

# **English mass-count distinction based on proportionateness, convertibility, and entireness**

Minkyung Kim  
**(Seoul National University)**

**Kim, Minkyung.** 2017. English mass-count distinction based on proportionateness, convertibility, and entireness. *SNU Working Papers in English Linguistics and Language* 15, 80-92. This study suggests noble notions to current English mass/count noun distinction while introducing some new classes to English morphosyntax. A lot of features have been introduced to make clear boundaries for mass and count nouns in English. Boundedness and atomicity were some of key features to distinguish mass and count nouns. For some exceptions which do not fit directly to the English noun division, other classes have been added to the list such as 'fake mass nouns' for *furniture*. Moreover, the identity of English nouns was not always firm enough so some nouns were suggested to change their identity through the context as count into mass and vice versa. Therefore, those nouns whose identity is changeable are included into the mass/count distinction list. With regard to all of these noun classes, some of English nouns still belong to the same classes even though they do not share similarities. For these nouns, new concepts like *proportionateness*, *convertibility*, and *entireness* are introduced. The noble features would help us to make clear boundary for some nouns which can be divided into pieces that still carry the same property of the whole noun and to get clearer notion for the usage of indefinite articles in English. (**Seoul National University**)

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## **1. Introduction**

The field of English mass-count distinction has gained a number of spotlights with its remarkable importance. The distinction between English mass and count nouns has been analyzed with a lot of different features. In this study, I would like to shed light on the English mass-count distinction and introduce noble features that would render new noun classes. Furthermore, with these new noun classes, another new feature would be suggested to the usage of English indefinite article.

There have been various features to distinguish mass and count nouns in English. Jackendoff (1991) introduced *boundedness*. Using his two key features, [ $\pm$ BOUNDED] and [ $\pm$ INTERNAL STRUCTURE], he divided English noun classes into four groups such as *individuals*, *groups*, *substances*, and *aggregates*. In light of boundedness, Kfirkha (1998) and Chierchia (1998) explained the notion of *atomicity* which is similar to boundedness. Choi et al (2017) distinguished English nouns into six classes with the features of atomicity. Moltmann (1998) discussed integrity features to figure out characteristics of English mass and count nouns. However, these introduced features could not clearly divide the English noun classes and some of exceptions arise. Chierchia (1998) suggested that some of English mass nouns such as *furniture*, *jewelry* and *silverware* don't fit into the classes divided by atomic features. Therefore, he named those nouns 'fake mass nouns'. With some exceptions kept arising, Barner and Snedeker (2005) and Rothstein (2010) claimed that the distinction of English nouns is flexible. Barner (2005) suggested 'flexible count nouns' and Rothstein (2010) concluded that English nouns change their identity through context.

Even though there are a flood of proposals discussing English mass and count distinction, an issue related nouns such as *pizza*, *pie*, and *cake* is not defined yet. This noun class should be dealt with differently from other classes by some of noble features that are not introduced yet. I would like to tackle this issue with a noun class which can be used with measurements and according to the usage of indefinite articles of the related noun class further.

## 2. English Mass/Count Noun Distinction

### 2.1 Boundedness

The semanticist Ray Jackendoff (1991) argued that English nouns can be divided in accordance with the semantic property called boundedness.

He suggested two features to distinguish noun classes into four groups. They are presented as binary features. One feature is related to boundedness. For example, *apple* is [+BOUNDED] as the one hallmark of count noun, cannot be divided its referent up and still get something named by the same count noun. This distinguishes between count nouns like *banana*, or *car*, and mass nouns like *water* or *oxygen*. The idea is that count nouns have a more basic unit and cannot be divided to get further instances. The other feature is about internal structure. Collective nouns like *government* and plurals like *bananas* or *cars* in English can be [+INTERNAL STRUCTURE] as they have members inside the noun itself. With these two features, English nouns are divided into four classes such as *individuals*, *groups*, *substances* and *aggregates*. Some examples belonged to each type are shown in (1).

- (1) a. *apple* : individual
- b. *government* : group
- c. *water* : substance
- d. *apples* : aggregates

## 2.2 Atomicity

With regard to the concept of ‘boundedness’, another key feature called ‘atomicity’ has been introduced by a lot of scholars including Krifka (1998) and Chierchia (2010). A noun is ‘atomic’ if and only if there exists the smallest element (the atom) with the property denoted by the noun. For example, *table* is atomic because there is an atomic entity (*table*) that has the property *table*, part of that entity do not have the property *table*: they might be *table legs*, parts of the *table*, but not the *table*. On the contrary, water is non-atomic since the divided parts of water can have the property *water* (Choi et al, 2017).

This division of mass and count nouns in English seems similar to the notion of boundedness which was suggested by Jackendoff (1992).

However, these features of atomicity could not divide English mass and count nouns perfectly. Therefore, there seem to be some exceptions which do not fit directly into the classes. For example, *furniture* is a bounded, atomic noun as there is a clear boundary between one piece of *furniture* and the next, and not all parts of *furniture* are *furniture*. However, *furniture* belongs to a mass noun in English. We discussed that mass nouns in English are unbounded and non-atomic. To deal with these kinds of nouns, Chierchia (2010) introduced another noun class to call them, 'fake mass nouns'. In this class, *furniture* and *jewelry* are included. Accepting some new classes, Choi et al. (2017) divided English noun classes into six types adding the feature of concreteness and abstractness in English nouns, (i) count/atomic/concrete; (ii) count/atomic/abstract; (iii) mass/atomic/concrete; (iv) mass/non-atomic/concrete; (vi) mass/non-atomic/abstract. Some examples belonged to each class are shown in (2).

- |                                |                            |
|--------------------------------|----------------------------|
| (2) a. <i>computer, pencil</i> | : count/atomic/concrete    |
| b. <i>idea, method</i>         | : count/atomic/abstract    |
| c. <i>furniture, jewelry</i>   | : mass/atomic/concrete     |
| d. <i>evidence, advice</i>     | : mass/atomic/abstract     |
| e. <i>water, gas</i>           | : mass/non-atomic/concrete |
| f. <i>happiness, courage</i>   | : mass/non-atomic/abstract |

Even though some exceptions such as *furniture* and *jewelry* have found their group under the name of 'fake mass nouns', still some English words do not fit in the six classes shown in (2). The noun *apple* is an example of bounded, atomic count concrete noun belonging class a. Jackendoff (1991) and Krifka (1998) suggested that *apple* is bounded and atomic with the evidence of the smallest unit which might be called atom. However, we are familiar to some slices of an apple and still call them apple. Therefore, a doubt that whether *apple* is really the smallest unit comes into mind. Furthermore, another noun, which is in the mass

noun category, *pizza*, has the same issue. *Pizza* is a mass noun if it refers the substance of *pizza*, but it can be used as a count noun if we refer to a whole pizza or use the measure words such as ‘a slice of’. Even though we use the measurements in front of the word *pizza*, still it has the property *pizza*. Therefore, it is possible to reach a conclusion that some nouns like *pizza* can be divided into pieces but still have the property of the noun itself. In this point, we need to reach another concept to clear the boundaries of these confusing nouns.

### 2.3 Integrity

Before shedding light on another concept to distinguish nouns that can be divided into pieces while not losing the property of the whole noun, it would be better to consider the integrity feature suggested by Moltmann (1998). In his study, he explained the notion of loss and gain of shape with integrity. When count nouns are converted into mass nouns, generally an implication of integrity gets lost in the process. For example, *apple* as a count noun implies a certain shape, whereas *apple* as a mass noun used with measure words like ‘piece of’ rather suggests the loss of shape. Similarly, *cake* as a count noun implies a certain shape, whereas ‘a piece of cake’, used as a mass noun, does not imply any shape. Originally, mass nouns imply that any entity in their extension is not an integrated whole while count nouns imply that any entity in their extension in an integrated whole. (Moltmann, 1998)

Thus, it is clear that some English nouns introduced above have integrity features and when they are divided into ‘pieces’ or ‘slices’, they do not get the integrity feature anymore. However, it does not mean that the pieces or slices of the nouns lose its property, for example, a piece of an apple still has the property *apple*. Then, it seems like the smallest element, which is called atom, can be divided into minimal units further. The concept of boundedness and atomicity presupposes the existence of the smallest unit and in case of count nouns in English, they are bounded or

atomic, which means they themselves are the basic unit. However, at this point, we should define another noun class that can be divided into smaller parts but do not lose its own characteristic.

## 2.4 Flexibility & Convertibility

Another proposal for the exceptions in English mass and count noun distinction was suggested by Barner and Snedeker (2005). They used the term ‘flexible count nouns’, which can be flexibly used either as a count noun or a mass noun depending on the context which is being used (e.g. *string, chocolate, paper, and stone*). In their experiment, they presented pictures and related questions to see whether participants could distinguish the flexible nouns throughout different contexts. Interestingly, when participants were asked – “Who has more strings?” which invites a count noun interpretation, they chose the picture that had more strings in number. It means they consider the noun *string* as a count noun. When participants were asked to answer – “Who has more string?”, in contrast, they picked the picture that had a longer string, but fewer in numbers. It means they consider the noun *string* as a mass noun.

In accordance with the flexibility feature, Han (1996) introduced the ‘convertible mass nouns’ such as *yogurt, wine, or meat*. They can be considered either mass or count throughout the context. In the sentence ‘Customer ordered a lot of coffee(s), but the barista did not work’, which is used as a question in the experiment conducted by Kim (2015), the given context is count. Since the participants in her study were based on L2 learners whose first language was Korean, they considered *coffee* as mass noun even though the context was presented as count.

To set up some of exceptions and new classes in mass-count noun distinction, we need other concepts of feature that could clearly distinguish the blurry boundaries.

### 3. Proportionateness and Mass/Count Noun Distinction

English nouns are generally distinguished as mass and count nouns. In the two classes, a lot of nouns not only share their similarities but also have differences. Therefore, many theories and notions have been suggested to compare and contrast English nouns in the aspect of mass and count. Some features introduced so far only regard nouns as a basic unit and do not discuss the dividability of the smallest units. Even though some nouns are divided into parts, they do not lose their properties, which the noun itself possesses. Therefore, we need another key feature to manage those nouns which still carry their hallmarks although they are divided into pieces.

Furthermore, the division of nouns here does not mean what Jackendoff (1991) and Chierchia (2010) discussed. They thought, for example, count nouns like *table* can be divided into parts of *table*, such as table legs. This means that both boundedness and atomicity consider the noun as the composition of elements. In accordance with this notion, *apple* will be divided into seed, flesh and rind. These will be the elements that are composed to be an *apple*. It is clear that those elements like seed, flesh and rind do not have the property *apple*.

In this study, we will focus on the direct dividability. The divided parts can still have the property of the integrated noun has at first. Then, these nouns are [+PROPORTIONATE]. For example, in the case of count noun, *apple*, or watermelon can be divided into pieces on direct proportion. Still, they can be called *apple*.

In the case of mass noun, nouns like *pizza* can be [+PROPORTIONATE]. Proportionate mass nouns like *pizza* have another feature to be considered an exception. *Pizza* can be used into three ways. First, it can be a mass noun when it means the substance *pizza*. Second, it can be a count noun, when it means the whole pizza used with an indefinite article *a*. Finally, it can be also a count noun when it is used with measurements like ‘a slice of’. However, proportionate count nouns do not have this

kind of convertibility. Therefore, at this point, we need another concept to deal with these nouns.

#### **4. Convertibility and Mass/Count Noun Distinction.**

There have been some suggestions that the identity of English mass and count nouns can be changed throughout context (Barner and Snedeker, 2005, Han, 1996, Rothstein, 2010). Rothstein (2010) insisted that the particular context  $k$  decides the mass and count distinction of English nouns.

In light of the suggestions that nouns' identity differ along the context, there should be another feature which could manage the nouns that can change their identities. I propose the concept of [ $\pm$ Convertible]. When nouns are changeable with their identity, they are [+Convertible]. For example, flexible count nouns, and convertible mass nouns are included. Moreover, proportionate mass nouns like *pizza* is also [+Convertible] as it can be used either as mass and count noun through the context.

#### **5. Mass and Count Noun Distinction based on Noble Features**

According to these noble features, proportionateness and convertibility, some nouns which share same characteristics can be listed into new classes. The new noun distinction will be adding two classes to the original groups using the features of concreteness, abstractness, and atomicity. Suggested classes are shown in (3).

- (3) a. *chair* : count/ concrete/ atomic/ non-proportionate/  
non-convertible

- b. *idea* : count/ abstract/ atomic/ non-proportionate/  
non-convertible
- c. *stone* : count/ concrete/ non-atomic/ non-  
proportionate/ convertible
- d. *apple* : count/ concrete/ atomic/ proportionate/ non-  
convertible/ non-convertible
- e. *evidence* : mass/ abstract/ atomic/ non-proportionate/  
non-convertible
- f. *happiness* : mass/ abstract/ non-atomic/ non-  
proportionate/ non-convertible
- g. *water* : mass/ concrete/ non-atomic/ non-  
proportionate/ non-convertible
- h. *yogurt* : mass/ concrete/ non-atomic/ non-  
proportionate/ non-convertible
- i. *furniture* : mass/ concrete/ atomic/ non-proportionate/  
non-convertible
- j. *pizza* : mass/ concrete/ atomic/ proportionate/  
convertible

The new classes added are having the key feature, proportionateness. They are shown in d and j in (3). Again, they can be divided into parts based on the direct proportion. The division does not mean splitting into the composed elements.

Flexible count nouns are presented in the class c. As they can be interpreted both as count and mass nouns through the various contexts, they can have the feature of convertibility. Therefore, they are [+CONVERTIBLE]. In case of mass nouns, the class g should be distinguished from the class h in terms of convertibility. They are convertible mass nouns. The example sentence from Kim (2015), ‘Eating a lot of yogurt(s) with a Mediterranean diet can cut your obesity risk’, suggests that these kinds of nouns can be considered as count in the count

context. However, *water* in class g is not usually regarded as count. Fake mass nouns introduced by Chierchia (2010), is sorted in the class i.

## 6. Indefinite Article and Measure Word Usage

The usage of indefinite articles varies through the identity of the nouns. Generally, count nouns can be used with indefinite articles when they are singular whereas mass nouns cannot be used with indefinite articles. When mass nouns are considered count, they are usually used with measurements such as ‘a slice of’ or ‘three bowls of’. Measurements allow mass nouns to be count.

### 6.1 Indefinite Article Usage

English indefinite articles are usually used when the noun is introduced at first which means indefiniteness. English count nouns are used with indefinite articles *a* or *an* when they are singular or they indicate [+INDEFINITE]. However, when the indefinite article is used with the proportionate convertible mass noun such as *pizza*, it explains that the pizza is a whole. Then, it is understandable that the indefinite article *a* here has another feature of *entireness*. We can say that indefinite article has the characteristic of entireness when it is used in front of the proportionate nouns. In the case of proportionate count nouns, it is natural to use indefinite articles like *an apple*, so the feature of entireness can be blurred. However, still it means the wholeness of *apple*. Therefore, it is comprehensible that indefinite articles have the feature of entireness in both of count and mass nouns.

### 6.2 Measurement Usage

Proportionate nouns can be used with measure words that indicate parts like ‘a piece of’ or ‘a slice of’. Even though other nouns which are non-proportionate can be used with measure words, they do not mean the direct proportion which is the similarity among proportionate nouns. For instance, a piece of *furniture* means not the dividableness of *furniture* but a member included in the group of *furniture* like *table*.

Measure words which shows parts like ‘a piece of’ or ‘a slice of’ act as an indicator that the nouns might have the proportionateness as their feature. On the contrast, the indefinite article *a* or *an* acts like the counter indicator of the wholeness.

## 7. Discussion

English mass and count noun distinction has been a remarkable area for scholars to study. Morphosyntactic division such as count and mass noun serves as a basic standard for mass/count noun distinction in English. For further clear division, other features like boundedness and atomicity have been introduced. To deal with some exceptions such as *furniture*, which is a mass noun in English, but still is a bounded, atomic noun, other concepts such as ‘fake mass nouns’ were suggested.

However, even though some concepts were insisted to manage special nouns, there are still unclear nouns like *apple* or *pizza*. Boundedness and atomicity are based on the notion that in the case of count nouns, the noun itself is the smallest unit, which is called an atom in atomicity. It is clear that *apple* can be divided into pieces having the same property. These pieces are not the elements composing the smallest unit carrying the property as a whole. However, they are parts that are split from the entire noun having the same hallmark. These proportionate nouns are both in the group of count and mass nouns. Count proportionate nouns are *apple* or *watermelon*. Mass proportionate nouns are *pizza* or *cake*.

The mass proportionate nouns are also convertible as they can be used in three ways. When they are used as count, they can be used with indefinite articles and measurements. Indefinite articles with proportionate mass noun indicate the entireness while the measure words regard them non-entire.

The noble features for mass/count noun distinction in English, proportionateness and convertibility, allow us to make clear boundaries for vague nouns which do not fit directly into originally suggested classes. Another concept explained for English indefinite article, entireness, enables us to clarify the features of indefinite article when it is used with proportionate nouns. It is clear to know that indefinite articles in front of proportionate nouns make them indicate the wholeness. Although these features help us get rid of the vagueness in mass/count noun distinction in English, when it comes to language acquisition, they might not be necessary. When we think of first language acquisition of English, children usually get clear with English noun distinction and article usage when they are young, at the age around six. Therefore, whether they can realize the features of proportionateness and convertibility would be the remarkable issue. Further experiments in the acquisition of those features by English L1 speakers would be the next step to set up. Then, if it is clear that the L1 speakers can understand the proportionateness, convertibility, and entireness, L2 speakers would be next target to ensure the suggested notions.

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Minkyung Kim  
minkyung.kim0322@snu.ac.kr