Fake mass nouns and associative plurality*

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1. Introduction

A significant debate surrounds the mass-count distinction, with theories seeking to capture the crosslinguistic variation while maintaining a universal logical basis (e.g., Quine 1960, Bunt 1979, Link 1983, Borer 2005, Rothstein 2010, Landman 2011, 2016, Schwarzschild 2011, Grimm 2012, Chierchia 2010, 2021, Deal 2017). Unraveling how this variation operates is crucial for our understanding of the overall nature of nominal semantics.

One aspect of variation involves "fake mass nouns" such as *furniture*, which represent a misalignment issue.[1] On one had, such nouns are ontologically count in having well-defined atomic parts. For instance, furniture units involve countable entities such as tables, couches, chairs, etc. On the other hand, these nouns pattern with ontologically mass nouns by resisting pluralization and direct combination with numerals, as shown below:

(1) a. *furniture-s
    b. two pieces of furniture/*two furnitures

There is yet another aspect of variation regarding the mass-count distinction that has not been previously examined. In Turkish, *furniture*-type nouns cannot directly combine with numerals, aligning with typical fake mass behavior. However, they can be pluralized, setting them apart as outliers within the broader crosslinguistic picture. This paper aims to explain the distinct pattern in Turkish, building on the theory of fake mass nouns proposed in Chierchia (2021). The central contribution lies in analyzing plural fake mass nouns as an outcome of the so-called associative plurality —non-homogeneous plurality, typically occurring with proper names and kinship terms in Turkish.

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[1]Fake mass nouns are also commonly referred to as object mass nouns, among other terms, in the literature. The term "fake mass" is due to Chierchia (2010).

This paper is structured as follows: Section 2 discusses the crossinguistic variation in fake mass nouns and presents the core data in Turkish. Section 3 outlines Chierchia's theory. Section 4 presents the analysis of fake mass nouns. Section 5 is dedicated to further discussion. Section 6 concludes.

2. Where does Turkish stand?

Fake mass nouns exhibit variation at three distinct levels. First, lexical entries for this use differ among languages. For example, *luggage* or *jewelry* display a fake mass behavior in English while their counterparts in Italian, i.e., *bagagli* 'luggages', *gioielli* 'jewels', are count nouns. Conversely, the Italain *servitù* is a fake mass noun while the English counterpart *servants* is count (Chierchia 2021).

Second, fake mass nouns are only attested in number marking languages and are absent in generalized classifier languages like Mandarin, which lack a systematic number marking mechanism. Although it is debated whether the mass-count distinction is grammatically exhibited in such languages, this distinction is at least reflected in the choice of classifiers. Cheng and Sybesma (1999) show that the set of classifiers combining with ontologically count nouns differs from that of ontologically mass nouns. While the presence of fake mass nouns in such languages cannot be detected through direct combination with numerals or number marking, one could expect them to combine with classifiers that are only selective for ontologically mass nouns, not count classifiers. However, nouns like the Mandarin *jiau* 'furniture' are only compatible with count classifiers (Chierchia 2021).

And finally, only a subset of number marking languages have fake mass nouns. For example, Greek, a language systematically distinguishing between the singular and plural forms of nouns, lacks fake mass nouns all together (Tsoulas 2009).

Turkish, also a number marking language, presents a unique case within this crosslinguistic paradigm by featuring fake mass nouns that can also be pluralized. Before delving into this point, let us first see that Turkish grammatically distinguishes between count and mass nouns just like other number marking languages (Görgülü 2010, Sağ 2024).

As in English, Turkish count and mass nouns differ in combination with numerals. While count nouns can directly combine with numerals, mass nouns require an intervening quantizing noun, as exemplified below:

(2) a. iki kedi
two cat
'two cats'

b. iki #(damla) su
two drop water
'two drops of water'

One other distinguishing factor between count and mass nouns surfaces in the choice of quantificational determiners. For example, while count nouns require combination with *birkaç* 'a few', mass nouns are only compatible with *biraz* 'a little':

(3) a. birkaç/ *biraz kedi
a.few a.little cat
'a few cats'

b. biraz/ *birkaç kan
a.little a.few blood
'a little blood'

The mass-count distinction is also evident through plural marking in Turkish, though in a manner different from how this distinction is manifested in English-like languages. The pluralization of mass nouns is possible with an *abundance interpretation*, as shown in (4), a phenomenon also observed in Greek (e.g., Tsoulas 2009, Alexiadou 2011, Kane et al. 2015, Renans et al. 2018, Kouneli 2018 for Greek).

(4) Adam-ın burn-un-dan **kan(-lar)** akı-yor-du.
man-GEN nose-3SGPOSS-ABL blood-PL flow-IMPRF-PST
without PL: '(Some) blood was flowing from the man's nose.'
with PL: 'A lot of blood was flowing from the man's nose.' (Sağ 2024: 13)

This type of pluralization differs from the pluralization of mass nouns when they are coerced into count use, as in *two waters*, where the reference is to two containers of water. As in Greek, Turkish plural mass nouns retain their typical mass use, with the exception of contributing additional abundance information. Unlike in Greek, though, we cannot demonstrate their mass status through quantifier type and (in)compatibility with numerals, as these require the singular form of the noun in Turkish (see Tsoulas 2009, Kouneli 2018 for Greek). Nevertheless, the so-called count adjectives such as *round* are infelicitous with the plural form of mass nouns, as seen in (5), constituting evidence against count behavior.

(5) #Yere yuvarlak su(-lar) dökül-müş-tü.
on.the.ground round water-PL spill-PRF-PST
Intended: 'The floor was spilled with round portions of water.'

Turkish also has fake mass nouns as a third category of noun denotation, which involves borrowed words like *mobilya* 'furniture' and *bagaj* 'baggage', but primarily consists of compounds formed with *takım* 'team', such as *koltuk takımı* 'sofa set', *çatal-bıçak takımı* 'silverware', *nevresim takımı* 'linen sheet set', etc. These nouns exhibit mass behavior by allowing combination with mass quantifiers if the context supports a focus on the volume (test due to Barner and Snedeker (2005)). For example, (6) is felicitous in a moving context during a conversation with the renting agent while assessing the truck size needed.

(6) Biraz mobilya-mız var, çok değil.
a.little furniture-1SGPOSS have much not
We have a little furniture, not much.'

Furthermore, fake mass nouns require the intervention of *parça* 'piece' for combination with numerals and count quantifiers, as illustrated in (7).

(7) Yeni ev-imiz-e üç/ birkaç ??(parça) mobilya/ koltuk takım-ı
new house-1PLPOSS-DAT three a.few piece furniture sofa team-COMP
al-dı-k.
buy-PST-1PL

'We bought three/a few pieces of furniture/a sofa set for our new house.'[2]

Intriguingly, fake mass nouns pattern with count nouns by allowing pluralization without inducing an abundance or a sub-type inference, as shown in (8a). The regular and plural forms differ in compatibility with distributivity, with the plural-marked form exhibiting count behavior and the singular form displaying mass-like characteristics, as shown in (8b).

(8) a. Mobilya**(-lar)**-ımız/ Koltuk takım**(-lar)**-ımız bugün teslim ed-il-ecek.
furniture-PL-1PLPOSS sofa team-PL-1PLPOSS today deliver-PASS-FUT
'Our furniture/sofa set will be delivered today.'

b. Mobilya***(-lar)**-ınız/ Koltuk takım***(-lar)**-ınız birbiri-yle çok
furniture-PL-2PLPOSS sofa team-PL-2PLPOSS each.other-with very
uyumlu görün-üyor.
compatible seem-IMPRF
'The pieces of your furniture/sofa set seem very compatible with each other.'

In summary, Turkish displays a three-way classification of noun denotations, with its fake mass nouns allowing pluralization.

3. Types of number marking and fake mass nouns

Chierchia (2021) provides a theoretical framework to account for the presence of fake mass nouns in certain number marking languages while also explaining the three-level variation in their crosslinguistic patterns discussed above. In this section, I summarize this account, which also lays the groundwork for investigating the unique pattern of Turkish fake mass nouns from a theoretical perspective.

Chierchia's theory posits that the existence of fake mass nouns in a language is contingent upon whether singular morphology is defined on *stable* atomicity.

The lack of stable atomicity is linked to *vagueness*. According to Chierchia (2010), the minimal components of mass nouns are specified vaguely, where being vague means that $P_w(u)$ is undefined for some u's. Worlds are partially ordered relative to 'standards of precision'. A world w' is a precisification of w, i.e., $w \propto w'$, iff for any natural property P, $P_w \subseteq P_{w'}$. Precisifications of a world w (i.e., $\{w' : w \propto w'\}$) are worlds in which the vagueness of each property P is monotonically resolved (partially or totally), by sharpening the criteria for having P. That is, some things for which P is undefined in w, get to be assigned to the positive or negative extension of P in w'.

This view provides us a with a means of defining count and mass properties based on type of atomicity (cf. Quine 1960, Bunt 1979, Link 1983, Borer 2005, Rothstein 2010, Landman 2011, 2016, Schwarzschild 2011, Grimm 2012, a.o.). Count noun denotation involves stable atoms. Formally, a property P is *count* iff for any mimimal/base-world w

[2]Some native speakers find *birkaç mobilya* acceptable, but I have not encountered any who find *birkaç koltuk takımı* to be grammatical in the sense of 'a few pieces of a sofa set' (it is acceptable in the sense of 'a few sofa sets'). However, direct combination with numerals is highly degraded regardless of the noun.

with respect to standards of precision, any precisification w' of w, and any u such that $AT(P)(w)(u) = 1, AT(P)(w')(u) = 1$. For example, the *cat* property is count because any cat-atom in a base-world w is a cat-atom in any precisification of w.

Conversely, a property is mass iff it is not count. That is, mass noun denotation has unstable atoms; the atoms in a base-world w might be aggregates in some precisification of w. For example, the *water* property is mass because a very small water amount can be viewed as the sum of two smaller water amounts in some precisification world.

In Chierchia's view, languages differ in the definedness conditions of number morphology. In English, singular (SG) marking is defined on stably atomic (**AT**) properties, and plural (PL) marking is defined on the sum-closure of **AT** properties. This is illustrated in (9), where $\mathbf{AT}(P)$ 'extracts' from P the stable P-atoms. A P is stably atomic iff $\mathbf{AT}(P) = P$. On the other hand, in Greek, SG-marking checks for the lack of sum-closure of stably or non-stably atomic (AT) properties, while PL-marking simply checks for sum-closure. This is shown in (10), where $\mathrm{AT}(P)$ extracts from P the (stable or unstable) P-atoms, namely the generator set of a P. A P is atomic iff $\mathrm{AT}(P) = P$.

(9) *English number marking*

a. $\mathrm{SG} = \lambda P : \mathbf{AT}(P) = P.\ P$

b. $\mathrm{PL} = \lambda P : {}^*\mathbf{AT}(P) = P.\ P$

(10) *Greek number marking*

a. $\mathrm{SG} = \lambda P : \mathrm{AT}(P) = P.\ P$

b. $\mathrm{PL} = \lambda P : {}^*\mathrm{AT}(P) = P.\ P$

Assuming numerals are uniformly defined on $\mathbf{AT}(P)$, mass nouns cannot combine with numerals in both English and Greek. However, given that number marking is insensitive to stable atomicity in Greek, mass nouns can be marked as singular since SG is defined on the generator set of a mass property. Mass nouns can also be marked as plural, which is possible due to PL being defined on the sum-closure of the generator set of a mass property. However, plural-marked mass nouns have an abundance inference in Greek, as shown in (11), which Chierchia, following Kane et al. (2015) and Renans et al. (2018), takes to be an implicature due to singular and plural-marked forms entering into a competition.

(11) Trehoun **nera** apo to tavani.
drip.3PL water.PL.NEUT.NOM from the ceiling.NEUT.SG
'(A lot of) water is dripping from the ceiling.' (Tsoulas 2009: 133)

In English, since number marking is sensitive to stable atomicity, a repair strategy is employed to ensure number marking with mass nouns. More precisely, a singulative (SGL) operator —a function defined on mass properties —is activated, resulting in the SG-marking of mass nouns, as illustrated in (12) (due to Giorgio Magri).

(12) $\mathrm{SGL} = \lambda P : P \in \mathrm{MASS}.\ \lambda w.\lambda x.\ P_w \neq \emptyset \wedge x = \oplus P_w$

$\mathrm{SGL}(P)$ is true of just the maximal entity of which P is true. For example, assume P equals $\{a, b, a \oplus b\}$, then $\mathrm{SGL}(P)$ is $\{a \oplus b\}$. The result is a singleton set, and thus stably

atomic.[3] Since SGL(P) is true of at most *one* entity in any w, it is incompatible with numerals. SGL(P) is also a sum-closed property and this makes further pluralization on mass nouns trivial in English-type languages under the assumption that trivial application of morpho-semantic operators are dis-preferred.

Chierchia claims that fake mass nouns are type-theoretic transformation of some ontologically count properties as mass through the SGL function and thus they are predicted to exist only in languages where the singular morphology is defined on stable atoms (cf. Doetjes 1997, Barner and Snedeker 2005, Rothstein 2010, Landman 2011, Grimm 2012, Deal 2017, a.o.). In languages like English, the SGL function extends to a culturally defined subset of sum-closed properties of stably atomic entities, as shown in (13). This wider application of SGL results in the class of nouns that behave like mass nouns while intrinsically bearing count characteristics at the cognitive level. Based on this view, the derivation of the noun *furniture* is schematized, as in (14).

(13) SGL = $\lambda P : P \in \text{MASS} \wedge D.\ \lambda w.\lambda x.\ P_w \neq \emptyset \wedge x = \oplus P_w$, where D is a subset of $^*\mathbf{AT}(P)$

(14) $\text{SG}(\text{SGL}(\{a, b, c, ..., a \oplus b \oplus c\})) = \text{SG}(\{a \oplus b \oplus c\}) \Rightarrow$ *furniture*

Classifier languages lack fake mass nouns as they do not have a differential number marking mechanism. Greek also lacks them (Tsoulas 2009) since its singular marking is insensitive to stable atomicity. In other words, there is no motivation for the singulative mechanism to be activated in these types of languages.

In Greek, nouns like *epiplo* 'furniture' and *ασημικό* 'silverware' cannot collectively refer to individual pieces of furniture and silverware respectively, for which plural forms of these nouns are used. For example, in a context where a table, two chairs, and a sofa will be delivered, only (15a) is felicitous since the singular form *epiplo* is used to refer to a single unit of furniture, as shown in (15b). Additionally, such nouns allow direct combination with numerals and count quantifiers, as seen in (16) (p.c. Anastasia Tsilia).

(15) a. Ta epipla tha ftasoun avrio.
the.PL furniture.PL FUT arrive.PRF.3PL tomorrow
'The (multiple pieces of) furniture will arrive tomorrow.'

b. To epiplo tha ftasi avrio.
the.SG furniture.SG FUT arrive.PRF.3SG tomorrow
'The single piece of furniture will arrive tomorrow.'

(16) Agorasame tria/ merika epipla jia to kenurio mas spiti.
bought.2PL three a.few furniture.PL for DET new.NEUT our house
'We bought three/a few pieces of furniture for our new house.'

[3] Chierchia (2021) entertains the notion of 'relative atomicity' for this. An individual x is an atom relative to P in w iff no other individual of which P is true in w is a proper part of x. Based on this definition, the singleton set $\{a \oplus b\}$ is relatively atomic because its member has no proper parts, which are also in P.

These patterns clearly demonstrate a contrast with *furniture*-type nouns in English, and thus constitute evidence that Greek does not feature a class of fake mass nouns.

In sum, we have seen that there are two types of number marking languages in Chierchia's system: English-type languages where number marking is defined on stable atomicity, and Greek-type languages where number marking is insensitive to the type of atomicity. Crucially, fake mass nouns are argued to exist only in the former type of languages, where the singulative function is operative. If this typology is exclusive, we predict that languages with plural mass nouns should lack fake mass nouns. This raises two pivotal questions: (i) How does Turkish feature fake mass nouns, in contrast to Greek? (ii) How is plural marking with fake mass nouns possible in Turkish, as opposed to languages like English?

4. The Analysis

In this section, I address the questions raised above by extending the typological possibilities of the current framework. My analysis has two key components: First, I propose that Turkish exhibits a mixed number marking system that combines elements of both English-type and Greek-type languages. Second, I attribute the pluralization of fake mass nouns in Turkish to associative plural marking, a feature that distinguishes Turkish from these languages. In what follows, I first explain how the Turkish pattern is derived in contrast to English and Greek-type languages and then move on to a comparison with English.

4.1 A mixed number marking system

Turkish reconciles its seemingly discrepant behavior within Chierchia's framework, by utilizing singular marking based on stable atomicity, akin to English, and plural marking that relies on sum-closure, similar to Greek (cf. Martí 2020, Scontras 2022, Sağ 2022, 2024):

(17) *Turkish number marking*

a. $\text{SG} = \lambda P : \mathbf{AT}(P) = P.\ P$

b. $\text{PL} = \lambda P : {}^{*}\text{AT}(P) = P.\ P$

As a consequence of employing an English-like pattern in singular morphology, the SGL function is active in Turkish, allowing mass nouns to be marked with SG. The active status of this function also accounts for the existence of fake mass nouns in Turkish, since the idea that SGL can be extended to some sum-closed properties of stably atomic entities naturally applies to Turkish as well. Conversely, the Greek-like aspect of Turkish makes the pluralization of mass nouns also possible. The abundance inference associated with them can be attributed to a competition between the SG-marked and PL-marked forms, similar to what is observed in Greek, though we will discuss this further in Section 5.

The fact that Turkish contrasts with Greek in featuring fake mass nouns despite also allowing plural mass nouns is then explained through the proposed mixed number system. We now need to address how the pluralization of fake mass nouns is possible in Turkish, unlike in English-type languages.

4.2 Fake mass nouns are associative plurals

I propose that Turkish exhibits a more permissive pattern as it features a distinct type of plural marking, namely associative plurality. Generally speaking, this type of plurals denotes non-homogenous pluralities involving a core individual x and other individuals associated with it, where x is usually the referent of a person's name or a kinship term (Moravcsik 2003). For instance, the Turkish plural term in (18), involving a proper name, refers to Ayberk and his associates who have a contextually determined relation to Ayberk.

(18) Ayberk-ler
Ayberk-PL
'Ayberk and his associates' (e.g., Ayberk and his friends)

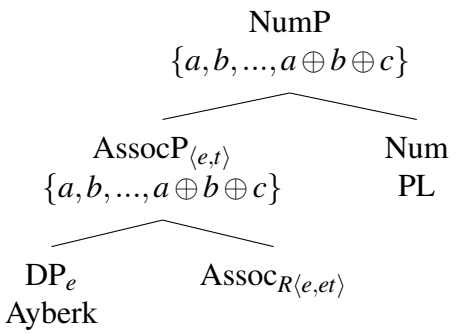
Associative plurality is available only with a subset of referential expressions in Turkish (Göksel and Kerslake 2005, Görgülü 2011, Dikmen 2021). It does not apply to property-denoting nouns, as evidenced by the fact that only the possessive form gives rise to the associative interpretation with kinship nouns, as shown in (19a). In contrast, if the plural precedes the possessive form, it yields a regular (additive) plural interpretation, as in (19b).

(19) a. amca-m-**lar**
uncle-1SGPOSS-PL
'my uncle and his associates'

b. amca-**lar**-ım
uncle-PL-1SGPOSS
'my uncles'

Dikmen (2021) analyzes Turkish associative plurals as a product of a (null) Associative Phrase (AssocP) and plural marking (cf. den Besten 1996, Moravcsik 2003, Nakanishi and Tomioka 2004, Vassilieva 2005, Tatsumi 2017, Smith 2020, Hucklebridge 2023). Drawing on this view, the structure of (18) is represented as in (20) within our framework.[4]

(20)



The Assoc head takes the individual type proper name as its argument and returns a set inclusive of the referent of the name, i.e., Ayberk, his associates (let's assume his friends Bilge and Cem), and the pluralities of these individuals (where a = Ayberk, b and c = Bilge

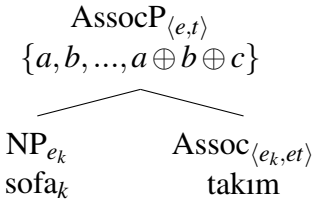
[4] Associative plurals could alternatively involve the morpheme, *gil-*, which may optionally be followed by the plural marker *-lAr*, e.g., *Ayberk-gil(-ler)*. While the exact nature of *gil-* is unclear at this point, it could potentially be an overt counterpart of the null Assoc head, providing further support for Dikmen's analysis.

and Cem). Denoting a sum-closed property, the denotation of AssocP is marked as plural via the PL morpheme inserted under the Num head. The NumP then undergoes covert *iota* type-shifting, which returns the maximal plurality in the set, i.e., $a \oplus b \oplus c$.[5]

I analyze Turkish fake mass nouns as also involving an AssocP projection in their structure. Recall that fake mass nouns, except for the borrowed forms, are compounds, as in *koltuk takımı* 'sofa set', formed via *takım*, which can roughly be translated into English as 'team/set/group'. Let us analyze *takım* as the Assoc head, with a semantics as given in (21).

(21) $[\![takım]\!] = \lambda x_k.\ {}^*\lambda x.\ \exists y,z \in D\ [[x = y \vee x = z] \wedge belong\text{-}to(y,x_k) \wedge R_A(y)(z) \wedge y \neq z]]$, where D is a subset of $\mathbf{AT}(P)$

Given that associative plurality is applicable to referential nouns only, I assume that the complement of *takım* is a singular kind term that refers to a unique kind individual. The Assoc function then takes a singular kind individual and returns a sum-closed P generated with a member of the kind and individuals that stand in a contextually-supplied associative relation R_A with it.[6] For example, as schematized in (22), *koltuk takımı* is an AssocP that denotes a sum-closed set generated by a sofa (a) and two armchairs (b and c).

(22)


As for borrowed fake mass nouns like *mobilya* 'furniture', I conjecture that they directly spell-out AssocP, assuming a Distributed Morphology-based framework, where vocabulary items can spell-out complex syntactic structures (due to Halle and Marantz 1993).

There are two ways to utilize an associatively plural set. One strategy involves activating the SGL function and marking the phrase as singular, as shown in (23a). The other strategy is to directly mark the sum-closed set as plural, as in (23b).

(23) a. SG(SGL(AssocP)) ⇒ *koltuk takımı* 'sofa set'
b. PL(AssocP) ⇒ *koltuk takım**ları*** 'sofa set+PL'

As shown in Section 2, singular fake mass nouns exhibit a mass-like behavior by disallowing direct combination with numerals and count quantifiers. In contrast, plural fake mass nouns display count characteristics; they are compatible with distributive elements such as reciprocals, contrasting with the singular form, as repeated for *koltuk takımı* below:

[5]Dikmen's analysis slightly differs from what is illustrated in (20). He analyzes the plural marker as denoting the sum-closure operator, while here it is a partial identity function, applying above sum-closure. Additionally, Dikmen assumes a null D projection above the NumP. I adopt a covert type-shifting approach.

[6]I represent the relation formed between a singular kind and the object-level individuals associated with as a *belong-to* relation, following Sağ's (2022) analysis of singular kind terms.

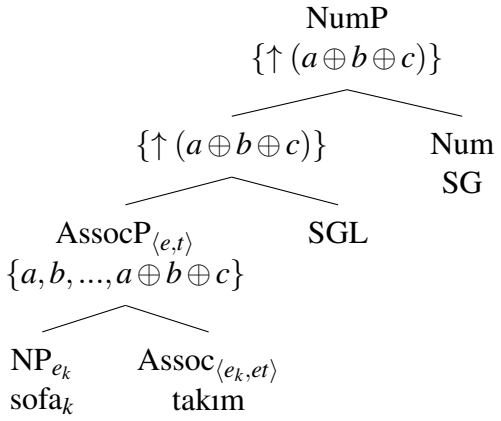
(24) Koltuk takım***(-lar)**-ınız birbiri-yle çok uyumlu görün-üyor.
sofa team-PL-2PLPOSS each.other-with very compatible seem-IMPRF
'The pieces of your sofa set seem very compatible with each other.'[7]

Chierchia's implementation of the SGL function does not rule out distributivity with SG-marked fake mass nouns because the result of SGL(AssocP) is a set whose member is a plurality of stable atoms (e.g., $\{a \oplus b \oplus c\}$). This individual is expected to allow distributivity down to its atomic parts, contrary to the facts. Building on the fact that group terms are incompatible with distributive elements due to their impure atomic nature (Landman 1989), I take SGL to return the group individual corresponding to the maximal plurality of a sum-closed P, as revised in (25).

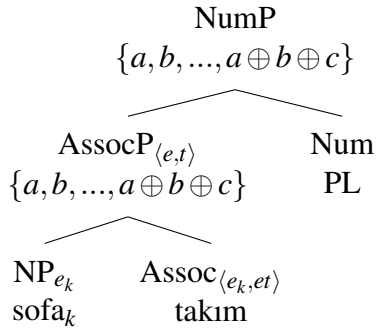
(25) SGL (revised) = $\lambda P : P \in \text{MASS} \wedge D.\ \lambda w.\lambda x.\ P_w \neq \emptyset \wedge x = \uparrow(\oplus P_w)$, where D is a subset of $^*\mathbf{AT}(P)$

Based on this view, the derivations of singular and plural fake mass nouns are as illustrated below:

(26) *koltuk takımı* 'sofa set'



(27) *koltuk takım**lar**ı* 'sofa set+PL'



To sum up, singular and plural fake mass nouns end up receiving distinct denotations, though both involve an associative phrase structure at their core. Ultimately, we have a plural set on one hand and a singleton of a group individual on the other. The divergence lies in the availability of two different number marking strategies to them. While there is nothing unordinary about PL-marking of a sum-closed set, the pressure from the SG-marking strategy, which activates the singulative function, results in the "fake mass" behavior we are familiar with in English-like number marking languages.

[7] Fake mass nouns have lexical counterparts where, instead of *takım*, the borrowed forms *grup* 'group' or *set* 'set' are used, e.g., *çatal-bıçak seti* (cf. with *çatal-bıçak takımı*) 'silverware'. Crucially, these forms do not allow pluralization as observed in (24). The plural form, *çatal-bıçak set-ler-i*, could only refer to multiple silverware sets. While the compounds with *takım* could also yield this reading, the inability of *çatal-bıçak set-ler-i* to refer to individual pieces of silverware shows the inherently group-like nature of such forms, unlike compounds with *takım*, which denote sum-closed properties at the level of AssocP. Thus, I analyze only *takım* as an overt Assoc head and do not treat *grup* and *set* as alternative Assoc forms.

4.3 Turkish vs. English fake mass nouns

Having dedicated the availability of plural marking for Turkish fake mass nouns to associative plurality, I now turn to the contrast between Turkish and English in terms of number marking with fake mass nouns. While fake mass nouns, in general, represent non-homogenous pluralities (e.g., furniture units involve a sofa, a table, chairs, etc.), English fake mass nouns do not involve plural marking. The difference between Turkish and English-like languages lies in whether associative plurality goes beyond a representation at the lexical level to have a correspondence at the level of grammar.

Turkish features associative phrase projection in its syntax, which, generating non-homogenous plural properties compositionally, makes plural marking possible with them. Due to the availability of SGL, AssocP can also be marked as singular, with the plural and singular marked forms yielding different denotations.

English, however, does not feature this phenomenon at the grammatical level and thus fake mass nouns do not involve AssocP in their structure. Nouns like *furniture* then spell-out a structure where an NP, which denotes a non-homogeneously sum-closed property, undergoes the SGL function, as illustrated in (28). Since applying further sum-closure to the result of SGL yields the same denotation, plural marking is trivial. Therefore, English fake mass nouns are restricted to singular marking.

(28) a. $\text{SGL}(*\mathbf{AT}(P)) \Rightarrow$ *furniture*
b. $[\![furniture]\!] = \{\uparrow (a \oplus b \oplus c)\}$

5. On abundance inference

In this section, I briefly discuss the abundance inference arising with plural mass nouns and the fact that it is not observed with plural fake mass nouns in Turkish. Above, I tentatively suggested that this inference could be a pragmatic effect arising from competition between the singular and plural forms, similar to claims about Greek plural mass nouns, for which Kane et al. (2015) and Renans et al. (2018) offer a scalar implicature-based account. While I refer the reader to these works for details on the exact mechanism behind this, let us first expand on the potential to extend this view to Turkish plural mass nouns.

A quick test for the implicature account is to check whether the abundance reading arises in downward-entailing environments, as implicatures typically vanish in these contexts. Renans et al. (2018) provide experimental evidence that in Greek, the abundance inference disappears in negative contexts. In Turkish, however, the judgments are subtle. For example, as a native speaker, I tend to judge the sentence in (29) as both false and true if there is only a little snow in front of the house. It is false because the sentence implies the house is not covered with snow, but at the same time it is true in the sense that there is not a lot of snow in front of the house.

(29) Ev-imiz-in önü kar-lar-la kaplı değil.
house-2PLPOSS-GEN front snow-PL-WITH covered not
'The front part of our house is not covered with snow."

Given the subtleties in judgments and the potential differences in implicature mechanisms, it is essential to conduct thorough experimental research to verify whether the abundance inference in Turkish plural mass nouns is similar to those in Greek. This is particularly intriguing as Turkish plural count nouns have experimentally been shown to have an inclusive/number neutral denotation, with the multiplicity inference arising as an implicature in Renans et al. (2020) (see also Sağ 2022).

If the scalar implicature analysis turns out not to apply to Turkish, at least two alternative accounts could be considered: The observed abundance reading could be a type of conventional implicature associated with the plural form of mass nouns. Alternatively, the plural marking on mass nouns could be different from the one of count nouns, as proposed in Alexiadou (2011) and Kouneli (2018) for Greek.[8]

Nevertheless, while an implicature account could potentially be applicable for plural mass nouns, it is not surprising that no abundance inference arises with plural fake mass nouns. The singulative strategy and plural marking yield distinct denotations for singular and plural-marked forms. Since one form exhibits mass-like behavior and the other count behavior, unlike SG and PL-marked mass nouns, which are both mass, competition between the two forms of fake mass nouns might be unfeasible.

6. Conclusion

This study has explored the distinctive pattern of Turkish fake mass nouns, which, in addition to exhibiting typical fake mass behavior, also allow plural marking. By positioning Turkish within a mixed number marking system and incorporating the phenomenon of associative plurality, I have explained how Turkish differs from other number marking languages, exhibiting more permissive number marking possibilities.

My analysis indicates that Turkish fake mass nouns involve an associative phrase structure, which, by compositionally deriving a non-homogeneously sum-closed set, supports the mechanism leading to fake mass interpretation, while also making plural marking possible. The difference with English-like languages that lack plural fake mass nouns arises from how associative plurality is represented, extending beyond the lexical level to function within grammar. Ultimately, this study offers a novel perspective on the mass-count distinction by unraveling the role of associative plurality in shaping nominal semantics.

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[8]On a related note, this phenomenon is observed in Turkish with nouns such as *water, blood, snow, sand, mud,* and *rice* typically when they occur with predicates like *flow, drip, gather, scatter, drink, full of, fill*, etc., as also noted for Greek in Tsoulas (2009) and Alexiadou (2011). Plural mass nouns in Turkish also give rise to a "disorderly scattered amount" interpretation (Sağ 2024), as discussed for Greek in Kouneli (2018). Thus, any account seeking to explain the phenomenon of plural mass nouns must also consider these factors.

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