Mass/Count Noun Distinction in L2 English

Yılmaz Köylü

1. Introduction

Most languages reflect a distinction between two types of nouns referred to as mass and count nouns. In English grammar, the use of mass or count nouns interacts with the use of plural morphology, distribution of number marking and the use of determiners. Since it is attested in the second language acquisition literature that even advanced L2 learners of English make mistakes in those domains (Ionin, Ko, & Wexler, 2004; Ionin, Zubizarreta, & Philopov, 2009), the proposed study aims to probe into the representation of mass/count noun distinction in L2 English with a view to further test the question of language transfer in second language acquisition. Using a quantity judgment task adapted from Barner and Snedeker (2005), the researcher investigated to what extent Turkish L2 learners of English correctly control the mass/count noun distinction in L2 English. The broad theoretical goal is to contribute to the existing body of literature in mass/count noun distinction as well as the issue of language transfer in second language acquisition. The second and more practical goal of the current study pertains to pinpointing the exact locus of the challenges faced by L2 learners of English in the use of mass/count nouns to create better pedagogical materials to improve L2 learners’ use of plural morphology, number marking, and determiners.

2. Literature Review

2.1. Mass/count as a semantic distinction

Quine (1960) proposed that mass and count nouns can be distinguished by two semantic criteria. These are cumulative reference and divisity of reference. Cumulative reference has to do with being able refer to an object in the same way when we add more ‘stuff’ to the object in the real world. To illustrate, some water can still be referred to as water if we add more water to it. On the other hand, a cat cannot be referred to as a cat when we add another cat. The second criterion, divisity of reference, is dividing ‘stuff’ to see whether the divided entity can still be referred to in the same way. To illustrate, some water is still water if divided. However, a cat is not a cat when divided.

2.2. Mass/count as a syntactic distinction

Mass and count nouns are also encoded differently in grammars of the world’s languages. According to Chierchia (1998), the three most crucial differences in how those two types of nouns are marked in English grammar relate to the availability of plural morphology, distribution of number marking and the use of determiners. First of all, while count nouns can have plural marking, mass nouns cannot, as illustrated in (1).

(1) a. cats
   b. *waters

Second, while count nouns can combine with numerals, mass nouns cannot. In distinguishing count nouns from mass nouns, Chierchia (2010) refers to this property as the signature property, which prevents mass nouns from being used with numerals as shown in (2).

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Another distinction is that some determiners such as *every, each, a, several, a few, few, many* and *both* occur only with count nouns (3) while *little* and *much* are restricted to mass nouns (4).

(3) a. {many / several / a few} cats
b. *{many / several / a few} water

(4) a. *{much / little} cat
b. {much / little} water

According to Chierchia’s (2010) mapping property, substances are mapped onto mass nouns and objects are mapped onto count nouns. However, there are exceptions in the mapping of objects to count nouns. Superordinate nouns (i.e. nouns that represent a superior category within a classification system) like *furniture* or *footwear* (which are superordinate to terms like *chair* and *shoe* respectively) denote objects but are used with mass syntax, and thus cannot be pluralized or used with numerals (Chierchia, 2010). Such nouns are termed object mass nouns. Consider (5) below:

(5) a. There is furniture in the room.
b. *There are furniture in the room.

Yet another category of nouns is the flexible mass/count nouns that can be used with either mass or count syntax depending on the availability of an indefinite article or plural morphology.

(6) a. There is apple in my sandwich (mass syntax and interpretation).
b. {There is an apple / There are apples} in the bowl (count syntax and interpretation).

2.3. Mass/count problem cases

A number of researchers have proposed hypotheses as to why certain nouns can be conceptualized as mass or count nouns. To illustrate, Borer (2005) maintains that lexical items have very few inherent properties cross-linguistically and that their interpretation depends entirely on the context. In a similar vein, Cowper and Hall (2012) state that at least in English, most nouns are unspecified on whether they denote a mass or a count noun. Unlike Chierchia (1998), they argue that interpreting a count noun as mass or a mass noun as count is not a matter of coercion or type shifting but rather the morpho-syntactic filling of features, which are not specified on the lexical item itself. Yet another proposal that supports a similar view is by Wiltschko (2012), in which she argues that one needs to distinguish between ontological and categorical properties of nouns. The former is about whether nouns denote substances or individuals while the latter determines whether nouns are categorized as mass or count. Wiltschko (2012) states that the ontological properties are about classifying the world and not the nouns which are used to name things in the world. She proposes that the categorical properties related to the mass/count noun distinction cannot be equated or derived from ontological properties. That is, although all languages have ontological categories *mass* and *count*, there are languages that do not categorically make a distinction in this domain. Blackfoot is one of those languages in which such a distinction does not exist because that distinction is not grammaticized. However, that does not translate to Blackfoot speakers not being able conceptualize substances or individuals or differentiate one from the other. According to Wiltschko (2012), it is just that some grammars do not care about mass or count, and hence the lack of categorical distinction or grammaticization. In languages where there is a categorical distinction (such as English), it is the grammatical properties of the lexical item that determines whether it refers to a substance or an individual.

Pelletier (2012), on the other hand, asserts that if the concepts of count and mass are encoded lexically as syntactic features of nouns, there arise problems with nouns that are usually not exclusively mass or count (e.g. chocolate[s]). On the other hand, if count and mass are semantic features, Pelletier (2012) argues that there is the problem of mismatches between the meanings of nouns and how they
behave grammatically. That concerns nouns such as furniture and silverware, which are semantically count but syntactically mass. Based on these facts, Pelletier (2012) maintains that the lexicon is blind to the distinction between count and mass. He points out that a noun such as chocolate has a denotation that includes both chocolates and portions of chocolate-stuff. When a noun is used with count syntax, the mass part of the meaning of the noun is deleted from its representation.

2.4. Mass/count noun distinction: why is it interesting?

The mass/count noun distinction has received a great deal of interest among linguists, psychologists, cognitive scientists and language philosophers alike since it is a perfect test case to investigate the famous linguistic relativity hypothesis, also known as the Sapir–Whorf hypothesis. According to the strong version, the structure of a language has a strong effect on the worldview of its speakers. It also maintains that language determines thought. Thus, according to the strong view, a word that does not exist in a certain language cannot be conceptualized by its speakers. For instance, the Bantu word mbuki-nvuki, which means to take off clothes and dance uninhibited, should be impossible to conceptualize by speakers of languages in which such a word does not exist. However, the strong view does not seem to hold. The weak version, accepted by many linguists, and which I also believe to be plausible, argues that the language one speaks influences thoughts and decisions but does not determine thought or have a strong effect on cognition.

2.5. What do mass/count nouns map onto?

The Quinian correspondence hypothesis (Quine, 1960) simply states that count nouns map onto individuals while mass nouns map onto non-individuals. Basing his argument on nouns such as furniture, footwear and jewelry, which can be individuated to their atoms although used with mass syntax, Gillon (1996) argues that mass nouns are linguistically unspecified as to whether they denote individuals and whether mass nouns refer to individuals is specified by world knowledge. On the other hand, Chierchia (1998), also basing his argument on nouns such as furniture, footwear, and jewelry, argues that all mass nouns are inherently plural as they refer to set of atoms or individuals. Below is a summary of each proposal described above.

(7) The Quinian correspondence hypothesis (Quine, 1960)
   a. count noun → individual
   b. mass noun → non-individual

(8) Linguistic non-specification (Gillon, 1996)
   a. count noun → individual
   b. mass noun → specified by world knowledge

(9) Inherent plurality (Chierchia, 1998)
   a. count noun → individual (or atom)
   b. mass noun → plurality of individuals (or atoms)

(Barner & Snedeker, 2005, pp. 44-46)

Barner and Snedeker (2005) argue that Quinian correspondence hypothesis is not substantiated by the results of their study since their participants interpret object mass nouns such as furniture as quantifying over individuals. Regarding Chierchia’s (1998) inherent plurality hypothesis and Gillon’s (1992) linguistic non-specification, they argue that these proposals fail to account for their results since neither theory has a proposal to account for the distinct interpretations of flexible items that can be used with mass or count syntax.

Barner and Snedeker (2005) propose an alternative account, which they term Lexico-syntactic selection of individuation. According to this account, the referential entailments of a noun can have lexical or syntactic grounds. According to this view, the type of syntax a noun is used in determines whether quantity judgment is based on number. Syntactic selection explains the interpretation of count nouns and substance mass nouns, as well as accounting for flexible mass-count nouns such as string and
rock. As for object mass nouns such as furniture, they argue that syntax does not play a role or create any entailment that there is reference to individuals. Those nouns individuate due to their lexical features, which, combined with the mass syntax, create reference to individuals. Barner and Snedeker’s (2005) proposal can be illustrated in the figure below.

<table>
<thead>
<tr>
<th>Lexical roots</th>
<th>Count-Mass Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STRING)</td>
<td>Count syntax</td>
</tr>
<tr>
<td>(FURNITURE)</td>
<td>(some string)</td>
</tr>
<tr>
<td>+IND</td>
<td>+IND</td>
</tr>
<tr>
<td></td>
<td>Mass syntax</td>
</tr>
<tr>
<td></td>
<td>(some furniture)</td>
</tr>
</tbody>
</table>

Figure 1. Lexical and syntactic origins of individuation.

3. Turkish Data
3.1. Is there a mass/count noun distinction in Turkish?

The same syntactic criteria explained in Section 2.2. can be applied to Turkish to see whether there is a difference between count and mass nouns. First of all, while count nouns can have plural marking, mass nouns cannot, as illustrated below.

(10) kedi-ler  
cat-PLU  
‘cats’

(11) su-lar¹  
water-PLU  
‘*waters’

Second, while count nouns can combine with numerals, mass nouns cannot.

(12) üç kedi  
three cat  
‘three cats’

(13) *üç su  
three water  
‘*three waters’

¹ The word sular can be acceptable in a coerced way referring to bottles, or cups of water. That is, the plurality in such a usage modifies the package or the container the liquid comes in rather than the liquid itself. However, sular is also acceptable in a non-coerced interpretation according to Wiese (2012). Wiese (2012) coins the term transnumeral nominals to refer to nouns such as furniture and footwear that do not require plurality for plural reference. Thus, such nouns are number neutral. She maintains that the combination of a plural marker and a transnumeral noun triggers a special meaning rather than adding canonical plurality. When there is plural marking on count nouns in a transnumeral language, the function of the plurality is to add the meaning of ‘many’ or ‘varied’ to the noun. When the plural marker appears on a mass noun, it triggers a large amount reading as in the example from Göksel and Kerslake (2005) below:

<table>
<thead>
<tr>
<th>kir-ler</th>
<th>bir</th>
<th>tür-lü</th>
<th>çık-mu-yor-du</th>
</tr>
</thead>
<tbody>
<tr>
<td>dirt-PLU</td>
<td>one</td>
<td>reason-ABL</td>
<td>come out-NEG-PROG-PAST.3SG</td>
</tr>
</tbody>
</table>

‘The dirt just wouldn’t come out.’

In sum, the use of the plural marking on a mass noun adds the meaning of ‘a large amount’ in a language like Turkish according to Wiese (2012).
Moreover, count and mass nouns can be modified by different determiners or quantifiers. Count nouns are used with quantifiers such as *her* (every), *birkaç* (some / a few), *bazı* (some / a few), *birçok* (many), *çoğu* (most). In addition, the question word *kaç tane* (how many) is used to ask about the number of individuals. The use of these quantifiers with mass nouns leads to ungrammaticality as shown below.

(14) {her / birçok / her / birçok / çoğu} kedi
    {every / some / a few / many} cat

(15)*{her / birçok / birçok / çoğu} su
    {every / some / a few / many} water

The use of a nominal with those quantifiers is incompatible with plural marking as shown in (16/17).

(16) her insan eşit-tir
    every human equal-COP
    ‘Every human is equal.’

(17)*her insan-lar eşit-tir
    every human-PLU equal-COP
    ‘*Every human is equal.’

On the other hand, the quantifiers used with mass nouns are *biraz* (a little), *az* (little). In addition, the question word *ne kadar* (how much) is used to ask about the amount of substances.

(18) {biraz / az} para-m var
    a little / little money-1SG.POSS exist
    ‘I have a little / little money.’

Some quantifiers, such as *çok* (much / many), and *hiç* (no / not any) can be used with both count (19 and 21) and mass nouns (20 and 22).

(19) sokak-ta çok kedi var
    street-LOC many cat exist
    ‘There are many cats on the street.’

(20) masa-da çok toz var
    table-LOC much dust exist
    ‘There is a lot of dust on the table.’

(21) sokak-ta hiç kedi yok
    street-LOC no/not any cat not exist
    ‘There is no / isn’t any cat on the street.’

(22) masa-da hiç toz yok
    table-LOC much dust not exist
    ‘There is no / isn’t any dust on the table.’

Despite the syntactic differences in mass/count nouns, Chierchia (2015) argues that mass nouns can be coerced into count nouns and count nouns into mass nouns. Jackendoff (1991) refers to the first phenomenon as the *universal packager*. He argues that when mass nouns are used with count noun morphology, such as numerals or plural markers, these nouns have to be interpreted as denoting individuals rather than substances. This operation causes mass nouns to be interpreted as being ‘packaged’. In Turkish, this operation is observed when mass nouns are used with numerals as shown below.
It is quite natural to hear an expression like (23) in a restaurant where the speaker is asking for two bowls of soup. In that sense, the universal packager operation can be applied to any mass noun in Turkish (just as it can in English), leading the mass noun to be construed as an individuated entity. Similarly, count nouns can be coerced into mass nouns by an operation called the universal grinder. Pelletier (1975) defines the universal grinder operation as below:

Consider a machine, the ‘universal grinder’. This machine is rather like a meat grinder in that one introduces something into one end, the grinder chops and grinds it up into a homogeneous mass and spews it onto the floor from its other end. Take an object corresponding to any (apparent) count noun [...] (e.g., ‘man’), put the object in one end of the grinder, and ask what is on the floor (answer: ‘There is man all over the floor’) (p.456).

Despite instances where coercion from a mass noun into a count noun and vice versa are possible, we can argue that these cases are exceptions. That is because nouns canonically referred to as mass and count nouns show distinct properties with respect to licensing pluralization, number marking and distribution of determiners and quantifiers in Turkish. Thus, just like in English, we can argue that there is mass/count noun distinction in Turkish.

3.2. The plural marker in Turkish

The plural marker in Turkish is –lar, where the vowel in the plural marker is conditioned by the backness of the vowel in the final syllable of the word it attaches to. When the last syllable of the word has a back vowel (a/i/o/u) -lar is used to pluralize the word. When the last syllable of the word has a front vowel (e/i/ö/ü), -ler is used to pluralize the word.

(24) araba-lar
car-PLU
‘cars’

(25) ev-ler
house-PLU
‘houses’

In Turkish, a bare count noun in the object position is ambiguous between a singular and a plural interpretation. Thus, a canonically individual denoting noun such as kitap (book) can have a singular or a plural denotation as in (26). In that respect, we can argue that bare nominals that are in the object position in Turkish are unspecified for number. One difference between English and Turkish is that in Turkish, a singular count noun can appear as a bare argument without a determiner or a quantifier.

(26) herkes kitap oku-r
everyone book read-AOR
‘Everyone reads books.’

In (26), even though a bare count noun is used, a natural interpretation of the sentence is Everyone reads books instead of book denoting a single entity. Consider (27) below where plural marking on the object makes the sentence ungrammatical.

(27) *herkes kitap-lar oku-r
everyone book-PLU read-AOR
‘Everyone reads books.’
Since a bare noun in the object position can refer to plural entities, overt marking of plurality renders the sentence ungrammatical. In contrast to a bare singular noun in the object position that is ambiguous between a singular or a plural denotation, a bare singular noun in the subject position as in (28) can only have a singular and definite reference. However, the only way to have a plural interpretation for a bare noun in the subject position is to use overt plural marking as in (29).

(28) kalem masa-da
   pencil table-LOC
   ‘The pencil is on the table.’

(29) kalem-ler masa-da
    pencil-PLU table-LOC
    ‘The pencils are on the table.’

One more issue relevant to plural marking in Turkish is the interaction between plural marking and numerals. In Turkish, count nouns can be used with the indefinite article bir (a/an) or numerals such as bir (one), iki (two), üç (three). Such use with numerals with 2 or higher blocks plural marking (-lar/-ler) on the noun. Consider the following examples.

(30) sokak-ta beş kedi gör-dü-m
    street-LOC five cat see-PAST-1SG
    ‘I saw five cats on the street.’

(31) *sokak-ta beş kedi-ler gör-dü-m
    street-LOC five cat-PLU see-PAST-1SG
    ‘*I saw five cats on the street.’

In contrast to (30), the use of the plural marker on a noun where the noun is already modified by a numeral leads to ungrammaticality as in (31).

4. The Current Study

The current study is a replication of Barner and Snedeker (2005) in second language acquisition. Barner and Snedeker (2005) investigated the representation of mass/count nouns in L1 English of children and adults. Their aim was to find out if adults and children treat object mass nouns (such as furniture and jewelry that are used with mass syntax but can be individuated) like they treat count nouns with respect to how they make judgments about quantity. They tested substance mass nouns (e.g. water), count nouns (e.g. apple), object mass nouns (e.g. furniture), and mass/count flexible nouns (e.g. string/s). Participants were simply asked “Who has more X?” and they were given two pictures as options for each item. One picture included a large object or substance while the second picture included three small objects or substances\(^2\). Count nouns appeared with the plural marker in the questions. The rationale behind using such a design was that if participants chose the picture with three small objects or substances, it meant that they based their judgment on number rather than amount. If, on the other hand, participants chose the picture with one big object or substance, it meant that they based their judgment on amount. Barner and Snedeker (2005) found that both children and adult native speakers of English based their judgment on amount for substance mass nouns (e.g. water) and according to number for count nouns (e.g. apple) and also for object mass nouns (e.g. furniture). In mass/count flexible items (e.g. string, rock), participants’ quantity judgments were based on number when they were used with count syntax (with the plural –s), but on amount when they were used with mass syntax.

This study investigated to what extent Turkish L2 learners of English based their quantity judgments on number or amount in evaluating substance mass nouns, object mass nouns, count nouns and mass/count flexible nouns. The research questions addressed in this study are:

\(^2\) See Figure 2 in Section 4.1.2. for a sample item.
- Do quantity judgments of L2 learners align with that of native English speakers?
- To what extent do L2 learners base their quantity judgments on number or amount in substance mass nouns, object mass nouns, count nouns and flexible mass/count nouns?
- Does L2 proficiency lead to a more native-like interpretation of the nouns tested?
- Is there an effect of the first language on L2 learners’ treatment of the types of nouns tested?

4.1. Method
4.1.1. Participants

15 Turkish L2 learners of English from a large research university in the Midwest participated in the study. There were 3 groups (each with 5 participants) based on their L2 proficiency in English. There were also 5 native speakers of English, who constituted the native control group. The average age of the participants was 24.3. At the time of testing, the students were studying at an intensive English program. They were chosen from levels 5, 6, and 7 from that program that has levels 1 through 7, 1 being absolute beginners and 7 being advanced learners of English. Even though an independent L2 proficiency test was not administered as part of the current study, all the students had already taken the institutional based TOEFL (TOEFL ITP) before taking part in the study. The cut-off scores to be included in each level was 420, 450 and 500 for levels 5, 6, and 7 respectively. The average TOEFL ITP scores in Level 5 was 433, for Level 6, it was 471 and for Level 7, it was 517.

4.1.2. The task

To investigate the extent to which L2 learners use number or amount in their quantity judgments when they evaluate substance mass, count, object mass, and flexible mass/count nouns, they were given a quantity judgment task (QJT) adapted from Barner and Snedeker (2005). A QJT presents participants with pictures each divided into two. On each side of each picture, participants see a possessor (a cartoon character) and the object/s or the substance that that character possesses. Then, participants are simply asked “Who has more X”? In this task, each type of noun was tested using 4 words, so there were 20 test items in total (since flexible mass/count nouns were tested with both mass and count syntax). The task was presented using powerpoint slides and the order of the items was randomized. Count nouns always appeared with count syntax (plural –s on the noun) and substance mass and object mass nouns had mass syntax. Flexible mass/count nouns were tested with both mass and count syntax. For count, and object mass nouns, the test pictures included one big object and three small ones. For substance mass nouns, the test pictures included one large portion of stuff and three small portions of the same stuff. The figure below represents a sample item.

![Who has more apples?](Image)

Figure 2. A sample item from the Quantity Judgment Task (QJT) to test count nouns
4.1.3. Results

The participants’ responses for each noun were recorded and their cumulative scores were calculated to investigate whether their interpretations aligned with the judgments of native English speakers. Since the 3 learner groups did not differ significantly from each other in terms of using number or amount in interpreting the nouns tested, all 15 learners’ responses were combined. The table below shows the descriptive statistics regarding whether the participants and the native speakers chose number or amount in interpreting the different nouns tested.

Table 1. Descriptive statistics from the Mass/Count QJT

<table>
<thead>
<tr>
<th></th>
<th>L2 learners</th>
<th>Native Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Amount</td>
</tr>
<tr>
<td>Substance mass</td>
<td>1.66</td>
<td>98.33</td>
</tr>
<tr>
<td>Count</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Object mass</td>
<td>68.33</td>
<td>31.66</td>
</tr>
<tr>
<td>M/C Flexible (mass)</td>
<td>43.33</td>
<td>56.66</td>
</tr>
<tr>
<td>M/C Flexible (count)</td>
<td>93.33</td>
<td>6.66</td>
</tr>
</tbody>
</table>

A mixed ANOVA was performed to assess whether the L2 learners differed from the native speakers with respect to whether they chose number or amount in their responses. The results indicated that there was a significant difference between the two groups $F(1,18)=.43, \ p=.038$. Following the mixed ANOVA, an independent samples t-test was run separately for each noun type. The results indicated that the two groups were not statistically different from each other in mass nouns ($p=.238$), count nouns ($p=.34$), and mass/count flexible nouns with count syntax ($p=.27$). However, significant differences were observed between the two groups in object mass nouns ($p=.039$) and mass/count flexible nouns with mass syntax ($p=.001$).

The results indicate that for native speakers of English, there is a clear distinction between substance mass nouns and count nouns since they consistently based their quantity judgments on amount and number respectively in those domains. The issue of flexible mass/count nouns is also straightforward for native speakers, revealed by their basing their quantity judgments exclusively on number when the noun in question has count syntax (e.g. Who has more papers?), but again exclusively on amount when it has mass syntax (e.g. Who has more paper?). An interesting finding also found in Barner and Snedeker (2005) is that native speakers based their judgments on number 95% of the time with object mass nouns although those nouns do not have plural marking. This finding indicates that native speakers treated object mass nouns such as furniture as countable entities or nouns that can be individuated.

As for L2 learners, the results illustrate that count syntax used with nouns traditionally referred to as count nouns (e.g. apple, pen) led learners to base their judgments on number 100% of the time. For mass nouns, they based their judgments on amount 98.33% of the time. Mass/count flexible items with count syntax (e.g. papers) was another category in which there was close to a 100% percent consensus since the participants based their judgments on number 93.33% of the time. The participants significantly differed from the native speakers in 2 groups of nouns that were tested: object mass nouns, and mass/count flexible items with mass syntax. In object mass nouns, L2 learners based their judgments on number 68.33% of the time and on amount 31.66% of the time. To be more specific, almost one third of the learners judged a big chair and a big table to be more than two small chairs and two small tables when asked ‘Who has more furniture?’.

Another difference was with respect to the interpretations of mass/count flexible items with mass syntax. In this domain, L2 learners based their judgments on number 43.33% of the time and on amount 56.66% of the time. This finding means that even in the absence of plural marking on such nouns, the L2 learners treated them as countable entities almost half of the time, a finding that provides a counter argument to what is revealed in L1 English.

To visualize the results better, the two figures below demonstrate the percentage of participants who chose amount (Figure 3) or number (Figure 4) as a response to ‘Who has more X?’.
5. Discussion

Revisiting the first research question regarding whether the quantity judgments of Turkish L2 learners of English align with that of native English speakers, we can say yes and no based on the different nouns tested. To be more specific, although the L2 learners’ responses overlapped with native speakers in substance mass, count, and mass/count flexible nouns with count syntax, striking differences were observed in the domains of object mass nouns and mass/count flexible nouns with mass syntax. Note that the differences in those domains may have been due to how plurality is marked in Turkish since a bare count noun in object position is unspecified for number and thus can have a plural interpretation in Turkish.
The second research question asked to what extent L2 learners base their quantity judgments on number or amount in evaluating the nouns tested. It has been revealed that with count nouns and mass/count flexible nouns with count syntax, L2 learners based their judgments on number while for substance mass nouns, they based their judgments on amount. Two cases that were not straightforward were the object mass nouns and mass/count flexible nouns with mass syntax, in which the learners sometimes based their judgments on amount but sometimes on number.

The question of whether L2 proficiency led to a more native-like interpretation of the types of nouns tested could not be investigated since the results were combined due to the low number of participants. The results provided some argument against the *Lexico-syntactic selection of individuation* (Barner and Snedeker, 2005) in illustrating that object mass nouns do not always have a count interpretation in L2 English. Regarding Pelletier’s (2012) argument that lexical nouns are both mass and count depending on the morphosyntactic features of the nouns, there is some support as well as an argument against it. Pelletier (2012) argues that count syntax (e.g. the use of plural marking) leads to a count interpretation whereas mass syntax forces a mass interpretation of the nouns. Although the results of the current study indicated that for L2 learners, plural marking forced a count interpretation, lack of plural marking in mass/count flexible nouns with mass syntax was also compatible with a count interpretation.

Wiese (2012) argues that nouns such as *furniture* and *footwear* are transnumerals, which do not need plurality for plural reference. In that sense, number marking is not compulsory to indicate reference to more than one thing. One of the findings supports Wiese’s (2012) account in the current study. In the domain of object mass nouns, it has been found that L2 learners sometimes treat items like *furniture* as count but at other times, as mass nouns.

Regarding the question about L1 transfer, we can argue that the results provide some support for the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1994, 1996). According to FTFA, the entire L1 grammar, with all lexical and functional categories, features and feature strength, constitutes the initial stage in the interlanguage. However, when properties of the L2 input cannot be accommodated by the L1 grammar, there is restructuring. It is hypothesized that based on the L2 input, the learners can acquire new parameter settings, functional categories, and feature values not instantiated in the L1. Even though nothing can be said about the initial state of the L2 learners since participants were only recruited from higher levels of L2 proficiency, there are clear indications that L1 transfer was at play even at advanced levels of L2 proficiency. The first piece of evidence substantiating L1 transfer can be seen in L2 learners’ treating object mass nouns such as *furniture* and *jewelry* in an inconsistent way as opposed to the native speakers. Another point that provides support for L1 transfer is L2 learners’ treatment of mass/count flexible nouns with mass syntax. L2 learners did not uniformly base their judgments on amount in this domain, which indicates that even in the absence of plural marking, they could individuate and assign a count interpretation to the nouns under investigation. Note that in the learners’ L1, it is possible to have a plural and thus an individuated interpretation of the nouns even in the absence of plural marking, which further provides support for language transfer in the conceptualization of those nouns in L2 English.

Although I argue that the participants in my study demonstrated L1 transfer in the domain of mass/count nouns, Choi, Ionin and Zhu (2018) provide experimental evidence from L2 learners of English from Chinese and Korean L1 backgrounds that L2 learners’ performance and judgments in mass/count nouns may not be due to L1 transfer, but rather to a semantic universal; atomicity. Choi, Ionin and Zhu (2018) employed two experiments in which the participants were tested on whether they supplied plural marking with count and mass nouns. The researchers show that learners tend to use plural marking significantly more with mass nouns that can be individuated such as furniture or footwear compared to nouns that cannot be individuated such as water. They refer to the former category of nouns as mass atomic nouns, and the latter as mass non-atomic nouns. Given that there is overt plural marking associated with atomicity in Korean but not in Mandarin, the researchers attribute the findings to the role of the semantic universal atomicity rather than L1 transfer. Choi, Ionin and Zhu’s (2018) new semantic universal is an interesting topic that should be further explored in other second language acquisition contexts with participants from different L1 backgrounds.
This study investigated the representation of mass/count noun distinction in L2 English in a quantity judgment task testing 5 different types of nouns. The main research question was whether the interpretations of Turkish L2 learners of English aligned with that of native English speakers. The results showed that the L2 learners’ treatment of substance mass nouns, count nouns and flexible mass/count nouns with count syntax was similar to how those nouns were conceptualized by native speakers. However, L2 learners significantly differed from the native speakers in object mass nouns, and mass/count flexible items with mass syntax. As pointed out earlier, in English grammar, the use of mass or count nouns affects the use of articles, plural marking and agreement. In that respect, the current study may account for L2 learners’ mistakes in their interlanguage development. To be more specific, such mistakes in the interlanguage development could be related to a more general, ontological issue about the nominal domain. However, it should also be noted that the morphosyntactic features of nouns, such as the use of plural marking, articles and determiners and whether and in what contexts those are obligatory also interact with mass and count nouns.

A further investigation based on the current study could include eliminating the linguistic cues that may have primed the participants to treat nouns as mass or count. Modifying the research design of Barner & Snedeker (2005), Scontras, Davidson, Deal and Murray (2017) found that including test items that asked participants ‘Who has more?’ rather than ‘Who has more X?’ led them to find different strategies such as value/utility comparisons or counting by contextually salient portions rather than basing their responses simply on number or amount in their quantity judgments. Such a change in research design may reveal whether L2 learners of English treat mass/count distinction as being mostly attributable to the inherent properties of nouns.

Yet another future research direction would be to investigate the phenomena described in this paper in the opposite direction or in a bi-directional study. That is, a similar design could be employed to investigate the representation of the different noun types in L2 Turkish to investigate not only the mass/count noun distinction in L2 Turkish, but also test the issue of L1 transfer in L2 acquisition of Turkish.

Finally, I believe that the current study and the findings connect up well with the theme of the 2017 Second Language Research Forum: ‘Growing connections in Second Language Research’. More specifically, the findings of the current study could enhance collaboration between linguists, applied linguists as well as language teachers. As stated earlier, object mass nouns such as silverware or mass/count flexible items with mass syntax such as rope were problematic for the learners. It could be argued that in both cases, the learners’ mis-conceptualization of the nouns under investigation stems from how plurality is expressed in Turkish as opposed to in English. First of all, pluralizing a noun like silverware leads to ungrammatical utterances in English. Such nouns cannot have a plural suffix even though they have an individuated reference. However, object mass nouns can still be pluralized in Turkish. Moreover, the lack of plural marking on mass/count flexible nouns is still compatible with an individuated reference in Turkish as opposed to in English. Thus, we can argue that the participants’ L1 clearly guided them to base their quantity judgments on how they conceptualize the nouns in the L2. In that respect, informed by the linguistic facts and findings of the current study, a good pedagogical practice would be for language teachers to emphasize the differences between students’ L1 and English and clearly articulate that plural reference in English is only possible when there is an overt plural marking on the noun. What is more, since the set of object mass nouns (i.e. silverware, furniture, footwear) is fairly limited in English, those nouns can be explicitly taught to students. To be more specific, language teachers could design activities to teach students that although these nouns always appear without plural marking, they refer to individuated and countable entities, but they are still used with mass syntax. Such explicit instruction in L2 English could potentially improve L2 learners’ use of plural morphology, number marking, and determiners, making them more confident language learners.

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3 Except for cases where the reference is to a group such as in the sentence Metallica was a popular band or to a kind as in the sentence The tiger is a mammal, in which the words a band and the tiger are construed as referring to plural entities despite lacking a plural marker.
References


Pelletier, Francis Jeffry. (2012). Lexical Nouns are Both +MASS and +COUNT, but They are Neither +MASS nor +COUNT. In Diane Massam (Ed.), *Count and mass across languages*. Oxford: Oxford University Press.


