

# Countability in English Nouns denoting physical entities: a Radical Construction Grammar analysis

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**NOTE TO THE READER:** This is an illustrative analysis of aspects of one phenomenon of English in Radical Construction Grammar. It is not intended to be exhaustive, and it does not make much reference to the extensive literature on countability. The final version will be more comprehensive, and I welcome any comments or references.

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## 1. Introduction: Radical Construction Grammar

In this paper, I offer a Radical Constructon Grammar analysis of some aspects of countability in English. Radical Construction Grammar (Croft 1999, 2000, 2001, MS) shares with other construction grammars the assumption that all grammatical knowledge can be represented uniformly as a network of constructions, where ‘construction’ is taken to describe form-meaning pairings of grammatical structures of any type: atomic (lexical items) or complex (syntactic constructions), substantive (specific words or phrases) or schematic (having roles that are fillable by more than one element), bound (morphological) or free (syntactic); and any combination of the above. For example, the Numeral construction [NUM NOUN(-SG/-PL)] includes as elements independent syntactic units (NUM) and bound morphemes (-SG/-PL), and the Possessive construction [PSRPHRASE-’s PSDPHRASE] includes as an element the substantive form -’s.

This uniform representation is known as the **syntax-lexicon continuum** in construction grammar. The syntax-lexicon continuum is illustrated in Table 1:

*Table 1. The syntax-lexicon continuum.*

<i>Construction type</i>	<i>Traditional name</i>	<i>Examples</i>
Complex and (mostly) schematic	<b>syntax</b>	[SBJ <i>be</i> -TNS VERB- <i>en</i> by OBL]
Complex and (mostly) substantive	<b>idiom</b>	[ <i>kick</i> -TNS <i>the bucket</i> ]
Complex but bound	<b>morphology</b>	[NOUN- <i>s</i> ], [VERB-TNS]
Atomic and schematic	<b>syntactic category</b>	[DEM], [ADJ]
Atomic and substantive	<b>word/lexicon</b>	[ <i>this</i> ], [ <i>green</i> ]

Radical Construction Grammar, unlike other construction grammars, posits the construction—a possibly complex grammatical unit—as the primitive unit of syntactic representation. The categories defined by the role(s) in a construction are construction-specific. That is, Radical Construction Grammar respects the differences in distribution defined by different constructions. For example, different constructions in English that are sensitive to countability of English Nouns will in fact select slightly different classes of Nouns types of entities. (Capitalized names are used for language-specific grammatical categories). For this

reason, one should not posit global (cross-constructural) grammatical categories, let alone universal (cross-linguistic) categories, such as Count Noun and Mass Noun.

The question then is, how does one analyze the nonidentical categories defined by different but related constructions? The solution adopted by Radical Construction Grammar is the **semantic map** approach increasingly used in typological research (see Croft 2001, Haspelmath to appear for more discussion). In the semantic map approach, distribution patterns defined by constructions are mapped onto a **conceptual space** consisting of the fillers of the roles. In this case, the different countability constructions in English are mapped onto a conceptual space consisting of entity types denoted by English Nouns. The boundaries of the semantic maps for each construction will overlap, but most of the time they will not coincide.

The conceptual space for the semantic maps of related constructions, such as the English countability constructions, is constructed according to the Semantic Map Connectivity Hypothesis: the Nouns that occur in any particular construction should form a connected region in the conceptual space. That is, one should be able to arrange the various Noun entity types in the conceptual space such that all of the countability constructions map onto connected regions in the conceptual space.

A map displaying all of the categories defined by the relevant constructions will demonstrate the complexity of the actual distribution patterns found in human languages. If these distribution patterns are taken seriously, then it becomes clear that there is no small finite set of syntactic categories underlying the grammatical constructions of a specific language (let alone Universal Grammar). But few patterns in the data will be immediately apparent.

If, however, one compares the semantic maps of constructions that are semantically related, then patterns do emerge in the data. One common pattern that occurs is that of a **prototype**. A prototype pattern involves a prototype, for example, a core set of entity types that behave uniformly with respect to countability; and **extensions** from the prototype, that is, a set of entity types which differ in one or more of the prototype's countability properties.

This sort of prototype pattern is what commonly emerges from typological analyses of cross-linguistic patterns. For example, Croft (1991) argues that a prototypical noun is found in reference to an object, and prototypical verb is found in predication of an action, supporting this position with patterns of cross-linguistic variation in referring and predication constructions and the words that occur in them. Hopper & Thompson (1980) argue that there is a prototypical transitive clause, which contains two highly individuated participants and a telic, punctual, affirmative realis process.

Radical Construction Grammar extends the typological analysis of patterns of variation across languages, such as prototype patterns, to the analysis of patterns of variation across constructions in a single language. Radical Construction Grammar argues that both the cross-linguistic and cross-constructural patterns can be accounted for by the same underlying theoretical construct, namely the topography of conceptual space and the constraints on the form-function mapping that it imposes.

## 2. A Radical Construction Grammar analysis of English countability

In order to develop a Radical Construction Grammar analysis of a particular language grammar, one must identify the constructions and the elements whose distribution across those constructions are to be analyzed. This is achieved by delimiting the grammatical domain in terms of the **functions** or meanings of the constructions and elements. In the analysis of countability in English, the relevant constructions are those that encode a **construal** (see below) of an **entity** with respect to individuation and internal differentiation. The role of each construction that we are interested in categorizes the entity in terms of its countability. I use the term 'entity' to generalize over both 'objects' or 'things' and 'stuff' or 'substances'. Classes of entities—a semantic category—will be called **entity types**; they are encoded in English by words which, following grammatical tradition, we will call Nouns.

The three main English countability constructions are given in (i)-(iii); my proposed semantic definitions for the three constructions are also given in (i)-(iii).

- (i) Counting construction: [*a* \_\_\_], [NUM \_\_\_(-s)]. This construction construes the entity in question as discrete (bounded) and internally heterogeneous. The words that occur in the Counting construction take singular or plural form.
- (ii) Bare Plural construction: [\_\_\_-s]. This construction construes the entity in question as a group or collection, that is, unbounded (nondiscrete) but internally heterogeneous.
- (iii) Bare Singular construction: [\_\_\_]. This construction construes the entity in question as unbounded (nondiscrete) and internally homogeneous.

A qualification must be made to the characterization of the three countability constructions. All three constructions may alternate with the Definite construction, consisting of the Definite Article *the* or a Possessive Adjective plus the noun. I will take examples of a noun in the Definite construction as instances of the appropriate countability construction in terms of the meaning or sense of that particular countability construction.

The senses of the countability constructions represent different construals of the entity word that is found in the construction. I use the term ‘construal’ as in cognitive linguistics (see, e.g., Langacker 1987). The semantic representation of any experience communicated in language involves a construal of the experience in question as possessing a particular structure. For example, the sentence *I bought two pineapples* construes the entity as a discrete individual object.

Construal is not entirely fixed for a particular word, however. For example, in the sentence *There isn't enough pineapple in this salad*, the same entity is construed as an unbounded, undifferentiated substance. In other words, an experience, encoded in this case by the word *pineapple*, is subject to alternative construals in a language. The alternative construals are **motivated** by our experience: for example, English speakers encounter pineapples as whole fruit and as the edible flesh of that fruit.

The flexibility of construal is nevertheless constrained by **conventions** of the language. It is a conventional construal of English that *pineapple* and other words denoting fruit may be used to describe both the whole fruit and the edible flesh of that fruit. One cannot assume that the construal is automatically available to any speaker of any language. The grammatical analysis of language thus characterizes the conventional construals available to speakers of the language for particular lexical items.

Each English countability construction allows for several possible construals or interpretations of the word filling the empty role in the constructions in (i)-(iii). The construals are listed in Table 2, and will be described in §§3-5:

*Table 2. Construals (senses) of the English Counting, Bare Plural and Bare Singular*

Counting:	Bare Plural:	Bare Singular:
<i>individual, inflected/uninflected</i>	<i>group</i>	<i>substance</i>
<i>variety, inflected/uninflected</i>	<i>variety</i>	<i>group</i>
<i>kind</i>	<i>kind</i>	<i>kind</i>
<i>(uninterpretable)</i>	<i>dual object</i>	<i>gradient/scalar property</i>
	<i>(uninterpretable)</i>	<i>(uninterpretable)</i>

Thus, combining form and meaning, there are a total of 14 construction senses, including uninterpretability in each of the three constructions.

Map 1 gives the conceptual space for a sampling of English Nouns referring to physical entities. No labels are given for the entity types, but other words of similar type in English may behave similarly. The conceptual space is only partial. Still other words of English may behave differently with respect to the 14 construction senses described here. The sample represented in Map 1 includes the classes discussed by Wierzbicka (1988, chapter 10), as well as other examples that have arisen in the course of my teaching semantics. The sampled words can be grouped into 33 entity types. The 14 constructional senses define 23 countability classes for the sample.

There are letter codes found under the class names for each entity type in Map 1. Each letter corresponds to a particular sense (construal) of each of the three constructions found with the situation type of the predicates. The individual letter codes will be explained in §§3-5, in the description of the three constructions. The first set of codes refers to the Counting construction, the second to the Bare Plural, and the third to the Bare Singular. As the reader can observe from the codes in Map 1, a particular noun may have more than one interpretation in a given construction. The evidence for the interpretation of nouns in the various construction senses is based solely on my own introspection. Other speakers' judgements may and will differ. In fact, my own judgements sometimes vary. However, the approach to grammatical analysis represented in this paper can accommodate some flexibility and variation in judgements, as will be argued in §6.

Each of the 14 construction senses—more precisely, 11, excluding the uninterpretable combinations—differs in form as well as meaning from the others. It is not accurate to describe the constructions with schemas such as [*a*/NUM NOUN(-s)], [NOUN-s] and [NOUN]. It is not the case that each construction sense has the same distribution pattern across the Nouns of English. There is a different distribution pattern for each of the 11 construction senses listed in Table 1. This fact can be observed by examining Maps 2-4, which give the distribution patterns of each sense of each of the three construction schemas. For this reason, in (i)-(iii) I have simply indicated the relevant role in each construction with a blank (\_\_\_). The exact distribution patterns are given in Maps 2-4. In the remainder of this paper, however, I will continue to describe (i)-(iii) as 'constructions', and the 11 subtypes as construction 'senses' or 'construals'.

The lines in Map 1 connect neighboring entity types in the conceptual space that share at least one distribution pattern, as described by the letter codes under the names. The lines differ in thickness depending on how many distribution patterns are shared by the neighboring types, and represent a somewhat crude measurement of nearness in the conceptual space. A single-thickness line linking two entity types means that they share at least one sense in one of the three constructions (Counting, Bare Plural, Bare Singular). A double-thickness line indicates that the types share at least one sense in two of the three constructions. A triple-thickness line indicates that the types share at least one sense in all three constructions. If all senses in all three constructions are shared, the entity types are grouped together in a box.

I will now describe each constructional sense and present examples of the sampled words that are found in each sense.

### 3. The Counting construction

The Counting construction has four senses; they are mapped in Map 2. The first sense construes the entity as a specific discrete (bounded) **individual** or set of individuals (this sense is labeled II on Map 2, 1 for the Counting construction and I for the individual construal). This is probably the most common construal for the words illustrated in 1:

- (1)
  - a. I bought *a car* yesterday.
  - b. There's *a sheet* on the floor.
  - c. Would you like *an apple*?

- d. There is *a redwood* in the backyard.
- e. There are *five butterflies* on that flower.

The individual construal is also available for the following Nouns:

- (2) a. The anatomy students each examined *a mouse brain*.
- b. *A large mountain* was visible on the horizon.
- c. He put *his hand* on her shoulder.
- d. There was *an earring* on the vanity.
- e. I found *a noodle* in the drawer.

The individual construal is available as a conventional unit for the following Nouns:

- (3) a. I used *a brick* to keep the door open.
- b. He picked up *a coal* from the hamper.
- c. They ordered *three beers*.
- d. She brought out *two cheeses*.

The individual construal is possible for “particulate” units for some Nouns (see §5):

- (4) There are *three hairs* in my soup.

The following Nouns employ the individual construal but without inflecting the Noun for Number:

- (5) a. I caught *six fish* yesterday.
- b. I saw *two trout* in the pool below the waterfall.
- c. She picked *several clover*.

These Nouns are assigned to a special subtype of the individual-construal Counting construction, labeled 1i on Map 2.

The second construal of the Counting construction is the **variety** interpretation (labeled 1V on Map 2). In this interpretation, the individual unit is a variety of the kind labeled by the noun. The variety interpretation is most easily obtained with Nouns denoting biological kinds, which are well known to occur in varieties:

- (6) a. There over *a hundred butterflies* found in Northern California.
- b. There are *nine junipers* native to California.
- c. *Many apples* are cultivated in Britain.
- d. *the fishes* of the North Atlantic
- e. *the soils* of North America
- f. *Two clovers* are native to the Southwest.
- g. Most of *the native grasses* of America were perennials.
- h. There are *three beans* in this salad.

The variety interpretation can also be found with Nouns denoting foodstuffs and artifacts:

- (7) a. Are you familiar with *the wines* of the Santa Maria Valley?
- b. We manufacture *six cars* and *three light trucks*.
- c. We carry *three sheets*: single, queen size, and king size.
- d. This cabinet has five different *woods* in it.

The variety interpretation is available for some of the same Nouns in 5b-c, again without Number inflection of the Noun:

- (8) a. *Six salmon* in the Pacific Northwest are already extinct.
- b. *?Four clover* occur in the Tehachapi Mountains.

This construction is coded as a special subsense of the variety-construal Counting construction, labeled 1v in Map 2. This subsense distinguishes Nouns such as *salmon* and *trout* from *fish* (see 6d).

Finally, the variety interpretation is the only interpretation available to certain Nouns in the Counting construction (see Wierzbicka 1988):

- (9) *Thirteen vegetables* are grown in our greenhouses in Anchorage.

The third construal of the Counting construction is the **kind** construal (labeled 1K in Map 2), referring to the kind as a whole, not just an individual variety of the kind. The kind interpretation is possible with either *a* or *the*. Like the variety interpretation, the kind interpretation is easily available for Nouns denoting biological kinds:

- (10) a. *A mouse* is a small furry mammal.  
 b. *The pineapple* grows only in the tropics.  
 c. *The sugar pine* has the largest cones of any pine species.

The kind interpretation is also possible for Nouns denoting artifacts, geographical features and body parts:

- (11) a. *The car* is responsible for thousands of deaths every year.  
 b. *A sheet* is normally made of cotton.  
 c. *The human brain* has increased in size over the evolution of the species.  
 d. *A mountain* can be the result of volcanic activity.  
 e. *The eye* is the most important sensory organ.  
 f. *A mitten* covers all of the fingers together, except *the thumb*.

Many of the sentences in the variety and kind interpretations sound stilted; this is at least in part due to the fact that we rarely talk about kinds or varieties, and much more frequently talk about specific instances of kinds or varieties. Also, the Bare Plural construction is probably more commonly used for reference to kinds for most of the nouns included in the 1K region in Map 2 (see §4).

Finally, I find the nouns grouped under 1\* in Map 2 difficult if not impossible to construe in any interpretation of the Counting construction.

#### 4. The Bare Plural construction

The Bare Plural construction has four construals, plus unacceptable Nouns in this construction; these are mapped out in Map 3. The first construal is reference to **kinds** (2K, 2 for the Bare Plural construction), also known as the generic bare plural (Carlson 1977). This is probably the most common form of reference to kinds in English, and many examples can be easily generated:

- (12) a. *Cars* are the scourge of the developed world.  
 b. *Sheets* are normally used on beds.  
 c. *Butterflies* are beautiful creatures.  
 d. *Apples* have been ruined by agribusiness.  
 e. *Pines* are characterized by the presence of pitch.  
 f. *Bricks* are the preferred construction material in England.  
 g. *Mountains* are dominant features of the landscape.  
 h. *Legs* tend to be longer than *arms*.  
 i. *Cheap earrings* can damage *your earlobes*.  
 j. Do they make *good scissors* in Britain?  
 k. *Women* are allowed to wear *trousers* to work here.  
 l. *Beans* are a good source of protein for *vegetarians*.  
 m. *Vegetables* are major source of *vitamins*.

- n. This detergent creates a lot of *suds*.
- o. *Bleachers* are a cheap way to provide a lot of seats.
- p. *Chives* add flavor to a cream sauce.
- q. *Woodlands* are beneficial to wildlife.
- r. It is always nice to have *leftovers* when you are too tired to cook.
- s. I like to hike in *the woods*.

The second construal of the Bare Plural construction is also very widely distributed. This is the, 'collective', 'aggregate' or **group** interpretation, referring to a group of individuals of indeterminate cardinality, that are bound together by common location or some other commonality (labeled 2G on Map 3). This construal is also called the existential bare plural (Carlson 1977). Examples of the group construal where common location is the most plausible element joining the members of the group are given in 13:

- (13)
- a. *Pineapples* lay on the ground.
  - b. *Chairs* were scattered around the room.
  - c. *Butterflies* clustered around the puddle.
  - d. *Digger pines* dotted the slope.
  - e. The wheelbarrow was filled with *stones*.
  - f. *Coals* spilled out of the fireplace.
  - g. *Straws* stuck out of her hair.
  - h. I handed her a bag of *peas*.
  - i. The customer sent *the brains* back to the kitchen.
  - j. *Socks* were all over the floor.
  - k. The drawer was full of *scissors/trousers*.
  - l. She ate *the grits*.
  - m. I threw out *the coffee dregs*.
  - n. *Woodlands* once covered this valley.
  - o. He wouldn't eat *his vegetables*, and we threw them away.

Some Nouns denoting geographical features use the Bare Plural, but this is dispreferred in British English, which instead uses the Singular Counting construction (14a-b) or the Bare Singular construction (14d):

- (14)
- a. They walked out on *the plains/the plain*.
  - b. They went into *the woods/the wood*.
  - c. There are a lot of *clouds*. [American English]
  - d. There is a lot of *cloud*. [British English]

For some Nouns, the group or aggregate meaning can be motivated by more than accidental co-location. *Bleachers* and *catacombs* are made up of like parts, but they are attached or connected, and thus always occur in the Bare Plural.

A third construal of the Bare Plural is a special case of the group interpretation, and that is the **dual object** construal (labeled 2D on Map 3). The ordinary interpretation of the following examples is that they refer to a pair of the relevant objects, either attached (15) or unattached but belonging together as a pair (16):

- (15)
- a. Hand me *the scissors*.
  - b. She put on *her trousers*.
- (16)
- a. She blinked *her eyes*.
  - b. I lost *my gloves*.

A fourth construal is found with some Nouns that refer to heterogeneous objects and substances (labeled 2V on Map 3; see Wierzbicka 1988). The heterogeneity means that they may refer to **varieties** as well as specific instances:

(17) *Tonight's leftovers* consist of chicken, string beans and wild rice.

The dual object and variety Nouns also occur marginally (in my speech, anyway) as plural count nouns:

(18) I have ?*three scissors*/three pairs of scissors.

(19) ?We have *three leftovers* tonight: chicken, string beans and wild rice.

I have not indicated this possibility on Map 2. This possibility may be represented by extending the boundary of the individual-construal Counting construction (1I) to the attached dual object classes, and extending the boundary of the variety-construal Counting construction (1V) to the heterogeneous objects/stuff class.

Finally, I find it difficult if not impossible to use any of the Nouns in the region labeled 2\* on Map 3 in the Bare Plural construction under any construal.

## 5. The Bare Singular construction

The Bare Singular construction has four construals, plus uninterpretable nouns in this construction. The first construal is the undifferentiated **substance** construal (labeled 3S on Map 4, 3 for the Bare Singular and S for the substance construal). This is the common construal for a substantial range of Nouns:

- (20) a. There was *red wine* on the carpet.  
 b. *The soil* is six feet deep here.  
 c. There was *mud* on the carpet.  
 d. I put *butter* on the bread.  
 e. There is *coal* in those hills.

The substance construal is also used to describe the material of internally homogeneous physical objects (21a), the wood of trees (21b-c) or the flesh or meat of animals (21d-e), fruits (21f) and nuts (21g):

- (21) a. There is more plaster than *brick* in these walls.  
 b. There is a lot of *quarter-sawn oak* in this Morris chair.  
 c. This bowl is made of *wood*.  
 d. I put *salmon* in the quiche.  
 e. He left *some chicken* on the plate.  
 f. I prefer more *pineapple* in my upside-down cake.  
 g. This marzipan contains *pistachio* as well as *hazelnut*.

The substance interpretation is also found for the rather gruesome occurrence of mashed-up versions of biological kinds:

(22) There is *spider* all over my windshield.

A second construal of the Bare Singular construction is a **group** construal (labeled 3G on Map 4). Examples are given in 23:

- (23) a. *Spawning salmon* filled the stream.  
 b. *Fish* circled around the sunken ship.  
 c. The floor of the hut was covered with *straw*.  
 d. *Clover* dotted the meadow.  
 e. *Salt* spilled all over the table.  
 f. *Furniture* filled the garage from floor to ceiling.



In other words, there are group construals in both the Bare Plural and the Bare Singular constructions. The grouped entities occurring in the Bare Singular construction tend to be smaller or more particulate than the grouped entities occurring in the Bare Plural construction. However, this appears to be relative to experiential domain: peas and beans are larger than grains of rice or salt, but smaller than individual salmon or trout.

The Bare Singular also has a **kind** construal (labeled 3K on Map 4). The kind construal is found for the following Nouns:

- (24)
- a. *Wine* is an alcoholic beverage.
  - b. *Sandy soil* is better for these plants.
  - c. *Butter* is fattening.
  - d. I like *pineapple*.
  - e. *Alaska cedar* is a durable wood.
  - f. *Coal* is a very dirty energy source.
  - g. *Rice* is the staple cereal in much of Asia.
  - h. *Clothing* is not required at this beach.
  - i. *Oak woodland* occurs in drier microclimates in the Coast Range.
  - j. I prefer *wood* to *plastic* in furniture.

The Nouns which are uninflected in the individual-construal Counting construction (those labeled 1v on Map 2) appear to be “pseudo-Bare Singular” in their kind construal. Sometimes these Nouns take a Plural Verb form, suggesting that they belong to an “uninflected Bare Plural” kind construal (not indicated in Map 2).

- (25)
- a. *Clover* is/are found at low elevations.
  - b. *Salmon* \*was/were plentiful before the second world war.
  - c. *Fish* \*breathes/breathe through their gills.

However, the Nouns in 25b-c do allow a kind construal in the Bare Singular construction, when referring to the meat:

- (26)
- a. I love *salmon*.
  - b. *Fish* is very filling.

A fourth construal of the Bare Singular is to a gradient or scalar **property** of the entity in question (3R in Map 3). Properties are normally construed as undifferentiated in English, hence the use of the Bare Singular for this construal. This construal is fairly common in spoken English; all of the examples in 27 are attested:

- (27)
- a. “When you’re 6 or 7 years old, that’s quite a lot of *dog* bearing down on you” (Margaret W., on a dog that put its front legs on one’s shoulders, 16 Feb 94)
  - b. “They give you more *sheet*. They give you a hell of a lot more sheet than the Americans do” (British queen size sheets; Carol T., 1 Oct 98)
  - c. “It’s interesting because they have more *house* ’cause they’re on the side” (Carol T., 23 Oct 98)
  - d. “There was a huge Buick there; just acres of *car*” (overheard by Mary Ellen Ryder in hall of Arts Bldg, U Manchester, 30 April 97)

Example 27a describes the weight of the dog; 27b describes the size of the sheet; 27c describes the surface area of the house; and 27d describes the size of the car.

Finally, I find it difficult if not impossible to use the Nouns in the region labeled 3\* in the Bare Singular construction under any construal.

## 6. Finding patterns in the semantic maps

The distribution patterns for the 14 constructions associated with countability in English are presented together in Map 5. Map 5 is complex and colorful. It tells us that there is indeed a great deal of intricacy in the grammatical behavior of English Nouns with respect to the phenomenon of countability. And Map 5 represents only the introspective judgements of one speaker (myself), for only a subset of only Nouns referring to physical entities. A broader and more systematic study would reveal even more complexity to the grammar of countability in English. Any reduction to categories such as “Count Noun” or “Mass Noun” would do gross violence to the empirical facts of English.

Nevertheless, there are patterns to the complexity found in Map 5. Certain constructions, that is, constructional senses, go together in the sense that they impose similar or related construals on the entities that occur in those constructions. And the maps for associated constructions display a prototype structure on the conceptual space.

Map 6 presents the semantic maps of constructions associated with the semantic property of individuation, described in traditional grammar as the **count noun** type. The primary count noun construals are mapped in black and green. The prototypical count noun allows for individual, variety and kind construals in the Counting construction, and a scalar property construal in the Bare Singular construction. The prototypical count nouns are located in the upper left of the conceptual space diagram.

The construals associated with individuation go together naturally. The individual-construal counting construction is definitional. Individual objects are easily construable as being organized into a taxonomic hierarchy of specific-variety-generic, each of whose levels are discrete (individual) categories. Finally, the prototypical count noun entity types are most resistant to a substance or material construal, and instead favor a scalar property interpretation as the only way to construe them as undifferentiated. Most artifacts and biological kinds that are not eaten are encountered almost always only as discrete individuals, hence their prototypical count noun status.

The uninflected but countable Nouns, in the region defined by 1i and 1v (in yellow), represent a sort of intermediate category between individuated and nonindividuated entity types. The intermediate position of this category in the diagram is a result of arranging the entity types in such a way as to conform to the Semantic Map Connectivity Hypothesis of conceptual space construction (see §1), namely, that semantic maps of distributional categories are connected regions in conceptual space. The intermediate position of this category is the result of comparing the distribution patterns of all 14 English countability constructions considered in this study. But this distributional imperative yields a semantically relatively coherent structure. The entity types represent a relatively peripheral category of “count nouns”. In fact, I will argue below that their invariant Singular form is not entirely an accident of the history of English.

Map 7 presents the semantic maps of constructions associated with the semantic property of collectives or groups, described in traditional grammar as the **pluralia tanta** type. The primary pluralia tanta construals are mapped in cyan and blue. Prototypical pluralia tanta are also characterized by their nonoccurrence in the Counting and Bare Singular constructions, and those “constructions” (1\*, 3\*) are also mapped in Map 7.

The prototypical pluralia tanta can only be construed as plural—or for some entities, dual—at both the specific (group) or generic (kind) levels. The prototypical pluralia tanta entity types are found at the bottom center of the conceptual space diagram. This combination of construals represents a semantically coherent prototype. The prototypical pluralia tanta entity is easily construed as unbounded but internally structured with like parts (hence Plural) at both the specific and generic levels, and resists construal as either countable individuals or as an undifferentiated mass. The prototypical pluralia tanta entity types are those that we almost always encounter in pairs or in groups: paired body parts and the clothing that goes on them,

objects such as bleachers that are normally attached; foodstuffs and internal body parts that are not discrete and are encountered collectively the most frequently.

It so happens that in English, the group or aggregate construal has been extended to the expression of kinds for prototypical count nouns (2K). It appears that the Bare Plural construction is taking over from the Counting construction in the expression of kinds for prototypical count nouns (see Stassen 1997). The group construal is also used for the expression of a group of individuals of indeterminate cardinality for prototypical count nouns (2G). This latter use is less surprising, since a group of individuals is a group and thus fits the Bare Plural construal.

Map 7 also includes an intermediate category, given in yellow, of the Nouns occurring in the group-construal Bare Singular construction (3G). As noted in §4, these entity types tend to be intermediate in size, and thus could lend themselves to a pluralia tanta interpretation; but they are sufficiently particulate and tend to occur together and so are also construable as mass nouns (see below). Their intermediate status is manifested grammatically by their occurrence in the Bare Singular construction on the one hand, and their possessing unitizing nouns such as *grain* (*of sand, rice, salt, etc.*), *blade* (*of straw, grass, etc.*).

Map 8 presents the constructions associated with the semantic property of undifferentiated mass, described in traditional grammar as the **mass noun** type. The mass noun construals are mapped in red. Prototypical mass nouns have substance and kind construals in the Bare Singular construction, and are uninterpretable in the Bare Plural and Counting constructions. The prototypical mass nouns are found in the upper right of the conceptual space diagram.

Again, this combination of construals represents a semantically coherent prototype. The prototypical mass noun entities are an undifferentiated, internally homogeneous substance at both the specific and generic levels, and resists construal as either a discrete individual or a group or collection with internal structure. The most prototypical mass nouns are liquid or viscous entities with an internal structure below the threshold of ordinary human perception.

The uninflected but countable Nouns (1i/1v), and the group-construal Bare Singular Nouns (3G), represent an intermediate type. These two categories overlap. This overlap and the position of the uninflected Counting construction Nouns in the conceptual space suggests that the fact that they are invariantly Singular in form is not a grammatical accident. Instead, their invariant Singular form reflects their construability as an undifferentiated or at least particulate mass, like the associated entity types which are construed as groups but in the Bare Singular—i.e. invariant Singular—construction.

Radical Construction Grammar brings typological analysis to the description of the grammar of a single language. It does so by respecting the intricacy of grammatical variation found in a single language, and by seeking patterns on language-internal grammatical variation of the same type as are found in cross-linguistic grammatical variation. In fact it is expected that the variation within languages and across languages is of fundamentally the same character. Specifically, it is hypothesized that the conceptual space revealed in the analysis of a single language should be largely (though not necessarily completely) valid in the analysis of the constructions with the same functions in other languages. Testing this hypothesis in the domain of countability remains for future research.

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