Fake Mass Nouns and Associative Plurality

A significant debate surrounds the count/mass distinction, with theories seeking to capture variation while maintaining a universal logical basis (Link 1983; Rothstein 2010; Schwarzschild 2011; Grimm 2012, a.o.). One aspect of variation involves "fake mass nouns", which are ontologically count but mimic mass nouns by resisting pluralization and direct combination with numerals. This study contributes to the ongoing debate by showing that Turkish fake mass nouns can be pluralized, a phenomenon we attribute to associative plurality.

Types of Number Marking and Fake Mass Nouns. Variation in fake mass nouns occurs at three levels: (i) lexical entries for this use vary among languages, (ii) they are absent in classifier languages lacking systematic number marking, and (iii) only a subset of number marking languages allows them; e.g. Greek lacks fake mass nouns, unlike many languages like English. Chierchia (2021) dedicates the presence of fake mass nouns to singular morphology defined on *stable* atomicity. The lack of stable atomicity is linked to vagueness, where $P_w(u)$ is undefined for some u's. In essence, being non-count entails that what might qualify as the smallest P-sample in a base world w might be an aggregate (a sum of smaller P-samples) in some precisification of w, i.e. $\{w' \colon w \propto w'\}$ (worlds in which the vagueness of each P is resolved in a monotonic way, assigning things undefined in w to either the positive or negative extension of P in w'). A property P is count iff for any base-world w, any precisification w' of w and any u: $AT(P)(w)(u) = 1$, $AT(P)(w')(u) = 1$. E.g. the *cat* P is count since any cat-atom in a base-world w is a cat-atom in any w', unlike the *water* P. That is, the *cat* P is stably atomic, while the *water* P is non-stably atomic.

Languages differ in the definedness conditions of number morphology. In English, singular (SG) marking is defined on stably atomic (**AT**) properties, and plural (PL) on sum-closure of **AT** Ps (1). In Greek, SG checks the lack of sum-closure of (stably or non-stably) atomic (AT) properties, while PL checks sum-closure (2).

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

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

Assuming numerals are uniformly defined on **AT**(P), mass nouns cannot combine with numerals in both English and Greek. However, since number marking is insensitive to stable atomicity in Greek, mass nouns can be marked both SG (defined on the generator set of a non-stably atomic P) and PL (defined on the sum-closure of this set). PL-marked mass nouns have an abundance inference, which Chierchia, following Renans et al (2018), takes to be an implicature due to SG and PL-marked forms entering into a competition. In English, since number marking is sensitive to stable atomicity, mass nouns can only be marked SG, activating a singulative (SGL) function defined on mass properties. SGL(P) is true of just the maximal entity of which P is true. (E.g., P = $\{a, b, a \oplus b\}$, then SGL(P) = $\{a \oplus b\}$) The result is a singleton set, and thus stably atomic. 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 P, making further pluralization on mass nouns trivial in English-type languages.

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

Chierchia claims that fake mass nouns are type-theoretic re-dressing of some ontologically count Ps as mass through SGL and thus predicted to exist only in languages where SG is defined on stable atoms. In languages like English, SGL extends to a culturally defined subset of sum-closed, stably atomic properties, yielding fake mass nouns. Classifier languages lack them due to the lack of differential number marking mechanism. Greek also lacks them (Tsoulas 2009) since its SG marking is insensitive to stable atomicity (no SGL). In short, Chierchia's account suggests that languages with plural mass nouns should lack fake mass nouns.

Turkish as an outlier. Turkish has three classes of nouns (count, mass, and fake mass), but it allows the pluralization of both mass and fake mass nouns, challenging Chierchia's account. As in English, Turkish count and mass nouns differ in combination with numerals and the choice of quantificational determiners [(4a) & (4b)]. But Turkish mass nouns can also be pluralized with an abundance inference, as in Greek (5):

(4) a. iki kedi/ bir kaç kedi
'two cats/a few cats'

b. iki #(damla) su/ biraz su
'two drops of water/ a little water'

(5) Burnundan **kan(-lar)** akıyordu. 'Blood (no PL)/ A lot of blood (with PL) was flowing from her nose.'

Turkish fake mass nouns involve borrowed words like *mobilya* 'furniture,' *bagaj* 'baggage,' but most of them are compounds with *takım* 'team': *koltuk takımı* 'sofa group,' *çatal-bıçak takımı* 'silverware' etc. They allow mass quantification (6b) but require *parça* 'piece' for combination with numerals and count quantifiers (6a). They can also be pluralized without inducing an abundance (or sub-type) inference (7a). Regular and plural forms differ in compatibility with distributivity, with the PL-marked form exhibiting count behavior (7b):

(6) a. iki/ bir kaç #(parça) mobilya
two a few piece furniture
'two/a few pieces of furniture'

b. Biraz mobilya-mız var.
a.little furniture-1PLPOSS have
'We have a little furniture.' (moving context)

(7) a. Mobilya**(-lar)**-ımız/ Koltuk takım**(-lar)**-ımız bugün teslim edil-ecek.
furniture-PL-1PLPOSS sofa team-PL-1PLPOSS today deliver-FUT
'Our furniture/sofa group will be delivered today.'

b. Mobilya***(-lar)**-ınız/ Koltuk takım***(-lar)**-ınız birbiri-yle çok uyumlu ol-muş.
furniture-PL-2PLPOSS sofa team-PL-2PLPOSS each.other-with very compatible be-EVID
'The pieces of your furniture/sofa group are very compatible with each other.'

Analysis. We propose that Turkish reconciles its seemingly discrepant behavior within Chierchia's framework, exhibiting a mixed number marking system (cf. Martí 2020; Scontras 2022): (i) SG marking mirrors English by relying on stable atomicity (1a), and thus activates SGL, which results in SG-marking of mass nouns and the existence of fake mass nouns. (ii) PL marking, akin to Greek, checks for sum-closure (2b), also enabling pluralization of mass nouns with an abundance implicature. Turkish differs from English in allowing plural fake mass nouns, which we analyze as an outcome of associative plural marking.

Turkish features associative plurality with a subset of referential expressions: with proper names and kinship nouns in possessive form, e.g. *Ahmet-ler* 'Ahmet and his associate(s)', *amcam-lar* 'my uncle and his associate(s) (Göksel & Kerslake 2005, Görgülü 2011, Dikmen 2021). Following Dikmen (2021) in taking associative plurality to be a product of a (null) Associative Phrase (AssocP) and plural marking (cf. Moravcsik 2003, Vassilieva 2005), we propose that Turkish fake mass nouns involve AssocP in their structure: [AssocP [DP Assoc]]. Since most fake mass nouns are compounds involving it, we analyze *takım* as the Assoc head. It takes a singular kind individual (given that associative plurality requires referential arguments) and returns a sum-closed P generated with a member of the kind ($belong\text{-}to(y, x_k)$) and individuals that stand in an associative relation R_A with it (adopting Sağ's (2022) account of singular kinds).

(8) $[\![\text{takım}]\!] = \lambda x_k.\ {}^*\lambda x.\ \exists y, z\ [[x = y \vee x = z]\ \wedge\ belong\text{-}to(y, x_k) \wedge R_A(z, y) \wedge y \neq z]]$

$[_{AssocP}\ [[_{DP}\ \text{koltuk}_k]\ [_{Assoc}\ \text{takımı}]]]$ denotes a sum-closed set of stably atomic individuals of a sofa y and individuals z that are associates of y, e.g. a set generated with a sofa (a) and two armchairs (b, c) = $\{a, b, ..., a \oplus b \oplus c\}$. (We take borrowed words like *mobilya* to directly spell-out AssocP assuming a Distributed Morphology-based framework.) There are two ways of utilizing this set: (i) activating SGL and marking it SG, yielding mass-like behavior as in English, and (ii) directly marking it PL, yielding a count behavior, allowing distributivity. Chierchia's implementation of SGL results in SGL(AssocP) to denote a set of a plurality of stable atoms, and thus does not rule out distributivity with SG-marked fake mass nouns. We suggest that SGL instead returns the group corresponding to the maximal plurality of a sum-closed P:

(9) koltuk takımı: SG(SGL(AssocP)) = $\{\uparrow (a \oplus b \oplus c)\}$; koltuk takım**ları**: PL(AssocP) = $\{a, b, ..., a \oplus b \oplus c\}$

(10) SGL (revised) = $\lambda P.\ \lambda w.\lambda x.\ P_w \neq \emptyset \wedge x = \uparrow (\oplus P_w)$ (defined on Mass Ps and a subset of ***AT**(P))

Predictions. English fake mass nouns cannot be PL-marked for English lacks associative plurality. Nouns like *furniture* are not AssocPs, but lexically sum-closed Ps that undergo SGL, restricting them to SG marking. Since SGL(P) is true of at most one entity in any w, its sum-closure, and thus PL marking, is trivial with (fake) mass nouns. In Turkish, SGL and PL are both available for fake mass nouns, yielding distinct denotations for SG and PL-marked forms. As one form has a mass-like behavior while the other is count, unlike SG and PL-marked mass nouns (both mass), a competition between the two forms of fake mass nouns might be unfeasible. Therefore, it is unsurprising that no abundance inference arises with the PL form.