

[Article]

A Preliminary Study on Count-to-Mass Shift of English Nouns and Bounding

KODERA, Masahiro

1. Introduction

Cognitive linguists take the view that the count/mass distinction of English nouns is based on the object/substance distinction and any noun can be used as a count or a mass noun depending on the construal of the referent as an object or a substance. Taylor (2002: 367) says: “The conceptual basis of the count-mass distinction is fairly transparent; it has to do with the distinction between an individuated ‘object’ and an unindividuated ‘substance’.” They argue for a very strong influence of conceptualization and claim that the count/mass distinction depends on the speaker’s construal. Taylor (2002: 368) says: “[T]he count-mass distinction is a matter of how speakers construe a thing.” Langacker (1991b: 72) says: “Given proper circumstances, almost any count noun can be construed as designating a homogeneous, unbounded mass and thereby come to function as a mass noun grammatically.”

A typical count noun that refers to a discrete entity in physical space can be used as a mass noun when the referent loses its structural integrity as in ‘*After I ran over the cat with our car, there was cat all over the driveway.*’ (Langacker 1991b: 73). Also, a count noun allows a mass construal when the referent is conceptualized in a different cognitive domain as in ‘*There’s a smell of cat in this room.*’ (Taylor 2002: 378), where the domain shifts from that of animal in physical space to that of smell in quality space. In either case, ‘cat’ is construed as a substance, not an object.

Their arguments are simple: the count/mass distinction is based on the object/substance distinction and any physical entity can be conceptualized as a substance; therefore any count noun can be coded as a mass noun. Taylor (2002: 372) goes so far as to say: “[A] speaker of English is free to play around with the count or mass status of a noun in order to encode distinct construals of an entity.” Croft (2001: 121) says: “The Nouns have no inherent countability.” Hearing what cognitive linguists have to say, we wonder if conceptualization is so powerful as to turn any count noun into a mass noun. If that is the case, there should be no constraints to prevent count nouns from turning into mass nouns or mass nouns into count nouns in proper contexts.

The purpose of this article is to investigate if a speaker of English is so free as to be able to break out of constraints imposed by linguistic conventions of the count/mass distinction. First, we will examine the acceptability of the example sentences provided by cognitive linguists to support their arguments that the count/mass distinction is based on the object/substance distinction and that conceptualization gives us a free hand in using a noun either as count or mass. A questionnaire was prepared to see if native speakers of English (4 Americans, 4 British) would accept the examples provided by cognitive linguists and other

count-to-mass shift examples cited from various websites. The respondents found some of the examples acceptable unanimously while their responses were divided on others.

The results of the questionnaire suggest that there are some constraints of linguistic convention that prevent the count-to-mass shift depending on the type of nouns. Nouns may not have inherent countability, but some nouns show a strong disposition to either the count or mass construal. The physical condition of the substance state does not necessarily force a mass construal. Some nouns (e.g. 'cat') accept the count-to-mass shift easily, while others (e.g. 'car') strongly resist the shift. It is often very difficult without a radical conceptual domain shift to break conventionalized construals that impose syntactic constraints on nouns.

2. Count-to-mass shift of concrete nouns and bounding in physical space

Common nouns can be divided into two types, count and mass, which can be defined morpho-syntactically and semantically. Some linguists divide nouns into several levels based on their analysis of morpho-syntactic behavior of nouns: Allan (1980) claims eight levels of countability; Downing & Locke (2002: 422-4) and Huddleston (1984: 245) six classes. Semantically, count nouns refer to individual countable entities such as books and dogs, and mass nouns to an undifferentiated mass or notion like water and advice (Biber, et al. 1999, Crystal 1995, Celce-Murcia & Larsen-Freeman 1999, Hewson 1972, Huddleston & Pullum 2002, Jespersen 1924, Langacker 1987, 1991a, b, Lee 2001, Matthews 1997, Quirk, et al. 1985, Swan 2005, Taylor 2002, Trask 1993, Wierzbicka, 1885, 1988, 1996). The conceptual basis of the count-mass distinction of concrete nouns lies in bounding in physical space. Different linguists use different terms to define it: Langacker (1991a: 26-27, 1991b: 69-70) uses 'homogeneity', 'expansibility/contractibility', 'replicability', 'qualitative uniformity', 'qualitative homogeneity', and 'bounding'; Taylor (2002: 366) uses 'internal homogeneity', 'divisibility', 'replicability', and 'inherent boundedness'; Wierzbicka (1985: 507) uses 'arbitrary divisibility'. In sum, three basic criteria that distinguish objects from substances are: boundedness, internal composition (homogeneity/heterogeneity), and countability (replicability) (Radden G. and Dirven R. 2007: 64-66).

Among various terms, 'boundedness' is the essential characteristic of objects. A typical count noun like 'car' and 'cat' can gain a mass status and a typical mass noun like 'coffee' can be coded as a count noun depending on how the referent is construed in a given context. The mass-to-count shift occurs when a referent is construed as bounded in physical or type space (e.g. 'two coffees' may refer to two cups of coffee or two kinds/brands of coffee). The count-to-mass shift occurs when a referent is construed as unbounded in various conceptual domains in either physical or quality space (Pelletier 1979, Allan 1980, Wierzbicka 1985, Reid 1991, Langacker 1991b, Taylor 2002), as shown by the following examples (Bold emphasis is mine).

- a) After I ran over the cat with our car, there was **cat** all over the driveway. (Langacker 1991b: 73)
- b) Emmy finds **squashed spider** more nauseous than the thing alive. (Allan 1980: 547)
- c) The scrapyard is full of **smashed car** awaiting recycling. (Allan 1980: 547)
- d) I don't like **shelf** — I'd rather eat **table**. (Langacker 1991: 73)
- e) You and Angus cannot be in the tub together. That's too **much boy**. (Reid 1991: 88)

Mar. 2010 A Preliminary Study on Count-to-Mass Shift of English Nouns and Bounding

- f) There's a smell of **cat** in this room. (Taylor 2002: 378)
 g) It smells like **new baby** here. (Reid 1991: 88)

The primary domain of the examples (a-c) is physical space. The referent in each example (cat, spider, car) has lost its structural integrity, being converted into a homogeneous substance, which makes possible the mass construal of these prototypically count nouns. The count-to-mass shift in these examples can be explained with the idea of the "universal grinder" (Pelletier 1979: 5-7), an imaginary machine, which chops and grinds anything up into a homogeneous mass. All the referents are unbounded in physical space and construed as substances, and the nouns are coded as mass.

'Shelf' and 'table' in (d) are also in physical space, but they are conceptualized in the food domain, not in the domain of furniture. The referents are construed as food from a termite's perspective. The physical integrity of the table and the shelf remains intact, but they are construed as substances. The termite can take only a restricted view of the shelf and the table, and perceive them as unbounded substances, which forces the mass construal. In the same way, the primary domain of (e) is physical space, where the referent (i.e. two boys) is construed as a homogeneous unbounded substance occupying a large space in the bathtub even though the physical integrity of the two boys remains intact.

The referents of 'cat' and 'new baby' in (f) and (g) are in quality space, conceptualized in the domain of smell, where the particular property (i.e. smell) of the referent is foregrounded and the structural integrity or even the existence of the referent is irrelevant. The smell does not necessarily require the physical existence of its source; the smell could be artificially produced or it might come from a different source (e.g. a chemical substance). 'Cat' and 'new baby' are construed as unbounded substances in the domain of smell.

These examples indicate that there are at least three conditions under which the count-to-mass shift occurs, as listed below (i-iii):

Physical Space

- (i) A physically bounded (i.e. individuated, discrete) referent loses its structural integrity and becomes unbounded in physical space, as in (a-c).
- (ii) A physically bounded referent is construed as unbounded in a different domain, seen from a different perspective as in (d-e)

Quality Space

- (iii) A particular property of the physically bounded referent is foregrounded, making the physical existence of the source referent irrelevant as in (f-g)

3. Structural integrity and count/mass distinction

I asked eight adult native speakers of English (four Americans and four British: ages from 20s to 40s) if they would say the example sentences listed above (a-g). The sentences were presented without any change. All eight informants found (a), (d), (f) and (g) acceptable, while their responses were divided on (b), (c), and (e). In addition to these sentences cited from the works of cognitive linguists, I also presented different versions of the same sentences with the noun phrases slightly changed (e.g. 'cat'

replaced by ‘a cat’ or ‘cats’). Also, some sentences that show count-to-mass shifts of nouns are added from various web sites.

The cat in (1), the spider in (2) and the car in (3) have lost their structural identity and are physically unbounded, and they all should be coded as a mass noun. For the sentence (a) in Section 1, cited here again as (1a), all eight respondents answered YES (i.e. they would say the sentence) and no one answered NO (i.e. I would not say so). They all preferred the mass construal of ‘cat’ in this context whether the referent is one cat (1a, b) or more than one (1c, d). All eight informants found the singular form with ‘a’ unacceptable (1b). When the referent is more than one cat (1c), they showed a strong preference for the uncountable ‘cat’ while their responses were divided over the plural form ‘cats’ (1d).

- (1) a. After I ran over the cat with our car, there was **cat** all over the driveway. (YES: 8 / NO: 0)
 b. After I ran over the cat with our car, there was **a cat** all over the driveway. (0 / 8)
 c. After I ran over three cats with my truck, there was **cat** all over the highway. (7 / 1)
 d. After I ran over three cats with my truck, there were **cats** all over the highway. (3 / 5)

The informants responded quite differently on ‘squashed spider’ (2). Their responses were divided on the mass construal when the referent is one spider (2a), but they all accepted ‘a squashed spider’ (2b). On the other hand, when the referent is more than one, all eight respondents showed a clear and very strong preference for the count construal. They all found the plural form acceptable (2d), while no one accepted the mass construal (2c).

- (2) a. Emmy finds **squashed spider** more nauseous than the thing alive. (5 / 3)
 b. Emmy finds **a squashed spider** more nauseous than the thing alive. (8 / 0)
 c. Emmy finds **squashed spider** more nauseous than those alive. (0 / 8)
 d. Emmy finds **squashed spiders** more nauseous than those alive. (8 / 0)

In the same way, the informants showed a strong preference for the count construal of ‘car’ in its disintegrated form (3). Six respondents found the mass construal unacceptable (One respondent did not choose either YES nor NO) (3a). All eight respondents accepted the plural form (3b).

- (3) a. The scrapyard is full of **smashed car** awaiting recycling. (1 / 6 / 1?)
 b. The scrapyard is full of **smashed cars** awaiting recycling. (8 / 0)

The respondents preferred the count construal of the spider and the car that have lost their structural integrity. The criterion of boundedness seems to work well for ‘cat’, but not for ‘car’ and ‘spider’. This result suggests that bounding in physical space may not be the determining factor for the count/mass distinction. We need to explore what distinguishes ‘cat’ from ‘spider’ and ‘car’ in their acceptability of the count-to-mass shift.

Some speculations are possible. The difference may come from the condition in which the cat(s) or the spider(s) is placed. In the context of (1), the body of the cat(s) is torn apart and scattered in a large area, like one leg here and another leg there, which makes it difficult to recognize an individual cat. On the

Mar. 2010 A Preliminary Study on Count-to-Mass Shift of English Nouns and Bounding

other hand, in the context of (2), the body (or bodies) of the spider(s) is probably placed at one small area, not scattered all over the place. It is not very difficult to recognize an individual spider even though it has lost its structural integrity. Recognizability may be one of the possible criteria of the count/mass distinction.

4. Recognizability and count/mass distinction

4.1. Countability of 'apple'

Quine (1960: 91) claims that "full-fledged general terms like 'apple' are also commonly made to double as mass terms." He gives the following example of the uncountable 'apple': "*Put some apple in the salad.*" With 'some apple', Quine is probably referring to some slices (or chunks) of diced (or chopped) apples that are construed as a substance, not as discrete objects. As we have seen in the previous section, disintegration alone does not lead to the mass construal. For instance, my informants showed a strong preference for the count construal of chopped apples (4b), while they were divided over the mass construal (4a). On the other hand, the mass construal of 'grated apple' and 'grated carrot' was strongly preferred (5a, 6a), while the responses were divided on the count construal (5b, 6b). Chopped apples (4), grated apples (5), grated carrots (6), and mashed and cooked apples (7) have all lost their structural integrity and should be coded as mass nouns if boundedness is the only criterion of the count/mass distinction. There must be other factors that influence the count/mass construal.

- (4) a. Put chopped apples, sultanas, sugar, marmalade, margarine and syrup into a saucepan with 4 oz cold water. Simmer gently until **apple** has softened. (4 / 4)
 b. (Same as above) ... Simmer gently until **apples** have softened. (8 / 0)
- (5) a. (5 Granny Smith apples, grated) Mix **grated apple** with lemon juice and add to pan, cover and cook, stirring occasionally for 15 minutes. (8 / 0)
 b. (Same as above) ... Mix **grated apples** with lemon juice... (5 / 3)
- (6) a. My mother would be on a diet and Sara would eat **grated carrot**. (8 / 0)
 b. (Same as above) ... Sara would eat a **grated carrot**. (4+1? / 3)
- (7) a. Mash apples, add sugar to taste. Add a little cinnamon if desired. Roll biscuits as directed above and place a bit of **cooked apple** on each piece of dough. (8 / 0)
 b. (Same as above) ... Place a bit of **cooked apples** on each piece of dough. (0 / 8)

The count construal of 'chopped apple' in (4) was preferred probably because the respondents retained the image of discrete apples (i.e. they recognized apples) in the state of being chopped and waiting to be softened in the saucepan. On the other hand, the mass construal of 'grated apple' was preferred in (5). This difference in their count/mass construals of 'chopped apple' and 'grated apple' may come from the fact that the apples in the state of being chopped (4) are relatively easier to be recognized as discrete countable entities than those in the state of being grated. The physical condition alone, however, is not enough as a strong motivation for the mass construal since 'grated carrot' can be used with the indefinite article as in (6b) when the amount used for the grated carrot is just one. Another more plausible motivation for the mass construal of 'grated apple' is that the context, in which 'grated apple' is placed

along with 'lemon juice' and takes the object position of the verb 'stir', probably gives the substance image.

For 'cooked apple' in (7), all the informants found the mass construal acceptable and the count construal unacceptable. In this context, 'cooked apple' refers to a small portion of an apple to be placed on a piece of dough, and it is most likely that the strong preference for the mass construal came from the restricted view. In addition to boundedness in physical space as a criterion of count/mass distinction, we need to look at the amount or the number of the referent (i.e. less than one, just one, or more than one) as well as the context that motivates the mass/count construal of the referent.

Recognizability of the source referent seems to be a strong motivation for the count/mass construal. Boundedness, or physical integrity is an important, but not a determining factor in construing a referent as a countable or uncountable entity. For those nouns that allow the count-to-mass shift, recognizability, whether it comes from the physical condition of the referent (i.e. boundedness) or from the context, has great influence on count/mass distinction. We still need to see if all nouns allow the count-to-mass shift and if the criterion of recognizability can apply to all types of nouns. In the following sections, we will examine the cases of nouns that refer to animate beings ('cat', 'spider') and inanimate objects ('car', 'bottle').

4.2. Countability of 'cat'

Both the criterion of boundedness and that of recognizability apply to the count/mass distinction of 'cat' very well. The respondents showed a strong preference for the mass construal of 'cat' in the following examples (8, 9, 10), where the body of a cat (or bodies of cats) is torn apart into pieces and scattered all over the place. The preference for the mass construal probably comes from the difficulty of recognizing individual cats in these contexts.

- (8) a. He went to his car, and when he turned the key he heard this incredible scratching/screaming sound. He pops the hood and sees that there is this thick liquid everywhere, red liquid. As he gets closer he finds **little bits and pieces of cat**. (8 / 0)
- b. (Same as above) ... As he gets closer he finds **little bits and pieces of a cat**. (4 / 3 / 1?)
- (9) a. I had to clean **bits and pieces of cat** off the front of my car a couple of months ago, damn thing ran out in front of me. (8 / 0)
- b. I had to clean **bits and pieces of a cat** off the front of my car a couple of months ago, damn thing ran out in front of me. (4 / 4)
- c. I had to clean **bits and pieces of cat** off the front of my car a couple of months ago, two damn cats ran out in front of me. (7 / 1)
- d. I had to clean **bits and pieces of cats** off the front of my car a couple of months ago, two damn cats ran out in front of me. (2 / 5 / ?1)
- (10) a. What I picked up personally was roughly around twenty cats. There were **pieces of cat**. It's hard to tell when you have a leg here and a leg there. The trapped cats had starved to death one by one, leaving the others to feed on their remains. (8 / 0)
- b. (Same as above) ... There were **pieces of cats**... (4 / 4)

4.3. Countability of 'spider'

Recognizability, but not boundedness, works well for 'spider'. In all the examples (11-14), the referent (a spider or spiders) is in the state of being squashed with its structural integrity lost and should be construed as a substance if boundedness is the only criterion of the count/mass distinction. The mass construal is preferred in (11), probably because only some portion of it is in focus. On the other hand, the count construal is preferred in (12), presumably because the spider is in one place and can be recognized as one entity even though its structural integrity is lost. In the same way, the plural form is preferred in (13) since the spiders, which form 'large black patches', can be individuated. In (14), the preference for the count construal is as strong as (13b), while responses were divided over the mass construal (14b). Some respondents found both the mass and the count construal acceptable, presumably because it is not clear in this context if the spiders can be individuated or not.

- (11) a. I threw a book at the spider. Luckily it was my sister's copy, not mine. I don't think I'd have liked having bits of **squashed spider** on the cover of my book. (8 / 0)
 b. (Same as above) ... having bits of **a squashed spider** on the cover of my book. (5 / 3)
- (12) a. I once put my foot in my shoe when I accidentally squashed a large spider to death. When I realised that it was **squashed spider** I fainted. (4 / 4)
 b. (Same as above) ... When I realised that it was **a squashed spider** I fainted. (8 / 0)
- (13) a. The whitewashed walls were smoke-tanned and dotted with millions of fly-specks; the dried corpses of **squashed spider** formed large black patches. (0 / 8)
 b. (Same as above) ... the dried corpses of **squashed spiders**.... (8 / 0)
- (14) a. They used all real spiders in all the shots. Think of **how much squashed spider** there must have been after making this movie. (5+1? / 2)
 b. (Same as above) ... Think of **how many squashed spiders** there must have been. (8 / 0)

4.4. Countability of 'car' and 'bottle'

Neither boundedness nor recognizability works well for 'car'. A strong preference was found for the count construal of 'car' in all the examples (15-19), whether the referent is smashed (15, 16) or dismantled (17, 18, 19). This may be because it is not very difficult to recognize an individual car even in the state of being smashed or a steel-pancake (15, 16) as far as cars can be individuated, in a similar way as squashed spiders are more likely to be construed as countable as in (12, 13, 14). When a car is dismantled, however, it is not a car any more but a collection of car parts as Taylor (2002: 367) says. However, the count construal was strongly preferred for 'dismantled car' in (17) even though its referent is converted into car parts and scattered all over the garage in a similar way as a cat is all over the driveway after the accident (1). A strong preference for the count construal is also found even when the substance image is imposed by such mass nouns as 'junk' and 'machinery' (18).

- (15) a. The scrapyard is full of **smashed car** awaiting recycling. (1 / 6 / 1?)
 b. The scrapyard is full of **smashed cars** awaiting recycling. (8 / 0)
- (16) a. You'll see one of those trucks—the ones that are carrying a truckload of **smashed car**. We're talking, you know like, steel pancakes here. (3 / 5)

- b. (Same as above) ...carrying a truckload of **smashed cars**. ... (8 / 0)
- (17) a. **Dismantled car** takes up far more space than you think and in a normal single car garage there just isn't room to take everything to pieces and work at the same time. (0 / 7 / 1?)
- b. **A dismantled car** takes up far more space... (same as above) (8 / 0)
- (18) a. No junk, **dismantled car** or machinery shall be stacked higher than the fence. (3 / 5)
- b. No junk, **dismantled cars** or machinery shall be stacked higher than the fence. (8 / 0)
- (19) a. Right now I have **2 1/2 dismantled cars** sitting at my house. (8 / 0)

'Car' seems to have a stronger predisposition to count construal than 'cat' or 'spider'. It may be possible to explain this difference between 'car' and 'cat' from their internal composition: a car consisting of heterogeneous parts while a cat of homogeneous substances. However, there does not seem to be much difference in the level of recognizability of an aggregation of pieces of a cat body and that of car parts. 'Car' and 'cat' seem to have a different inherent predisposition to count/mass construal, and this difference can be explained neither by recognizability nor by boundedness.

In the same way as 'car', 'bottle' shows strong resistance to the mass construal even when the referent is smashed (20, 21). It retains its count status with the indefinite article (20b) or in the plural form (21b). A bottle, when it is smashed, is not a bottle but just broken pieces of glass. Unlike a smashed car, a smashed bottle is hard to individuate. It is quite difficult to recognize individual bottles especially when a number of bottles fell from the shelves and broke into small pieces as in (21). Both 'car' and 'bottle' seem to have an inherent predisposition to count construal.

- (20) a. Police were forensically examining **smashed bottle** that was found in the couple's driveway. (1 / 7)
- b. Police were forensically examining **a smashed bottle**... (same as above) (8 / 0)
- (21) a. The gathering was suddenly brought to an end as a cluster of mortar bombs exploded on the village green shattering the windows of the café and dislodging bottles from the shelves. Everybody scattered, including the scared young lady with the serious skin condition; She just vanished out of the back of the café leaving us with **smashed bottle** and glasses. (2 / 6)
- b. (Same as above) ...leaving us with **smashed bottles** and glasses. (8 / 0)

5. Count-to-mass shift and domain shift

In this section, I will examine how cognitive domain shift influences the acceptability of the count-to-mass shift of the physically bounded referent. A physically bounded referent can be construed as unbounded when seen from a different perspective. "Shelf" and "table" are prototypically count nouns, but they allow a mass construal with a shift of domain, for instance, from the furniture domain to the food domain. All eight respondents accepted both the count and mass construal of 'shelf' and 'table' in (22), where the shelf and the table are seen as food from a termite's point of view. The mass construal of 'shelf' and 'table' is accepted since the referents are construed as a substance in the domain of food, and the focus is not on the whole entity but on the restricted view of the referent.

Mar. 2010 A Preliminary Study on Count-to-Mass Shift of English Nouns and Bounding

- (22) a. I don't like **shelf**—I'd rather eat **table**. (8 / 0)
 b. I don't like **shelves**—I'd rather eat **tables**. (8 / 0)

The domain shift can cause the count-to-mass shift. The shift, however, does not occur with equal ease to all count nouns. Some count nouns, such as 'boy', show strong resistance to the mass construal. Reid (1991: 88) argues that the noun 'boy', prototypically a count noun, can be used as a mass noun (e) in Section 2, cited here again as 23a). Against his claim, it was found that the respondents were equally divided on the acceptability of 'much boy' (23a), while they showed a strong preference for the plural form 'many boys' (23b). Half the respondents seem to have found some difficulty construing the boys as a substance, probably because of the prominence of the heterogeneity of the internal composition of the aggregate, which comprises two different individuals.

- (23) a. You and Angus cannot be in the tub together. That's **too much boy**. (4 / 4)
 b. You and Angus cannot be in the tub together. That's **too many boys**. (7 / 1)

It seems to require a radically different perspective, or a domain shift, to force a count-to-mass shift in physical space. For instance, 'car', which is prototypically a count noun, showed strong resistance to the mass construal even when the referent has lost its structural integrity as in (15-19). It, however, accepts a mass construal when the referent is conceptualized in quality space as the aggregate of desirable characteristics of a car (24, 25).

- (24) Pound for pound, a Chevy Caprice is a **lot more car** for the dollar than a top line Porsche.
 (<http://www.garyascott.com/2001/08/27/471.html>)
 (25) With a Lada you get a **lot of car** for your money. (Cruse 2004: 280)

5.1. Smell of cat: Domain shift from animal to smell

A noun may be coded as count or mass depending on the domain or the space in which a referent is conceptualized; e.g., whether the focus is on the qualitative properties of the referent or on its physical identity. The count-to-mass shift occurs when a particular property of the referent is foregrounded in quality space, making the physical existence of the source referent irrelevant. Focal adjustments of selection affect the count/mass construal of the referent and it applies to the case of smell as in (26-30), where the focus is not on the physical existence of the entity (i.e. a cat, a baby), but on their smell.

- (26) a. There's a smell of **cat** in this room. (8 / 0)
 b. There's a smell of **a cat** in this room. (2 / 6)
 c. There's a smell of **cats** in this room. (8 / 0)
 (27) a. It smells like **new baby** here. (8 / 0)
 b. It smells like **a new baby** here. (5 / 3)
 c. It smells like **new babies** here. (8 / 0)
 (28) a. **The smell of cat** causes fear in mice. (8 / 0)
 b. **The smell of a cat** causes fear in mice. (6 / 2)

- c. **The smell of cats** causes fear in mice. (8 / 0)
- (29) a. I can **smell cat, dog, cow, chicken, horse**, etc. Each animal does have a specific odor. (7 / 1)
 b. I can **smell a cat, a dog, a cow, a chicken, a horse**, etc. ... (same as above) (2 / 6)
 c. I can **smell cats, dogs, cows, chickens, horses**, etc. ... (same as above) (7 / 1)
- (30) a. His cats used to use the mattresses quite a lot, so the mattresses **smelled of cat**. (7 / 1)
 b. (Same as above) ...so the mattresses **smelled of cats**. (8 / 0)

All the respondents accepted both the zero article form and the plural form in (26) and (27), while their responses were divided on the indefinite article form (26b, 27b). The plural form seems to have more or less the same generic sense as the zero article form. This is supported by the examples of generic reference in (28, 29), which showed a strong preference for the zero article and plural form while the responses were divided on the indefinite article form.

In making a generic reference, there seems to be little difference between the zero article form and the plural form as shown in (28a, c) and (29a, c). With more than one particular referent (30), the respondents found both forms acceptable. The zero article and the plural form seem to have the equal status in turning the referent into an abstract entity like the source of a smell. The indefinite article form, on the other hand, meets with some resistance (26b, 27b, 28b, 29b). This is probably because the indefinite article imposes an image of a particular referent (i.e. a particular cat). The context of (29b) is more general than that of (28b), which causes (29b) to face a stronger resistance. Reference to a particular cat is more acceptable in the context of (28b) than in (29b). The indefinite article seems to have a visualization effect, which makes the referent concrete and particular.

In a different context that implies the existence of a particular cat, a strong preference for 'a cat' was found as in (31). Still another context where a cat is specified finds a predominant preference for 'a cat' over the zero article form (32). The respondent who checked YES for (32a) with a question mark left a comment: "Yes, if it suggests that 'shampooed cat' is an identifiable scent." In other words, the zero article form (i.e. mass construal) is acceptable when it refers to the type of smell rather than the smell of a particular cat. The mass construal is preferred when the smell is foregrounded and the existence of the cat is irrelevant. The mass construal does not require the existence of a cat; a chemically produced cat-smell should be enough with no particular cat present (or in mind). The indefinite article is preferred when the cat is foregrounded, i.e. when the scent of a particular cat is meant.

- (31) a. "I **smell cat**," said Boris. "I hope it's a friendly cat." (2 / 6)
 b. "I **smell a cat**," said Boris. "I hope it's a friendly cat." (8 / 0)
- (32) a. I love **the smell of cat** that has just been shampooed. (1? / 7)
 b. I love **the smell of a cat** that has just been shampooed. (8 / 0)

The count-to-mass shift occurs when the domain shift makes the existence of the referent irrelevant, not to mention its structural integrity. The count construal is preferred when the existence of a particular countable referent (e.g. a cat) is profiled. The mass construal is preferred when a particular property of the referent (e.g. smell) is profiled.

6. Concluding remarks

Cognitive linguists argue that the count/mass construal of concrete nouns is motivated by how the referent is conceptualized and that a speaker of English is free from linguistic conventions in their construal of a referent as count or mass. Taylor (2002: 371-372) says:

It is not surprising, therefore, that we encounter considerable fluidity in the linguistic data, with predominantly mass nouns sometimes being used as count, and vice versa, both of these deviations from the dominant pattern being due to the speaker's desire to encode special conceptualizations. The situation contrasts sharply with the case of morphosyntactic categories that are based solely on distributional patterns, such as (in many cases) noun gender. A speaker of Italian is not free to manipulate the gender of *giardino* in order to convey distinct construals of 'garden', since noun gender is not motivated by any conceptual aspects. But a speaker of English *is* free to play around with the count or mass status of a noun in order to encode distinct construal of an entity.

As we have seen, conceptualization does not seem to be so powerful as to be able to change any count noun into a mass noun. Especially when a referent is conceptualized in physical space, the influence of linguistic conventions is stronger than our capability of encoding distinct construal of an entity. In physical space, it is true that boundedness is an essential characteristic of objects and the object/substance property of the referent influences our count/mass construal of the referent, but the count/mass construal of a noun is not fully determined by the object/substance property alone.

Some count nouns like 'cat', 'apple' and 'spider' accept the count-to-mass shift easily, while others like 'car' and 'bottle' strongly resist the mass construal. Those count nouns that easily accept the mass construal may keep their count status even when the referent has lost its structural integrity but can still be recognized as an individual or whole entity as in the case of 'a grated carrot' and 'a squashed spider'. Recognizability, as well as boundedness, plays an important part in construing a referent as an object or a substance.

Other nouns, such as 'car' and 'bottle', keep their count status even when the referent has lost its structural integrity beyond recognition, i.e. when the referent is in the state of a substance and can be in no way individuated (e.g. dismantled cars, smashed bottles). These nouns seem to have an inherent predisposition to the count construal and resist the count-to-mass shift.

Nouns like 'car' and 'bottle' show strong resistance to the count-to-mass shift, probably because their original countable image of the referent is much stronger than those nouns like 'apple', 'cat' and 'spider', and the countable image can be retained even in a completely substance state (e.g. dismantled car). Each noun has its inherent predisposition to the count or the mass construal, which is forced on us by linguistic conventions. In physical space, our resistance to linguistic conventions is futile. The intrinsic predisposition is more powerful than the criterion of boundedness or recognizability. It requires a domain shift in non-physical space to break linguistic conventions.

For a count-to-mass shift, a reranking of domains is required, elevating quality space to the status of primary domain. For instance, 'table', which is prototypically a count noun, can be construed as a substance and coded as a mass noun when the domain shift occurs from furniture to food. In the same way, 'car', which shows strong resistance to the mass construal in physical space, accepts the count-to-

mass shift when conceptualized in the domain of comfort, performance or size, where the physical existence of the referent is irrelevant.

It can be assumed that there are some nouns that do not allow the domain shift which makes the count-to-mass shift possible. We may wonder what kind of domain shift is required to allow a count-to-mass shift for 'box' or 'ring' for example. We still need to study further to examine what factors make it possible for certain count nouns to resist the count-to-mass shift.

Bibliography

- Allan, Keith. (1980). Nouns and countability. *Language* 56: 3, 541-567.
- Biber, Douglas, Stig Johansson, Geoffrey Leech, Susan Conrad, and Edward Finegan. (1999). *Longman Grammar of Spoken and Written English*. Essex: Pearson Education Limited.
- Celce-Murcia, Marianne and Diane Larsen-Freeman. (1999). *The Grammar Book*, 2nd Ed. Boston: Heinle & Heinle Publishers.
- Croft, William. (2001). *Radical Construction Grammar*. Oxford: Oxford University Press.
- Crystal, David. (1995). *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press.
- Downing, Angela and Phillip Locke. (2002). *A University Course in English Grammar*. New York: Routledge.
- Hewson, John. (1972) *Article and Noun in English*. The Hague: Mouton.
- Huddleston, Rodney. (1984). *Introduction to the Grammar of English*. Cambridge: Cambridge University Press.
- Huddleston, Rodney and Geoffrey Pullum. (2002). *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press.
- Jespersen, Otto. (1924). *The Philosophy of Grammar*. Chicago: University of Chicago Press.
- Langacker, R. W. (1987). *Foundations of Cognitive Grammar* (Vol.1). Stanford: Stanford University Press.
- Langacker, R. W. (1991a). *Foundations of Cognitive Grammar* (Vol.2). Stanford: Stanford University Press.
- Langacker, R. W. (1991b). *Concept, Image, and Symbol: The Cognitive Basis of Grammar*. Berlin: Mouton de Gruyter.
- Lee, David. (2001). *Cognitive Linguistics: An Introduction*. Oxford: Oxford University Press.
- Matthews, Peter H. (1997). *Oxford Concise Dictionary of Linguistics*. New York: Oxford University Press.
- Pelletier, F. J. (1979). "Non-singular Reference: Some Preliminaries". *Mass Terms: Some Philosophical Problems*. Edited by Francis J Pelletier. Dordrecht: D. Reidel Publishing Company.
- Quine, W.V.O. (1960). *Word and Object*. Cambridge, MA: MIT Press.
- Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A Comprehensive Grammar of the English Language*. London: Longman.
- Radden, G. and Dirven, R. (2007). *Cognitive English Grammar*. Amsterdam: John Benjamins.
- Reid, Wallis. (1991). *Verb and Noun Number in English*. Essex: Longman.
- Swan, Michael. (2005). *Practical English Usage*, 3rd Ed. Oxford: Oxford University Press.
- Taylor, J. R. (2002). *Cognitive Grammar*. Oxford: Oxford University Press.
- Trask, Robert Lawrence. (1993). *A Dictionary of Grammatical Terms in Linguistics*. New York: Routledge.
- Wierzbicka, A. (1985). 'Oats and wheat: the fallacy of arbitrariness'. In John Haiman (ed.), *Iconicity in Language*, 311-42. Amsterdam: Benjamins. Revised version in Wierzbicka (1988), 499-560.
- Wierzbicka, A. (1988). *The Semantics of Grammar*. Amsterdam: John Benjamins.
- Wierzbicka, A. (1996). *Semantics: Primes and Universals*. Oxford: Oxford University Press.

(2009年11月27日掲載決定)