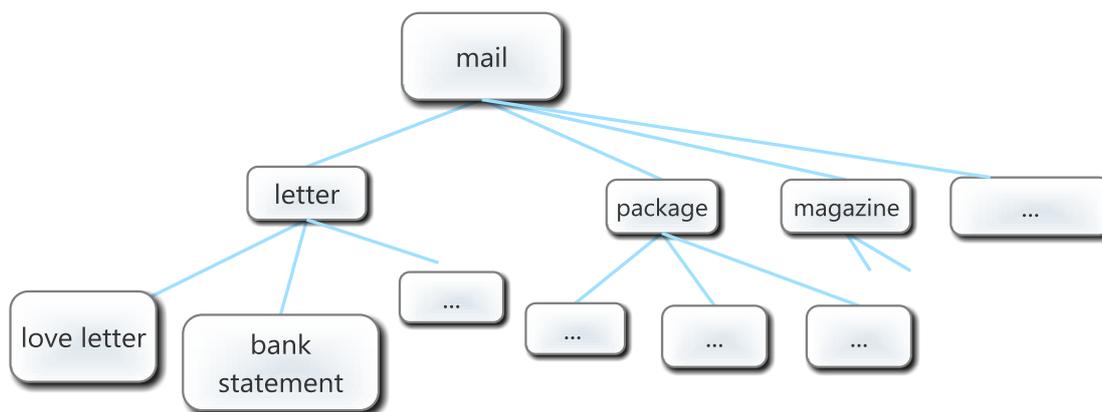
The relevant properties of the system used in the above figure:

- **ISA** ('is an instance of' or 'is a kind of relation'): A sub-element is a kind of super-element.<sup>6</sup>
- **Inheritance**: A sub-element inherits the properties of the super-element. The inheritance guarantees that all the properties the superordinate *mammal*, in this case, carries are automatically copied (or percolated down) to its subordinate unless overridden by the special properties owned by the subordinate.

### 7.2.2. Mass Superordinate View: Shortcomings

Let us take a look at another figure below, which draws an apparent Superordinate View of *mail* and its purported components.

<sup>6</sup> **ISA** relation is a concept employed in Richard Hudson's Word Grammar, in which the author is a specialist.

Figure 2 Apparent Superordinate View of *Mail*

where a kind of relation between the superordinate and the subordinates seems awkward because it is clear that a letter is not a kind of mail. Further with the inheritance, the properties of the purported superordinates do not trickle down to their subordinates (cf. Wierzbicka 1985, Mihatsch 2007). If mail is delivered, then the subordinate terms should inherit this property, which they in fact do not, evidenced by the real fact in the world that not all magazines are delivered.

The problem is exacerbated by *furniture*. It is noteworthy that there are cases when the noun *furniture* in fact includes such a heterogeneous array of entities as in (34) and (35) :

- (34) The *furniture was all his too*, those cabinets with bulging fronts and curved legs, chairs with buttoned backs, a velvet-covered love seat, a big oval table supported on a wooden base shaped like a vase, mirrors framed in gilt, pale mauve and green watercolours and dark portraits in oils. (BNC CDB1226, my emphases and italics)
- (35) The house, centrepiece of a great estate, had once been the home of a Maharajah. The vast rooms were crammed with a rich man's equivalent of Stanley's jumble-filled stables. *All the furniture was on a mammoth scale*; luxurious sofas the length of ocean liners, and billiard tables the size of cricket pitches. There was even an entire suite made of glass. Chandeliers threatened like fireworks frozen in mid-burst. Mungo imagined them shattering, burying the floor in a tidal wave of crystal. *On most of the walls there were stuffed heads; lion, tiger, deer, something with horns like long corkscrews - and animals that looked so small and delicate... Might as well shoot dragonflies, Mungo thought. What species of idiot, he wondered,* (BNC ACB988, my emphases and italics)

If we take a taxonomic view of *furniture*-nouns and draw up its hierarchy, the inheritance relation between the superordinate and the subordinates will be something like Figure 3.

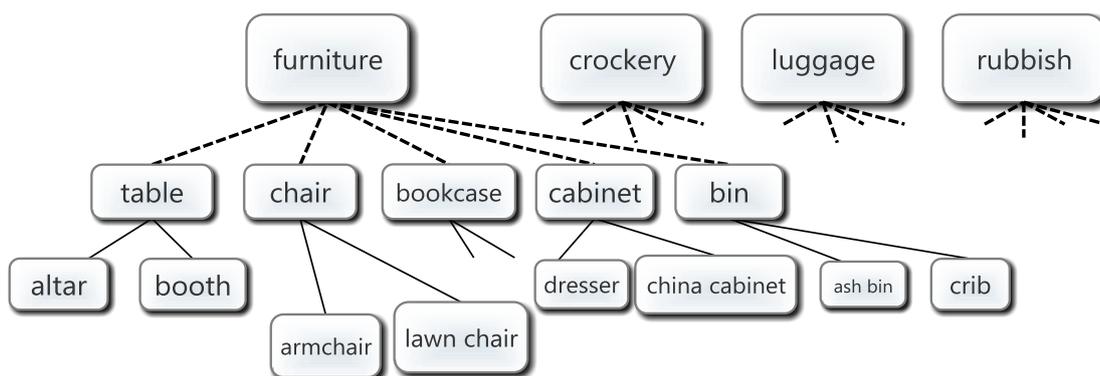


Figure 3 *Furniture* and its Components

How can it be possibly for *furniture* to be a superordinate for the entities below? If this is the case, then it would seem that any item in a room can be entitled to be called a piece of furniture, which is contrary to the fact. Bear in mind that in Figure 3 the link between *furniture*-nouns and their components is indicated by a dotted line, which means that the link is realised by the functional identity rather than similarity in form or denotation.

### 7.2.3. Mass Superordinate View: Conclusion

The arguments so far lead to the conclusion that both superordinate and subordinate relations fail for *furniture*-nouns, which makes it difficult to maintain the mass superordinate view.

## 8. From Observation to Theoretical Characterisation

We have already seen above that the data suggest that *mail* denotes something other than letters, magazines, etc. Then the question arises what makes something qualify as *mail*. It is simply because of the fact that it has been mailed. Let me repeat it here again that mail is considered to be a set of entities which have in common that they travel together through the postal system. Therefore it is safe to maintain that the shared function is *what mail is all about*.

### 8.1. Artefacts and Their Associated Events

I assume that there are “two types of noun meaning”:

- (i) nouns whose meaning is based on physical properties of the referent
- (ii) nouns whose meaning is represented by the canonical event associated with the referent"

(Nichols 2008: 694)

In this connection, the canonical associated events for *furniture*-nouns can be identified as follows:

- *furniture*: furnishing a space
- *mail*: transmittal through the postal system
- *luggage*: pulling or carrying throughout a journey
- *change*: returned money from monetary transaction

## 9. A Proposal

- (36) a. *Furniture*-nouns denote a set of elements that participate together in an event.  
 b. The event canonically involves a collection of elements, which (often) function together, typically a heterogeneity of elements in the collection.<sup>7</sup>  
 c. Given their critical components, *furniture*-nouns are better thought of as functional collectives

## 10. Functional Collectives

The associated event imposes constraints on *furniture*-nouns. The countability properties follow from the collective nature of the associated event because they do not directly denote individual objects rather a set of elements unified by their joint participation in a particular associated event. We might say that the boundary of a constituent unit is not likely to be profiled or foregrounded in terms of Cognitive Linguistics.

## 11. Functional Collectives: Evidence for an Associated Event

One can take Adjectival Modification as evidence for the existence of an associated event: some of the adjective + noun combinations clearly specify properties of the event (e.g. mail and delivery). There is further etymological evidence arguing in favour of the idea that functional collectives have an associate event. The nouns at issue are often deverbal, wearing the associated event on their “sleeve”, as it were:

- *furniture* (< French *fournir* ‘to furnish’)
- *luggage* < *lug* (v.) + *-age*
- *change* < *change* (v.)

The etymology of these verbs tell that they are in fact related with the action. The semantic content will be nothing but the function they are supposed to do.

Alternatively they are closely tied with an event in a different manner: *mail* is, for instance, derived from bags used by couriers (“mail of letters”).<sup>8</sup>

## 12. Evidence for Collectivity

Some adjectives such as *sparse* or *dense* highlight this element of meaning (i.e. functional meaning) within these terms. This we have already discussed over the sentences in (33).

## 13. Evidence for Heterogeneity

Prediction for comparatives: since our analysis contends that a functional collective implies that the components satisfy the associated event together and involve a degree of heterogeneity. In other words, the shared function between the constituents play much more role in grouping seemingly heterogeneous items together. A set of items that better represent its heterogeneity will be considered to represent more of the functional collective.

Grimm and Levin (2011) report the interesting results of their experimental study on the heterogeneity where 20 participants were asked to evaluate whether (i) five chairs or (ii) a sofa, two chairs, a coffee table, and a bookcase (five items) counted as more furniture. The result they obtained is that the participants unanimously answered (ii), with many commenting that this set better performed the function of furnishing. The results run counter to the predictions of any

<sup>7</sup> Heterogeneity is a frequently noted property of functional aggregates, but not a necessary one. Several different types of entities may participate in the same way in the associated event, hence the connotation of heterogeneity.

<sup>8</sup> cf. Mod. Fr. *malle* means ‘suitcase’.

theory where the denotation of *furniture* is equivalent to the constituents in the set.

#### 14. Why Are Functional Collectives Non-Countable?

Functional collectives or artefacts are non-countable although their members are heterogeneous and appear to be distinguishable.

- (37) a. Rice is good for you.  
 b. Beans are good for you.  
 c. This rice is good.  
 d. These beans are good.  
 e. Has anyone really died choking on a grain of rice or popcorn?/[S]he began choking on a bean./An 82-year-old man choked on beans on toast.  
 f. \*a rice/a (single) grain of rice  
 g. a bean/\*a grain of beans  
 h. some rice /səm raɪs/  
 i. some beans /səm bi:nz/
- (38) Tilda Basmati is *legendary rice*, of consistently superior quality, meaning you get a great yield every time and can deliver your customers the distinctly delicate flavour that is pure Basmati. Through their growing investment and commitment to Basmati and those that grow it, you can rely on Tilda to provide *a rice that is superior in quality and consistency*. 29 June 2013, <http://www.tilda.com/news/it-will-be-all-spice-on-the-night>
- (39) Fold back the ear flap, and briskly pull out *one or two hairs* at a time, in the direction of growth.-- ACM 902
- (40) Pull yourself together, Sebastian! - But there's *dog hair* all over the... 29 June 2013, <http://www.subzin.com/quotes/Frostbitten/Pull+yourself+together,+Sebastian!+-+But+there'+s+dog+hair+all+over+the>

#### 15. Countability for Natural Kinds

For natural kinds, aggregate collectives are not countable (“have mass syntax”) in English: *wheat*, *grass*, *rye*, *sand*, *flour*, etc. In contrast, the so-called group collectives such as *team*, *committee* or *flock* are countable, the reason being that a constituent member of the group collectives can be individualised as a unit, because each member has its own internal structure, which is not the same as the group as a whole.

The reason why aggregate collectives of natural kinds are not countable is because the members are not distinguishable (are similar) in form and one interacts with them as a group rather than as a member.

#### 16. Countability for Artefacts: Functional Similarity

Countability properties of artefact nouns follow from the nature of the associated event.

- Artefact nouns with associated events which canonically involve single entities will lexicalize as countable nouns:

*chair*: only use one chair at a time to sit on

- Artefact nouns with associated events which canonically involve multiple entities will not lexicalize as countable nouns:

*furniture*: use more than one piece at a time to furnish a room

Analogous conditions are at work for artefacts, but with respect to the canonical associated event

of the entity at hand.

### 17. Number Marking for Artefacts

Furniture is distinguishable because *furniture*-nouns name sets whose members are identical with respect to their role in an associated event. Each element of *furniture* satisfies the furnishing event.

- Mode of interaction: one canonically interacts with multiple items when it comes to *mail* or *furniture*. In episodic contexts, these nouns canonically refer to multiple co-located elements

### 18. Heterogeneous, yet Homogeneous

Granular aggregate nouns are undifferentiated and homogeneous in terms of the form of their components (e.g. the individual grains of sand). It is considered to be a collection of different instances of the same form.

*Furniture*-nouns, on the other hand, are undifferentiated and homogeneous in terms of their components with respect to their participation in the event (e.g. furnishing). It is a collection of different instances of an element satisfying **the same function**.

### 19. Number Marking for Artefacts: Conclusions

The non-countability of functional collectives follows from considering their associated events. It remains a mystery under the collection of individuals or mass superordinate views.

### 20. Artefacts and How They Are Structured in Semantics

Artefacts encode a relation between entities and a predicate designating the associated event. *Furniture-nouns* are a specific type of artefact noun. They are special in that the associated event permits, and typically implies, a set of elements in the relevant relation. Thus, they are called “functional aggregates” (cf. Grimm and Levin 2011).

The name “functional aggregates” for *furniture*-nouns recognises important parallels with granular aggregates (*gravel, rice, salt*). Granular aggregates typically appear in connected clusters. For example, *rice* typically appears in clumps, not as single grains.

Grimm (2012) uses a mereotopology, a type of spatial logic, to model the various types of concrete nouns relevant to number systems across languages. Following his analysis, it turns out:

- Countable concrete nouns based on natural kinds (e.g. *dog*) designate maximal whole objects.
- Granular aggregate nouns (e.g. *rice*) designate sets of entities which are connected through one of a small set of spatial relations.

“Functional aggregate” nouns behave analogously to granular aggregates but with reference to the associated event:

- Countable artefact nouns have associated events which canonically involve single entities.
- Functional aggregates have associated events which canonically involve sets of entities (see also Schwartzschild 2012), connected through the associated event.

### 21. Consequences

Let me now return to the first question (i) ‘Do these concepts form part of a universally shared cognitive capacity and are they mapped uniformly to the real world?’ raised at the outset. This

perspective helps to make sense of the apparent arbitrariness in the world-to-word mapping within and across languages.

As for the pair *letters* vs. *mail*, focus is placed on the individual vs. the aggregate, as well as on different associated events.

As far as English *furniture* (uncountable) vs. French *meuble* (countable) is concerned, they are different nominal descriptions, while these two nouns have similar referents. As we have already seen, they have different etymologies: *furniture* > 'to furnish' and *meuble* > 'movable object'. They involve distinct associated events, whereby different countability properties derive.

## 22. Why *Furniture* Cannot Be Counted: In Plain Terms

*Furniture* refers to functions performed by pieces of *furniture* or a set of equipments that are needed in a room, rather than things. *Furniture* does NOT refer to any concrete entity. In other words, anything can be a piece of *furniture* if it functions as a thing that makes a room look like a proper room. Thus 'dust bin' can be a piece of *furniture* according to this definition.

## 23. Conclusion

*Furniture*-nouns designate more than a collection of individuals or a special type of superordinate term. They are better characterised as functional aggregates. This characterisation accounts for observed properties (collection of individuals, heterogeneity, reference to function, non-countable syntax). My analysis, built on functional aggregates, merit a place in an ontology of nouns, because it enables us to show that *furniture*-nouns are similar with core count and mass nouns, but are at once distinct from both due to properties that reflect the nature of the associated event.

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