

Object mass nouns and subkind countability

Kurt Erbach
Universität Bonn
erbach@uni-duesseldorf.de

Aviv Schoenfeld
Tel Aviv University
schoenfeld@mail.tau.ac.il

1 March, 2021; Word count: 8289

Abstract. We argue for a novel cross-linguistic definition of object mass nouns—e.g. *furniture*, *equipment*—that accommodates the novel observation that some can combine with numerals to count subkinds. We present novel data from Hungarian, where certain object mass nouns can combine directly with numerals to count subkinds but not objects—e.g. *három sportruházat* ('three sportswear') can refer to three kinds of sportswear but not three pieces of sportswear. This is unexpected, given that the inability to count subkinds is a property of object mass nouns in English (Cowper & Hall 2012, Rothstein 2017, Grimm & Levin 2017, Sutton & Filip 2018). This requires a novel definition of object mass nouns, which has implications for how they are identified across languages.

Keywords: object mass nouns, subkinds, countability, subkind reading, taxonomic reading

1. Introduction

To get to the heart of a linguistic category, its cross-linguistic properties must be teased apart from its language-specific ones. This paper is about the category of object mass nouns—e.g. *equipment*, *furniture*—which Erbach (2020) identifies across languages via the properties that (i) they are mass nouns that (ii) refer to objects. That these nouns are mass is seen via a number of combinatorial properties, such as (1) not combining directly with numerals to count discrete objects, and (2) not combining directly with determiners like *every* and *several* (Rothstein 2010).

(1) * three furniture(s) [Intended: 'three pieces of furniture']

(2) * every/several furniture(s)

That object mass nouns refer to objects despite the infelicity in (1)-(2) was empirically demonstrated by Barner & Snedeker (2005), who showed that they are judged according to the cardinality of discrete objects referred to in quantity comparison tasks, while other mass nouns—e.g. *mustard*, *toothpaste*—are judged according to the perceived volume. Erbach (2020) used these properties to identify object mass nouns in the typologically distinct languages of Greek, Hungarian, and Japanese.

A crucial omission of Erbach (2020) is that object mass nouns in English cannot combine directly with numerals to count subkinds, but substance mass nouns can—e.g. *three juices: apple, orange, and grape*—(references in Section 2.3).¹ A pertinent question is whether this property extends across languages, along with the two aforementioned properties.

We give a negative answer with novel data from Hungarian, wherein certain object mass nouns can combine directly with numerals to count subkinds. Thus, subkind-uncountability is not a crosslinguistic property of object mass nouns, and it can be maintained that the sole cross-linguistic properties are (i) the inability to count objects that (ii) are nevertheless semantically accessible (e.g. in cardinality comparison). As will be discussed in Section 5, this has implications for previous analyses of the subkind-uncountability of object mass nouns in English (Grimm & Levin 2017, Sutton & Filip 2018), and the cross-linguistic identification of object mass nouns.

2. Background

This section begins by detailing the properties of object mass nouns by reviewing the research on English, where this category has been most widely studied. What will be seen in Section 2.1 is that their primary properties are (i) grammatically mass behavior, and (ii) reference to discrete individuals (i.e. ‘objects’) in certain semantic tests. In Section 2.2, we will review the state of the art of research on object mass nouns in Hungarian. In Section 2.3, another property of object mass nouns in English will be discussed, namely that they cannot count subkinds, thereby suggesting a third way of distinguishing them from substance mass nouns.

2.1 The primary properties of object mass nouns

The class of object mass nouns is one of several notional classes that make the mass/count distinction particularly challenging to capture formally (Chierchia 1998a, 2010; Rothstein 2010; Landman 2011; Sutton & Filip 2016). Most canonical mass nouns—e.g. *mud, juice, water*—refer to substances, and these nouns are identified as mass because certain instances of the substances cannot be counted without some sort of specified quantity (3).

- (3) a. There were a few #(spots of) mud on my jeans.
b. I cleaned many #(drops of) juice off of the table.
c. I stepped in two #(puddles of) water.

In tandem with (3), canonical mass nouns can count subkinds and certain quantities (4)—e.g. *water* can count servings of water, bodies of water, samples of water and kinds of water.

¹ Additional nouns with a mass interpretation that can receive a subkind interpretation are the abstract *virtue* (Carlson 1980:§7.6.1), *emotion* (Gillon 1999) and *crime* (Grimm 2016).

- (4)
- a. We ordered two waters, a juice and a Corona light.
 - b. Lake Constance is actually two waters that are separated by a peninsula.
 - c. The two waters that showed greatest divergence between chemical and biological recovery both lay in close proximity within the strongly acidified region of Galloway. (Bray 2013)
 - d. The USP monograph lists two waters that are prepared in bulk form: Purified Water (PW) [...] and Water for Injection (WFI).
[servings, bodies of water, samples or kinds]²

Object mass nouns—e.g. *equipment, furniture, clothing*—likewise need some sort of specified quantity to count objects (5), although the same objects can be counted with count nouns—e.g. *tools, chairs, shirts* (6).

- (5)
- a. There were a few #(containers of) equipment in the truck.
 - b. I cleaned many #(pieces of) furniture after the flood.
 - c. I washed two #(piles of) clothing.
- (6)
- a. There were a few tools in the truck.
 - b. I cleaned many chairs after the flood.
 - c. I washed two shirts.

What makes object mass nouns challenging is that despite behaving like mass nouns grammatically, they refer to discrete objects as opposed to substances. We use *object* and *substance* as technical terms distinguishing types of entities with distinct spatio-temporal properties. These types of entities have been known to be distinguishable by pre-linguistic children since at least Soja et al. (1991), where two-year-old children learned novel names for novel objects and non-solid substances, and were found to extend the names for objects to entities of the same shape and number, while names for non-solid substances were extended not to entities of the same shape and number, but to entities of the same material.

While Soja et al. (1991) established objects and substances as distinct pre-linguistic concepts, Barner & Snedeker (2005) established that object mass nouns are semantically distinct from substance mass nouns. In their study, they showed participants two quantities of the same entity, one larger in volume and the other larger in cardinality of discrete objects, and participants were asked “Who has more X,” where X was the noun referring to the entities being shown. What was found is that substance mass nouns—e.g. *mustard, toothpaste*—were judged in terms of volume rather than cardinality of discrete instances, while object mass nouns—e.g. *furniture, silverware*—were judged in terms of cardinality of objects, not volume. In their analysis, object mass nouns are semantically encoded with an individuation operation that distinguishes countable objects, while substance mass nouns are not.

² (a), (b) and (d) were retrieved on September 24 2020 from
<https://www.yelp.com/menu/la-tapatia-martinez-5/item/chimichanga>
<https://www.bodensee.de/en/experience/sports-and-action/explore-nature-on-foot-on-lake-constance>
<http://www.processandwater.com/water-faqs/>

In addition to cardinality comparison, it has also been observed that object mass nouns are modifiable by “stubbornly distributive predicates”—i.e. size and shape adjectives like *round*, *long*, and *large*—while substance mass nouns are not (McCawley 1975, Rothstein 2010, Schwarzschild 2011). Following these studies, it has been implicit in the literature that the distinguishing properties of object mass nouns are (i) they are genuine mass nouns, meaning that they cannot occur in count morphosyntax (e.g. they cannot be directly modified by numerals), and (ii) they are distinguished from substance mass nouns in referring to objects that are accessible to cardinality comparison and stubbornly distributive predicates. As mentioned above, Erbach (2020) takes these as the means for identifying object mass nouns across languages, including Greek (Alexiadou 2015), Japanese (Erbach et al. 2017, 2019), and Hungarian (Erbach 2019), the latter of which will be discussed in Section 2.2. The state of the art for characterizing object mass nouns is summarized in (7) and is implemented on Hungarian in the next subsection.

- (7) Object mass nouns are distinct from
- a. count nouns in the ability to occur in count morphosyntax.
 - b. substance mass nouns in the ability to
 - i. compare via cardinality of objects
 - ii. combine with stubbornly distributive predicates.

2.2 Object mass nouns in Hungarian

Recently, the nominal system of Hungarian has garnered much attention because it has unit specifying “classifiers” that are optional for a large number of nouns (Csirmaz & Dékány 2014, Schvarcz & Rothstein 2017, Erbach et al. 2019). In counting constructions, count nouns can compose directly with numerals or a classifier can be used, and nouns are not plural-marked in these contexts.

- (8) (Csirmaz & Dékány 2014, p. 150)
- a. hét (fej) saláta
seven CL_{head} lettuce
'seven lettuces'
 - b. hét (szem) cukor
seven CL_{eye} candy
'seven pieces of candy'
 - c. hét (szál) gyertya
seven CL_{thread} candle
'seven candles'

Two competing analyses for (8) have different implications for object mass nouns in Hungarian. One analysis is that the nouns in (8) have both a strictly singular, countable denotation which combines with numerals, and an object mass denotation which is made countable via composition with classifiers (Rothstein 2017, Schvarcz & Rothstein 2017). Under this analysis, every object-denoting noun that can be counted with classifiers (which is the vast majority

object-denoting nouns) has an object mass denotation in addition to a count denotation. The alternative analysis is that these nouns are unambiguously number-neutral, referring to singular, countable individuals and sums thereof (Farkas & de Swart 2010, Erbach et al. 2019), thereby explaining the lack of plural marking in counting constructions. To account for the optional classifiers, Erbach et al. (2019) propose that the function of overt classifiers is to restrict counting to a particular sort—e.g. combining *fej* ('head') with *saláta* ('lettuce') restricts the counting to heads of lettuce, but combining *féle* ('kind') restricts the counting to kinds of lettuce. If Erbach et al. (2019) is accepted, then fewer nouns in Hungarian have object mass denotations. Whichever analysis is accepted, it is crucial that some nouns unambiguously have an object mass denotation. Three such nouns are presented next, and more are given in Section 3.1.

Following the analysis of Erbach et al. (2019), Erbach (2019) has elicited from consultants three nouns that unambiguously have object mass denotations: *Lőszer* ('ammunition'), *felszerelés* ('equipment'), and *csomagolás* ('packaging'). They cannot count objects in count morphosyntax such as direct composition with numerals, the WH-quantifier *hány* ('how many'), and plural morphology (9), thereby showing that they are mass nouns.

- (9) (Erbach 2019, pp. 130-131)
- a. Három #(darab) lőszert számoltam.
 three piece ammunition.ACC count.1SG.PST
 'I counted three pieces of ammunition.'
 - b. #Hány felszerelés van a táskádban?
 how.many equipment be.there DEF bag.POSS.2SG
 #'How many equipment are in your bag?'
 - c. #csomagolás-ak
 packaging-PL
 #'packagings'

Next, Erbach (2019) used contexts like that in (10), which elicit comparisons in terms of cardinality, to show that the nouns refer to objects despite the infelicity in (9).

- (10) (Erbach 2019, p. 131)
- a. Alex has three 9mm bullets for his pistol and Charlie has two 12-gauge shotgun shells.
 - b. Ki rendelkezik több lőszerrel?
 who have-3SG more ammunition
 'Who has more ammunition?'

Because *lőszer* ('ammunition'), *felszerelés* ('equipment'), and *csomagolás* ('packaging') are mass nouns that receive cardinality based judgments in quantity comparison tasks, Erbach (2019) concludes that they unambiguously have object mass denotations. What remains unknown following this investigation is (i) whether additional such nouns exist, and (ii) whether they share all of the properties of object mass nouns in English. Two such properties were presented in Section 2.1, and the next subsection presents a third one.

2.3 Object mass nouns and the subkind reading in English

This section presents a property of object mass nouns in English that pertains to the subkind reading (Carlson 1980:§6.1, §7.6.1), also known as the taxonomic reading (Krifka et al. 1995:§1.3.3). This reading is part of the instance-subkind ambiguity, which is proposed to be exhibited by *bird*, *weapon*, *wine*, *emotion* (Gillon 1999:§3.1) and *crime* (Grimm 2016) (11).

- | | | | |
|------|----|---|-----------------|
| (11) | a. | i. <u>Moses the raven</u> is a bird . | <i>instance</i> |
| | | ii. <u>Ravens</u> are a bird . | <i>subkind</i> |
| | b. | i. <u>Napoleon's sword</u> is a weapon . | <i>instance</i> |
| | | ii. <u>Swords</u> are a weapon . | <i>subkind</i> |
| | c. | i. <u>The liquid in this glass</u> is wine . | <i>instance</i> |
| | | ii. <u>Merlot</u> is a wine . | <i>subkind</i> |
| | d. | i. <u>My love of semantics</u> is an emotion . | <i>instance</i> |
| | | ii. <u>Love</u> is an emotion . | <i>subkind</i> |
| | e. | i. <u>Cain's murder of Abel</u> is a crime . | <i>instance</i> |
| | | ii. <u>Murder</u> is a crime . | <i>subkind</i> |

As early as Jespersen (1954:§5.211), it is noted in the countability literature that nouns that are assumed to be basically uncountable can, in fact, count subkinds (Baker 1978:§10, fn.1, Pelletier & Schubert 2002, Chierchia 1998a:ex.10, 2010:ex.10, Doetjes 2012:§4.1). Put differently, nouns with the subkind reading can occur in (perhaps) any count morphosyntax, as (12) shows with *wine*. For present purposes, it suffices to think of count morphosyntax as a set of contexts that affect the interpretation of the noun in a certain, countable way. Put differently, by “*wine* with count morphosyntax”, we mean what Koslicki (1999) means by “count-occurrence of *wine*.”

- | | | | |
|------|----|------------------------------------|-----------------------------------|
| (12) | a. | Merlot is a wine. | <i>(a)n N_{SG}</i> |
| | b. | Merlot is one wine that I like. | <i>one N_{SG}</i> |
| | c. | Merlot and cabernet are two wines. | <i>two N_{PL}</i> |
| | d. | Both wines are widespread. | <i>both N_{PL}</i> |
| | e. | Several wines are widespread. | <i>several N_{PL}</i> |
| | f. | A number of wines are widespread | <i>a number of N_{PL}</i> |
| | g. | Each wine is widespread. | <i>each N_{SG}</i> |
| | h. | Every wine is widespread. | <i>every N_{SG}</i> |

While the subkind reading is available to *wine*, *emotion* and *crime*, it is not available to object mass nouns in English (13). Thus, these nouns are a counterexample to Pelletier & Schubert (2002) writing that “there seems to always be a count sense (or use) for every (alleged) mass expression *M* which means *kind of M*” (p.20), as is echoed in Chierchia (2010:ex.10) and Doetjes (2012:§4.1). Indeed, this hypothesized universality belies Bunt’s (1985:11) term of the universal sorter. However, it is noted as early as Cowper & Hall (2012) that object mass nouns are counterexamples (they mention *furniture*, *footwear* and *equipment*); (13) is based on their example 8, and similar

contrasts are reported in Rothstein (2017:§4, ex.45) and analyzed by Sutton & Filip (2018:§4.1). The inability of object mass nouns to count subkinds is also analyzed by Grimm & Levin (2017).

- (13) a. If there's one * (kind of) furniture I can't stand, it's bunk beds.
b. Of all the {* furnitures, kinds of furniture} in the world, it's bunk beds.

In (13), *furniture* is compared to *kind of furniture*. One can also compare object mass nouns to count counterparts (if they exist), as Sutton & Filip (2018:ex.5) do with *vehicle-transport* (14).

- (14) The brief [...] is to produce four {vehicles, * transports} ranging in size from the Ford Fiesta to the Vauxhall Cavalier.

In light of (13)-(14), an additional property of object mass nouns in English is that they cannot count subkinds. This is puzzling, given that this ability is afforded to count nouns like *vehicle* and mass nouns like *wine*, *emotion* and *crime*. Thus, perhaps (7b) in the cross-linguistic characterization of object mass nouns should be refined to accommodate this property (15b.iii).

- (15) Object mass nouns are distinct from
a. count nouns in the ability to occur in count morphosyntax.
b. substance mass nouns in
i. the ability to compare via cardinality or objects.
ii. the ability to combine with stubbornly distributive predicates.
iii. the inability to count subkinds.

Before adopting (15), one should check whether (15b.iii) has the same putative cross-linguistic status as (i)-(ii). It is precisely this question that we give a negative answer to with novel data from Hungarian in Section 3, meaning that (15) should not replace (7). In this way, we disqualify (15b.iii) from being a universal property of object mass nouns, thus contributing to the consolidation of this category.

3. Data

Elicitation sessions with native speaking Hungarian consultants were used to aggregate data on the subkind reading of object mass nouns in Hungarian. Consultants provided judgments on felicity conditions and contexts of use for the target nouns and the sentences constructed with them, following the methodology for semantic fieldwork of Mathewson (2004). Section 3.1 details how, following Erbach (2019), these nouns were determined to be object mass nouns, and Section 3.2 shows that they can count subkinds.

3.1 Testing for object mass nouns in Hungarian

The 14 nouns in (16) were found via elicitation and were targeted because they notionally refer to collections or groups of artifacts that share a common function or purpose. Attempts were made to elicit an additional 11 nouns, but no fitting nouns could be recalled by the consultant for the referents in question (e.g. bakeware, beachwear).

(16)	ruházat	(`apparel')	ágynemű	(`bedding')
	aprópénz	(`change')	porcelán	(`china')
	üvegáru	(`glassware')	áru	(`merchandise')
	műanyagáru	(`plasticware')	sportruházat	(`sportswear')
	horgászfelszerelés	(`fishing) tackle')	papírmunka	(`paperwork')
	készlet	(`stock')	műalkotás	(`artwork')
	cserépedény	(`crocery')	leltár	(`inventory')

The first 11 nouns in (16) were found to be mass nouns according to data gathered in elicitation with the consultants using the following morphosyntactic tests: direct counting (17), composition with the plural morpheme (18), and composition with the count WH-quantifier *hány* ('how many') (19). Because these nouns were found to not felicitously refer to objects in these morphosyntactic contexts, we conclude that they are encoded as mass.

- (17) a. #Három papírmunka-t számoltam.
three paperwork-ACC count.1SG.PST
Intended: 'I counted three pieces of paperwork.'
- b. #Három sportruházat számoltam.
three sportswear-ACC count.1SG.PST
Intended: 'I counted three pieces of sportswear.'
- c. #Három horgászfelszerelés-t számoltam.
three tackle-ACC count.1SG.PST
Intended: 'I counted three pieces of tackle.'
- (18) a. #Hány készlet van?
how.many stock be.there
Intended: 'How many pieces of stock do you have?'
- b. #Hány ágynemű van?
how.many bedding be.there
Intended: 'How many pieces of bedding do you have?'
- c. #Hány aprópénz van?
how.many change be.there
Intended: 'How many pieces of change do you have?'

- (19) a. #A porcelán-ak drágák.
the porcelain-PL expensive
Intended: 'The pieces of porcelain are expensive.'
- b. #A üvegáru-k drágák.
the glassware-PL expensive
Intended: 'The pieces of glassware are expensive.'
- c. #A áru-k drágák.
the merchandise-PL expensive
Intended: 'The pieces of merchandise are expensive.'

To test whether the nouns in (16) refer to individuated objects despite the infelicity in (17)-(19), we provided consultants with contexts in which they were asked to compare two sets of entities that can be referred to by the same noun. One set in each pair contained a larger cardinality of entities, and the other contained a larger volume of entities.

- (20) a. [Context: The shipment to H&M contains 50 sweaters and 50 pairs of jeans, while the shipment to Desigual contains 60 t-shirts and 50 pairs of jeans]
Kinek van több ruházat?
who.ACC have more apparel
'Who has more apparel?'
- b. [Context: Max has three 200-mL containers, and Shannon has one two-liter container.]
Kinek van több műanyagáru?
who.ACC have more plasticware
'Who has more plasticware?'

The consultants made several observations about the available dimensions of comparison for certain nouns. First, it made the most sense to one consultant to compare *papírmunka* ('paperwork') in terms of the amount of work required rather than the number or volume of the documents or sheets of paper. Second, in addition to comparisons in terms of cardinality, *aprópénz* ('change'), *áru* ('merchandise'), and *készlet* ('stock') could just as naturally be compared in terms of monetary value. For the other nouns, no dimensions of comparison were volunteered other than cardinality. With the exception of *papírmunka* ('paperwork'), the fact that the 11 nouns cannot refer to objects in count morphosyntax indicates that they are mass nouns, but they can be compared in terms of cardinality, so we classify them as object mass nouns.

The next subsection argues that a select number of object mass nouns in Hungarian can count subkinds to the same extent as (near-)synonymous count nouns (in contrast to the English object mass nouns discussed in Section 2.3).

3.2 The subkind reading of object mass nouns in Hungarian

To test the availability of the subkind reading to object mass nouns in Hungarian, we constructed a series of sentences in contexts which consultants were asked to judge the naturalness of. Consultants were also asked to judge the sentences with (near-)synonymous count nouns. While

synonymy is not perfect (Wisniewski et al. 1996, Casey 1997), we ensured that both (near-)synonyms can refer to the entities in the contexts.

Áru ('merchandise'), *műanyagáru* ('plasticware') and *ágynemű* ('bedding') and *készlet* ('stock') were removed from the test set because satisfactory corresponding count nouns were not found. *Felszerelés* ('equipment') and *csomagolás* ('packaging') were not added to this round of testing for the same reason. These nouns can be compared to counterparts with *féle* ('kind of'), but the comparison to count counterparts controls for the intervening factor that *féle* blocks reference to objects. As a result, *féle lőszer* ('kind of ammunition') is expected to be preferred over *lőszer* ('ammunition') when referring to subkinds, but this does not arise when comparing *lőszer* ('ammunition') to *golyó* ('bullet'). We also removed *sportruházat* ('sportswear') and *horgászfelszerelés* ('fishing equipment') due to being compounds, meaning they test for the same things as their object mass stems, and we added *lőszer* ('ammunition') to this round of testing. In sum, we tested the three pairs in (21), and found that both count and object mass nouns are natural, felicitous, and true in contexts of referring to subkinds.

- | | | | | | |
|------|----|---------|----------------|---------|-------------|
| (21) | a. | lőszer | ('ammunition') | golyó | ('bullet') |
| | b. | ruházat | ('apparel') | ruha | ('garment') |
| | c. | üvegáru | ('glassware') | poharat | ('glass') |

To elicit naturalness judgments of the pairs in (21), the nouns were presented in contexts where a shop-owner is asked which items are available. Beginning with *lőszer* ('ammunition') and *golyó* ('bullet'), (22)-(23) shows that both can count subkinds without the mediation of *féle* ('kind of'), though both sentences are improved by it (probably due to its disambiguating effect).

- (22) Három lőszert nem árulok: üreges golyókat, lágypontos
 three ammunition.ACC not sell.1SG hollow.point bullet.PL.ACC, soft.point
 golyókat és légvédelmi golyókat
 bullet.PL.ACC, and anti.aircraft bullet.PL.ACC
 'I do not sell three kinds of ammunition: hollow-point bullets, soft-point bullets, and
 anti-aircraft bullets.'

- (23) Három golyót nem árulok: üreges golyókat, lágypontos golyókat
 three bullet.ACC not sell.1SG hollow.point bullet.PL.ACC, soft.point bullet.PL.ACC,
 és légvédelmi golyókat
 and anti.aircraft bullet.PL.ACC
 'I do not sell three kinds of ammunition: hollow-point bullets, soft-point bullets, and
 anti-aircraft bullets.'

Parallel to *lőszer* ('ammunition') and *golyó* ('bullet'), both *ruháza* ('apparel') and *ruhá* ('garment') can count subkinds in (24)-(25) without *féle* ('kind of'), though again it improves the sentences.

(24) Két ruházatot nem árulok: bőrnadrágot és selyeminget.
 two apparel not sell.1SG leather.pant and silk.shirt
 'I do not sell two kinds of apparel: leather pants and silk shirts.'

(25) Két ruhát nem árulok: bőrnadrágot és selyeminget.
 two garment not sell.1SG leather.pant and silk.shirt
 'I do not sell two kinds of garments: leather pants and silk shirts.'

In both aforementioned pairs, the consultants judged that the object mass nouns, *lőszert* ('ammunition') and *ruházat* ('apparel'), were not only natural but marginally better than the respective count nouns *golyót* ('bullet') and *ruhát* ('garment'). This is in stark contrast to English, where *transports* is much worse than *vehicles* for counting subkinds, and *furniture* and others cannot count subkinds at all (Section 2.3).

Lastly, *üvegáru* ('glassware') and *pohara* ('glass') were also judged as natural in (26)-(27), though this time the count noun *pohara* ('glass') was judged as marginally better than *üvegáru* ('glassware'). As before, both sentences are improved with *féle* ('kind of'), though ultimately it was not deemed necessary for naturalness.

(26) Egy üvegárut nem árulok: martinis poharat.
 one glassware.ACC not sell.1SG martini glass
 'I do not sell one kind of glassware: martini glasses.'

(27) Egy poharat nem árulok: martinis poharat.
 one glass.ACC not sell.1SG martini glass
 'I do not sell one kind of glass: martini glasses.'

In conclusion, this investigation into the ability of object mass nouns in Hungarian to count subkinds finds that *lőszert* ('ammunition'), *ruháza* ('apparel'), and *üvegáru* ('glassware') can naturally be used to count subkinds without modifiers like *féle* ('kind of'), even though they cannot count objects. The other nouns in (28) were not checked (because satisfactory corresponding count nouns were not found), and the work of Carlson (1980) raises the possibility that some might not be able to count subkinds, as discussed in the next paragraph.

(28)	felszerelés	('equipment')	ruházat	('apparel')
	csomagolás	('packaging')	ágynemű	('bedding')
	porcelán	('porcelain')	műanyagáru	('plasticware')
	sportruházat	('sportswear')	horgászfelszerelés	('fishing tackle')

Carlson (1980) interprets the contrasts in (29) as indicating that the following nouns lack the subkind reading: *gas-well*, *airport*, *ball-bearing* and *courage*.

- (29) (Carlson 1980, §6-7)
- Every {mineral, ? gas-well} is in short supply.
 - Which {plant, ? airport} is the most widespread?
 - Three {cars, ? ball-bearings} are made in five different countries.
 - many {virtues, ? courages}

Carlson (1980) proposes that the odd nouns in (29) lack the subkind reading for him because he does not know nouns that name subkinds, and he hypothesizes that *ball-bearings* would be acceptable in (29c) for speakers who know nouns for kinds of ball-bearings, e.g. care manufacturers (p.206). Thus, some nouns in (28) might turn out to lack the subkind reading for the same reason. Therefore, we do not expect all object mass nouns in Hungarian to be able to count subkinds, but the main takeaway is that some reliably can, meaning that subkind-uncountability is not a universal property of object mass nouns.

4. Implications

Given Section 3.1, we surmise that Hungarian has at least 10 nouns that uncontroversially display the two defining properties of object mass nouns, namely demonstrating mass noun behavior in count morphosyntax and being comparable in terms of cardinality of discrete objects. Thus, (30) adds to the three nouns identified by Erbach (2019) that unambiguously have an object mass noun denotation.

(30)	lőszer	(`ammunition')	felszerelés	(`equipment')
	csomagolás	(`packaging')	ruházat	(`apparel')
	ágynemű	(`bedding')	porcelán	(`porcelán')
	üvegáru	(`glassware')	műanyagáru	(`plasticware')
	sportruházat	(`sportswear')	horgászfelszerelés	(`fishing tackle')

Three other nouns, namely *aprópénz* (`change'), *áru* (`merchandise'), and *készlet* (`stock'), seem to be object mass as well, though they elicit comparison judgments in terms of both cardinality and monetary value. Since these nouns exhibit the key properties of object mass nouns, they can arguably be classified as such. Lastly, while *papírmunka* (`paperwork') is a mass noun, it fails to elicit comparison in terms of cardinality, so it cannot be surmised that it refers to individuated objects in the same sense as the other nouns. Other tests for object reference might prove otherwise, e.g. compatibility with stubbornly distributive predicates like *big*, but we leave this to future research.

Regarding the number of object mass nouns in Hungarian, the question arises of the extent to which this fits the theory of Erbach (2020), according to which the number of object mass nouns is related to the amount of mass/count morphosyntax in the language. In particular, English has both a large number of object mass nouns (upwards of 50) and a large amount of mass/count morphosyntax, while Hungarian, Greek, and Japanese have fewer object mass nouns (2-3 each in Erbach 2019) and less mass/count morphosyntax. While the number of known object mass nouns

in Hungarian is now at least three times what it was in Erbach (2019), this number is still considerably small compared to English (roughly one-fifth), and thus it might still be compatible with Erbach (2020).

Next, given the ability of the object mass nouns in (22)-(27) to count subkinds, we see that they differ from their English counterparts (31).

- (31) a. I do not sell three {bullets/#ammunition(s)}: hollow-point bullets, soft-point bullets, and anti-aircraft bullets.
b. I do not sell two {garments/#apparel(s)}: leather pants and silk shirts.
c. I do not sell one {glass/#glasswear}: martini glasses.

The sentences in (22)-(27) clearly show that the object mass nouns in Hungarian can count subkinds without overtly specifying reference to subkinds with morphemes like *féle* ('kind'), *típus* ('type') or *fajta* ('kind'). While *pohara* ('glass') was judged as marginally better than *üvegáru* ('glassware') when counting subkinds, the fact that the opposite is true of *lőszer* ('ammunition'), *ruháza* ('apparel') points to the general unmarkedness of the subkind reading of these nouns.

On the aforementioned assumptions, these Hungarian nouns are object mass nouns that can count subkinds. This is neither predicted nor excluded from the analyses of Hungarian of Erbach et al. (2019) and Schvarcz & Rothstein (2017). Moreover, under the latter analysis, nouns with object mass denotations are assumed to also have a count denotation—as is assumed to be the case for *cukor* ('candy'), for example, given data like (8)—and such a count denotation could be argued to be the source of subkind countability. However, because we have shown that the object mass nouns in (30) have no count denotation, the subkind readings in (22), (24), and (26), cannot be attributed to a singular count denotation. Most importantly, subkind-uncountability is not a universal property of object mass nouns, rather our data suggests that it is a language-specific property, which raises the question of what underlies this putative difference between English and Hungarian.

Relevantly, Chierchia (1998b, 2015) shows that across languages, certain properties of nominal systems are correlated. For example, Chierchia (2015) argues that whether a language can have object mass nouns depends on whether singular nouns in the language are required to denote stable atoms. Similarly, Chierchia (1998b) has argued that the types of nominal reference in English, Italian, and Mandarin give rise to the patterns of use of plural morphology, articles, and classifiers. That is, English nouns are both predicates (e.g. *chairs*, *furniture*) and arguments (e.g. *chair*), Italian nouns are exclusively arguments, and Mandarin nouns are exclusively predicates, which is proposed to correlate with the following: English has plural morphology and definite articles to turn singular arguments into predicates, Italian generally requires all nouns to occur with plural morphology or articles, and Mandarin lacks general articles and plural morphology. Following Chierchia (1998b, 2015), one might speculate that a difference between the English and Hungarian nominal systems allows object mass nouns to count subkinds in the latter but not the former. It is premature to speculate based on two languages, but the upcoming discussion of Japanese and Brazilian Portuguese licenses the speculation at the end of the section.

Another approach to account for the difference in subkind-countability between English and Hungarian would be within the work on reference to subkinds of Carlson (1980) or Krifka et al. (1995). However, the review of subkind-denoting NPs of Krifka et al. (1995, §1.3.3) (what they call

taxonomic kind-referring NPs) does not make claims as specific as whether object mass nouns should be able to count subkinds. Also, Carlson (1980) does not provide an obvious answer to why e.g. *furniture* cannot count subkinds, given that the subkinds are named by nouns (e.g. *chair*). Perhaps this is why quite specific theories have been proposed to explain the subkind-uncountability of object mass nouns in English—e.g. Grimm & Levin (2017) and Sutton & Filip (2018).

The central idea of Grimm & Levin (2017) is that object mass nouns in English do not head taxonomies in the sense of Murphy (2002). For example, *mail* does not head a taxonomy because the extensions of nouns that name kinds of mail (e.g. *letter*) are not necessarily subsets of the extension of *mail*. Put differently, not every letter is mail, as is the case for a letter in a museum (which is not mail due to not being a candidate for being delivered). Similarly, not every bullet is ammunition, as is the case for a bullet in a museum (which is not a candidate for being loaded into a weapon). To maintain the idea that counting subkinds is licensed by heading a taxonomy, one should demonstrate that *lőszer* ('ammunition') heads a taxonomy. This would be the case if the extensions of nouns in Hungarian that name kinds of ammunition were subsets of the extension of *lőszer* ('ammunition'). For example, there should be a counterpart of *bullet* that is only applicable to bullets that are candidates to being loaded into weapons. However, we observe cases of bullets in museums that are called *golyó* ('bullet')³ and *lövedék* ('projectile'),⁴ so a different strategy might be needed to extend Grimm & Levin's (2017) analysis.

Next, the central idea of Sutton & Filip (2018) is that object mass nouns, unlike count nouns and substance mass nouns, cannot refer to subkinds because of an unresolvable overlap between subkinds in a given level of categorization. More specifically, they assume that when mass nouns like *rice* are composed with numerals, what is enumerated are disjoint subkinds: basmati, jasmine, arborio, etc., where no instance of one subkind is also an instance of another. By contrast, kinds of furniture in the same level of categorization overlap, e.g. office furniture, bedroom furniture and living room furniture overlap in a particular chair that belongs to all three rooms. Likewise, it is proposed that kinds of transport cannot be extracted for the purpose of enumeration with direct numerical modification of *transport* because they overlap in a given level of categorization. However, the (near-)synonym *vehicle* can count subkinds since, as a count noun, it is assumed to be encoded with a specific counting schema, which forces entities that realize more than one subkind to be only realizing one subkind in the particular context of use.

While the proposal of Sutton & Filip (2018) holds for English, it is not immediately clear why overlapping subkinds of object mass nouns can be resolved in Hungarian but not English. The analysis in Sutton and Filip (2018) might be extended in two ways. First, Hungarian but not English has a null modifier synonymous with expressions like *típus* ('type') or *fajta* ('kind'), which, following Sutton & Filip's (2018) analysis of *kind of*, is capable of resolving the overlap by forcing entities that realize more than one subkind to only realize one subkind in the particular context of

³ Retrieved on February 24 2021 from https://mult-kor.hu/20111020_amputalt_labak_es_a_lincoln_eletet_kiolto_golyo_az_uj_marylandi_muzeumba

⁴ Retrieved on February 24 2021 from https://militaria.hu/hadtorteneti-intezet-es-muzeum/hadtorteneti-muzeum/targyi-gyujtemenyi-osztaly/los_zergyujtemeny

use. However, such a difference in the existence of a null modifier should be supported with independent empirical evidence. Alternatively, Sutton & Filip (2018) might be extended by assuming that the denotation of Hungarian object mass nouns includes a specific counting schema, which enforces a disjoint interpretation of the subkind structure, as is the case for *vehicle*. However, this counting schema cannot also apply to the denotational structure of instances, otherwise Hungarian object mass nouns would not exist. Again, a reason for why this particular encoding should occur in Hungarian is not immediately clear. In sum, the extensions of Sutton & Filip (2018) require an unexplained difference between Hungarian and English, meaning that they would lack the power to predict whether a given language’s object mass nouns should be able to count subkinds.

A further implication of this research is that it can shed light on data that was previously considered problematic. For example, Erbach (2019) writes that there is some question as to whether the Japanese *chōri-ki* (‘kitchenware’) is an object mass noun. In particular, participants in a questionnaire-based study judged as infelicitous a sentence where *chōri-ki* (‘kitchenware’) refers to objects and occurs in count morphosyntax, suggesting that it is a mass noun. However, this categorization is challenged by the finding that *chōri-ki* can count objects if their number equals the number of kinds (32). The preceding discussion sheds new light on this data in suggesting that it is not objects that are counted, but subkinds. Thanks to the precedent that certain object mass nouns in Hungarian can count subkinds, the felicitous interpretation of (32) does not prevent *chōri-ki* from being categorized as an object mass noun.

- (32) *Japanese* (Erbach 2019: ex. 7.37)
 mi-tsu no chōri-ki
 three-CL GEN kitchenware
 #‘three kitchenwares’
 #(chopping board, two knives)
 ✓ (chopping board, knife, mixing bowl)

Keeping in mind that certain object mass nouns in Hungarian can count subkinds, the findings of Erbach (2019) can straightforwardly be reinterpreted. The simplest explanation is that *chōri-ki* (‘kitchenware’) is an object mass noun that can count subkinds. Nevertheless, the evidence for the existence of object mass nouns in Japanese and their ability to count subkinds is somewhat nascent, and needs further research.

As demonstrated with the Hungarian and Japanese data, a primary implication of this research is that object and subkind countability should be considered independently. To illustrate, Pires de Oliveira & Rothstein (2020) characterize *mobília* (‘furniture’) as a mass noun that can be compared in terms of cardinality (33) (or other dimensions depending on the context).

- (33) *Brazilian Portuguese* (Pires de Oliveira & Rothstein 2020)
 João tem mais mobília que a Maria.
 João have.3SG.PRS more furniture than the Maria
 ✓ ‘João has more pieces of furniture than Maria.’

While it is implied that Pires de Oliveira & Rothstein (2020) strictly consider object-countability, which presumably underlies the infelicity in (34) (Braga et al. 2010), they do not report whether *mobília* ('furniture') can count subkinds.

- (34) *Brazilian Portuguese* (Braga et al. 2010)
?? Comprei duas mobílias hoje.
buy.1SG.PST two.FEM furniture.PL today
'I bought two furnitures today.'

To illustrate the importance of distinguishing between object and subkind countability, we have an indication from Roberta Pires de Oliveira (p.c.) that *mobília* ('furniture') can count subkinds. Specifically, most of her consultants did not judge a contrast in acceptability between the sentences in (34), and she and two others slightly prefer (b) with *tipo* ('kind'). This parallels how the Hungarian sentences in (22)-(27) were judged to be improved with *féle* ('kind of'), but that ultimately it was not deemed obligatory.

- (34) *Brazilian Portuguese* (Pires de Oliveira p.c.)
a. As duas mobílias que mais vendem são cadeiras e mesas.
the.FEM.PL two.FEM furniture.PL that most sell.PRS.3PL are chair.PL and table.PL
'The two best-selling furnitures are chairs and tables.'
b. Os dois tipos de mobília que mais vendem são cadeiras e mesas.
the.MSC.PL two.MSC kind.PL of furniture that sell.PRS.3PL most are chair.PL and table.PL
'The two best-selling kinds of furniture are chairs and tables.'

As with Japanese, this brief look at Brazilian Portuguese demonstrates that object and subkind countability should be considered independently, because object-uncountability does not imply subkind-uncountability (and vice versa, e.g. *species* and *halogen* cannot count instances but can count subkinds; Krifka et al. 1995).

In summary, the novel data presented in Section 3 shows that Hungarian has at least 10 object mass nouns, of which at least three can count subkinds. Previous analyses of the inability of object mass nouns in English to count subkinds (Grimm & Levin 2017, Sutton & Filip 2018) not only do not predict a cross-linguistic difference, but they seem to require ad-hoc assumptions to account for the data presented here. Furthermore, since there is nascent evidence of object mass nouns counting subkinds in Japanese (Erbach 2019) and Brazilian Portuguese (Pires de Oliveira p.c.), following the tradition of Chierchia (1998b 2015), a common property of the nominal systems of these three languages that differs from English might underly the facts.

One common property of Hungarian, Japanese, and Brazilian Portuguese is general number (Corbett 2000, Rullman & You 2006, Paul 2012), where bare singular count nouns range over singularities and pluralities, but do not imply that the proposition is verified by a singular or plural object. General number is a feature of Hungarian (Farkas and de Swart 2003), Japanese (Nemoto 2005) and arguably Brazilian Portuguese (Pires de Oliveira and Rothstein 2011:ex.2), but not English. Indeed, we intend to argue in future research that the ability of object mass nouns to count subkinds is correlated with general number. This is the only hypothesis that we know of with a

cross-linguistic prediction, so we believe that it is worth mentioning at this stage without support. Regardless of whether this prediction is borne out, the point stands that subkind-uncountability is not a universal property of object mass nouns.

5. Conclusion

On the assumptions made based on the novel empirical evidence presented in this paper that Hungarian has object mass nouns that can count subkinds, we conclude that subkind-uncountability is not a universal property of object mass nouns. Therefore, subkind-uncountability should not be added to the list of identifying properties of object mass nouns, meaning that they hold as originally put forth (7).

- (7) Object mass nouns are distinct from
- a. count nouns in the ability to occur in count morphosyntax.
 - b. substance mass nouns in the ability to
 - i. compare via cardinality of objects.
 - ii. combine with stubbornly distributive predicates.

By specifying that object mass nouns cannot count objects in count morphosyntax, we leave room for them to count subkinds, as demonstrated by the Hungarian data. As discussed in Section 4, this analysis has implications for formal models of subkind-countability such as Sutton & Filip (2018), which accounts for why object mass nouns cannot count subkinds in English, but requires modification to extend to Hungarian. Following the approach of Chierchia (1998), further research could seek a difference between the nominal systems of English and Hungarian that underlies the difference in the ability of object mass nouns to count subkinds.

Abbreviations

1 = first person, 2 = second person, 3 = third person, ACC = accusative, CL = classifier, DEF = definite, FEM = feminine, GEN = genitive, N = noun, PL = plural, POSS = possessive, PRS = present, PST = past, SG = singular

Acknowledgements

[redacted for author anonymity]

References

Barner, David. and Jesse Snedeker. 2005. Quantity judgments and individuation: Evidence that mass nouns count. *Cognition* 97(1). 41-66. DOI: <https://10.1016/j.cognition.2004.06.009>

- Baker, Carl L. 1978. *Introduction to generative-transformational syntax*. Englewood Cliffs, NJ: Prentice Hall.
- Braga, João Vinicius de A., Laisa de Sena, Ruan Mariano & Roberta Pires de Oliveira. 2010. Bare singular and bare mass nouns in Brazilian Portuguese: First results of an empirical survey. *Journal of Portuguese linguistics* 9(1). 75-94. DOI: <https://doi.org/10.5334/jpl.111>
- Bray, Robert. 2013. An experimental study of factors underlying differential ecosystem recovery from acidification of upland waters. *Applied ecology and environmental research* 11(3). 423-439. DOI: https://doi.org/10.15666/aeer/1103_423439
- Bunt, Harry C. 1985. *Mass terms and model-theoretic semantics*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1075/sl.11.2.16rev>
- Carlson, Gregory N. 1980. *Reference to kinds in English*. New York & London: Garland.
- Casey, Kenneth L. 1997. *Count/mass syntax and superordinate categories: Evidence of a conceptual distinction and its cognitive implications*. Northwestern University, Illinois. PhD thesis.
- Chierchia, Gennaro. 1998a. Plurality of mass nouns and the notion of 'semantic parameter'. In Susan Rothstein (ed.), *Events and grammar*, 55-103. Dordrecht: Kluwer. DOI: https://doi.org/10.1007/978-94-011-3969-4_4
- Chierchia, Gennaro. 1998b. Reference to kinds across languages. *Natural language semantics* 6(4). 339-405.
- Chierchia, Gennaro. 2010. Mass nouns, vagueness and semantic variation. *Synthese* 174(1). 99-149. DOI: <https://doi.org/10.1007/s11229-009-9686-6>
- Chierchia, Gennaro. 2015. How universal is the mass/count distinction? Three grammars of counting. In Audrey Li, Andrew Simpson, and Wei-Tien Dylan Tsai (eds.), *Chinese syntax: A cross-linguistic perspective*. 147-177. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199945658.003.0006>
- Corbett, G. (2000). *Number*. Cambridge University Press.
- Cowper, Elizabeth & Daniel Curry Hall. 2012. Aspects of individuation. In Diane Massam (ed.), *Count and mass across languages*, 27-53. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199654277.003.0003>
- Csirmaz, Anikó & Éva Dékány. 2014. Hungarian is a classifier language. In Raffaele Simone & Francesca Masini (eds.), *Word classes: Nature, typology and representations*, 141-160. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/cilt.332.08csi>
- Doetjes, Jenny. 2012. Count/mass distinctions across languages. In Claudia Maienborn, Klaus von Heusinger & Paul Portner (eds.), *Semantics: An international handbook of natural language meaning, part III*, 2559-2580. Berlin: de Gruyter. DOI: <https://doi.org/10.1515/9783110253382.2559>
- Erbach, Kurt. 2019. *Object mass nouns*. Heinrich-Heine-Universität, Düsseldorf. PhD thesis.
- Erbach, Kurt. 2020. Predicting object mass nouns across languages. *Proceedings of the Linguistic Society of America* 5.1 (2020): 228-241. DOI: <https://doi.org/10.3765/plsa.v5i1.4698>
- Erbach, Kurt, Peter R. Sutton, Hana Filip & Kathrin Byrdeck. 2017. Object mass nouns in Japanese. In Alexandre Cremers, Thom van Gessel & Floris Roelofsen (eds.), *Proceedings of the 21st Amsterdam Colloquium*, 235-244. Amsterdam: Institute for Logic, Language, and Computation at the University of Amsterdam.

- Erbach, Kurt, Hana Filip & Peter R. Sutton. 2019. Bare nouns and the Hungarian mass/count distinction. In Alexandra Silva, Sam Staton, Peter Sutton & Carla Umbach (eds.), *Language, logic, and computation*, 86-107. Dordrecht: Springer. DOI: https://doi.org/10.1007/978-3-662-59565-7_5
- Farkas, Donka & Henriëtte De Swart. 2003. *The Semantics of Incorporation: From Argument Structure to Discourse Transparency*. CSLI Publications.
- Farkas, Donka & Henriëtte de Swart. 2010. The semantics and pragmatics of plurals. *Semantics and pragmatics* 3. 1-54. DOI: <https://doi.org/10.3765/sp.3.6>
- Gillon, Brendan S. 1999. The lexical semantics of English count and mass nouns. In Evelyne Viegas (ed.), *Breadth and depth of semantic lexicons*, 19-37. Dordrecht: Springer. DOI: https://doi.org/10.1007/978-94-017-0952-1_2
- Grimm, Scott. 2016. Crime investigations: The countability profile of a delinquent noun. *Baltic international yearbook of cognition, logic and communication* 11. DOI: <https://doi.org/10.4148/1944-3676.1111>
- Grimm, Scott & Beth Levin. 2017. Artifact nouns: Reference and countability. In Andrew Lamont & Katerina Tetzloff (eds.), *Proceedings of the North East Linguistic Society (NELS) 47*, 55-64. Amherst: GLSA.
- Jespersen, Otto. 1954. *A modern English Grammar: On historical principles. Part II, syntax (first volume)* [1911]. London: George Allen & Unwin Ltd.
- Kosliski, Kathrin. 1999. The semantics of mass-predicates. *Noûs* 33(1). 46-91. DOI: <https://doi.org/10.1111/0029-4624.00142>
- Krifka, Manfred, Francis J. Pelletier, Gregory N. Carlson, Alice ter Meulen, Godehard Link & Gennaro Chierchia. 1995. Genericity: An introduction. In Gregory N. Carlson & Francis J. Pelletier (eds.), *The generic book*, 1-124. Chicago: University of Chicago Press.
- Landman, Fred. 2011. Count nouns - mass nouns, neat nouns - mess nouns. *Baltic international yearbook of cognition, logic and communication* 6. DOI: <https://doi.org/10.4148/biycl.v6i0.1579>
- Matthewson, Lisa. 2004. On the methodology of semantic fieldwork. *International journal of American linguistics* 70. 369-415. DOI: <https://doi.org/10.1086/429207>
- McCawley, James D. 1975. Lexicography and the count-mass distinction. *Proceedings of the first annual meeting of the Berkeley Linguistics Society*. 314-321. DOI: <https://doi.org/10.3765/bls.v1i0.2335>
- Murphy, Gregory L. 2002. *The big book of concepts*. Cambridge, MA: MIT Press. DOI: <https://doi.org/10.7551/mitpress/1602.001.0001>
- Nemoto, Naoko. 2005. On mass denotations of bare nouns in Japanese and Korean. *Linguistics* 43(2). 383-413. DOI: [10.1515/ling.2005.43.2.383](https://doi.org/10.1515/ling.2005.43.2.383)
- Paul, Ileana. 2012. General number and the structure of DP. In Diane Massam (ed.), *Count and mass across languages*, 99-111. Oxford: Oxford University Press. DOI: [10.1093/acprof:oso/9780199654277.001.0001](https://doi.org/10.1093/acprof:oso/9780199654277.001.0001)
- Pelletier, Francis J. & Lenhart K. Schubert. 2002. Mass Expressions. In Dov M. Gabbay & Franz Guenther (eds.), *Handbook of philosophical logic 10*, 1-87. The Netherlands: Kluwer Academic Publishers. DOI: https://doi.org/10.1007/978-94-017-4524-6_6

- Pires de Oliveira, Roberta & Susan Rothstein. 2011. Bare singular noun phrases are mass in Brazilian Portuguese. *Lingua* 121, 2153–2175. DOI: <https://doi.org/10.1016/j.lingua.2011.09.004>
- Pires de Oliveira, Roberta & Susan Rothstein. 2020. Comparatives in Brazilian Portuguese. In Frederike Moldtman (ed.) *Mass and count in linguistics, philosophy and cognitive science*. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/lfab.16.07rot>
- Rothstein, Susan. 2010. Counting and the mass/count distinction. *Journal of semantics* 27(3). 343-397. DOI: <https://doi.org/10.1093/jos/ffq007>
- Rothstein, Susan. 2017. *Semantics for counting and measuring*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/9780511734830>
- Rullman, Hotze & Aili You. 2006. General number and the semantics and pragmatics of indefinite bare nouns in Mandarin Chinese. In Klaus von Heusinger & Ken Turner (eds.), *Where semantics meets pragmatics*, 175-198. Amsterdam: Elsevier.
- Schvarcz, Brigitta & Susan Rothstein. 2017. Hungarian classifier constructions, plurality and the mass–count distinction. In Harry van der Hulst & Anikó Lipták (eds.), *Approaches to Hungarian: Papers from the 2017 Leiden Conference*, 183-208. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/atoh.15.07sch>
- Schwarzschild, Roger. 2011. Stubborn distributivity, multiparticipant nouns and the count/mass distinction. In Suzi Lima, Kevin Mullin & Brian Smith (eds.), *Proceedings of the North East Linguistic Society (NELS) 39*, 661–678. Amherst: GLSA.
- Soja, Nancy N., Susan Carey & Elizabeth S. Spelke. 1991. Ontological categories guide young children's instructions of word meaning: Object terms and substance terms. *Cognition* 38(2). 179-211. DOI: [https://doi.org/10.1016/0010-0277\(91\)90051-5](https://doi.org/10.1016/0010-0277(91)90051-5)
- Sutton, Peter R. & Hana Filip. 2016. Counting in context: Count/mass variation and restrictions on coercion in collective artifact nouns. In Mary Moroney, Carol-Rose Little, Jacob Collard & Dan Burgdorf (eds.), *Proceedings of SALT 26*, 350-370. DOI: <https://doi.org/10.3765/salt.v26i0.3796>
- Sutton, Peter R. & Hana Filip. 2018. Restrictions on subkind coercion in superordinate object mass nouns. In Robert Truswell, Chris Cummins, Caroline Heycock, Brian Rabern & Hannah Rohde (eds.), *Proceedings of Sinn und Bedeutung 21*, 1195-213. University of Edinburgh.
- Wisniewski, Edward J., Mutsumi Imai & Lyman Casey. On the equivalence of superordinate concepts. *Cognition* 60(3). 269-298. DOI: [https://doi.org/10.1016/0010-0277\(96\)00707-x](https://doi.org/10.1016/0010-0277(96)00707-x)