Sant, Charlotte. 2026. Countability and gender in complementary distribution: Arguing for a four-category classification system in Norwegian. *Glossa: a journal of general linguistics* 11(1). pp. 1–46. DOI: https://doi.org/10.16995/glossa.24241

Open Library of Humanities

Countability and gender in complementary distribution: Arguing for a four-category classification system in Norwegian

Charlotte Sant, UiT The Arctic University of Norway, charlotte.sant95@gmail.com

This paper argues for a novel view of the Norwegian noun categorization system, in which a noun can belong to one of four classes. This goes against the traditional generalization that Norwegian is a three-gender language (divided into masculine, feminine and neuter). The empirical focus point of the paper is on procedures in which count nouns are transformed into mass nouns (*grinding*), or vice versa (*portioning*). I present data that shows that, while nouns with masculine and feminine gender can undergo these procedures, neuter nouns are locked to one of two countability values (count or mass). Based on this data, I argue that what is generally called "neuter gender" is actually a form that appears when a noun does not belong to a gender class. What we end up with are four noun classes in Norwegian: masculine, feminine, count and mass.

Glossa: a journal of general linguistics is a peer-reviewed open access journal published by the Open Library of Humanities. © 2026 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See http://creativecommons.org/licenses/by/4.0/. Articles published by the Open Library of Humanities may also contain other CC-licensed material, or material used or reproduced under an exception or limitation to copyright. Such material is not subject to the article's license. It is either marked with its own license, or marked that it has been reproduced with permission or under fair-use.

OPEN ACCESS

1 Introduction

Languages vary in their methods for categorizing or classifying nouns, based on syntactic and/or semantic factors. Two types of categories that one may assign to a noun are gender and countability. These classes are not often compared (but see Audring 2016 and Mathieu 2012), though they may both interact with inflection, agreement and, to varying extents, semantics. For example, the language Kuuk Thaayorre has classifiers relating to seafood, grasses, elongated objects, insects and others (Gabby 2006). But gender can also be connected to the semantics of a noun, which we see in Dyirbal, which has four genders: one for male humans and non-human animates, one for female humans, water, fire and fighting, one for non-flesh food and one for the rest (Dixon 1972: 308–312). What separates these kinds of noun categorization? The goal of my paper is to merge the two concepts to create a more unified notion of placing nouns into classes.

I will investigate the relationship between countability and gender and argue that they can in some cases be part of the same classification system. To argue this, I will use data from Norwegian, which is a language that is consistently reported to categorize nouns according to a three-gender system. My position is that, instead of three genders, Norwegian operates with a categorization system where a noun can be a member of one of four classes: masculine, feminine, count or mass.

Sant (2024) presents the following data showing that there is a notable distinction between masculine and feminine nouns on one end and neuter nouns on the other, in terms of whether they have free access to mass and count readings. While masculine and feminine nouns are flexible in whether they can get a mass or count reading, this is not the case for neuter nouns. For example, in an attempt to *grind* count nouns, i.e. use a count noun in a mass context, with a mass interpretation, the masculine noun *appelsin* ‘orange’ and the feminine noun *plomme* ‘plum’ can do so, but the neuter noun *eple* ‘apple’ cannot. The intended context is one in which you are being trained to work in a cake factory, and you are being instructed to add a certain kind of mashed fruit to a pie:

(1) *Norwegian*
No tilset me appelsin-en / plomm-a.
now add we orange.MASC-DEF.MASC / plum.FEM-DEF.FEM
‘Now we’re going to add the orange/plum mass.’

(2) #No tilset me epl-et.
now add we apple.NEUT-DEF.NEUT
Intended: ‘Now we’re going to add the apple mass.’[1]

In the same vein, if one tries to *portion* a mass noun, i.e. use a mass noun in a count context, this is possible with masculine and feminine nouns but not neuter nouns:

[1] Specifically the word *eplet* ‘the apple’ may not be optimal as a test in terms of pronunciation, as the indefinite and definite forms sound alike in Norwegian. *Eplet* ‘the apple’ has been used to form an optimal minimal pair with *appelsinen* ‘the orange’ and *plomma* ‘the plum’, but native speakers will recognize that the same issue with grinding arises with the neuter noun *egget* ‘the egg’.

(3) Anne bad om ein vin / ei suppe.
Anne asked about a.MASC wine.MASC / a.FEM soup.FEM
'Anne asked for a (contextually relevant unit of) wine/soup.'

(4) #Anne bad om eit vatn.
Anne asked about a.NEUT water.NEUT
Intended: 'Anne asked for a (e.g. glass or bottle of) water.'

Coercion operations like grinding and portioning are typically seen as being pragmatically initiated. Since the examples above include very minimal pairs, comparing fruits in one case and liquids in another, a pragmatic approach cannot explain why this kind of gender difference exists. The fact is that neuter nouns seem to be locked into a mass or count reading, and this reading cannot be changed by semantics or pragmatics.

To solve the puzzle, I will show that both gender and countability are syntactic features, ±FEM and ±ATOMIC respectively, and that these features can both be located on the head that categorizes the noun and provides its criteria of identity, similar to *n* in the Distributed Morphology framework. As the gender and countability features are in complementary distribution on this categorizing head, I argue that the four feature values of feminine, masculine, count and mass are essentially the four categories that make up the noun classification system of Norwegian. This goes against the general consensus in the literature that Norwegian has a solely gender-based nominal classification system.

The article is structured in the following way: in section 2, I lay out the facts needed about how Norwegian grammar reflects countability and gender information, adjective agreement and the traits of bare nouns. I also present the empirical puzzle leading the investigation with more context. In section 3, I clarify my stance on the nature and location of the gender and countability features, and I open up the possibility that these may be located on the same kind of head immediately above the NP level in the DP structure. Section 4 proposes that the Norwegian neuter is a form that appears in the absence of a gender feature, and that neuter nouns are inflexible in their mass or count reading, because they are lexicalized with a countability-specifying feature. I further discuss the implications of my proposal for the concepts of grinding and portioning operators as well as the semantic restrictions that may result from a syntactic feature value. I conclude in section 5.

2 Data

The Norwegian data in the introduction does not provide the full context and information needed to show how it is a surprising finding. In the following, I will give you some basic facts about Norwegian grammar that will serve as a baseline before we delve back into the data relating to grinding and portioning. Specifically, I will explain how Norwegian grammar reflects countability

and gender, in which ways adjectives agree with nouns and what the properties of bare singular nouns are. Following this, I point out that neuter is a special category in that it serves as a "default" gender, in that neuter agreement appears when there is no clear-cut noun to assign a gender to. This leads us back to the oddities of my data, since it is specifically neuter nouns that cannot have their countability value altered.

2.1 Countability

Norwegian overtly reflects whether a noun denotes a countable unit or a mass. Intuitively, count nouns like *katt* 'cat' can be counted with a numeral, while mass nouns cannot:

(5) a. Myrte har to katt-ar.
Myrte have.PRES two cat-PL
'Myrte has two cats.'
b. *Myrte spaserer på to sand(ar).
Myrte stroll.PRES on two sand(s)
'*Myrte strolls on two sand(s).'

Another difference is that count nouns can be selected by an indefinite article and mass nouns cannot:

(6) a. Myrte har ein katt.
Myrte have.PRES a cat
'Myrte has two cats.'
b. *Myrte spaserer på ein sand.
Myrte stroll.PRES on a sand
'*Myrte strolls on a sand.'

A crucial trait of mass nouns is that they cannot be pluralized (assuming no coercion is involved, which I will address soon):

(7) katt-ar, *sand-ar
cat-PL sand-PL
'cats, *sands'

Count and mass nouns are however the same in that they can both be used in the definite form, in which case a suffix is added to the noun to establish definiteness:

(8) a. Myrte har katt-en.
Myrte have.PRES cat-DEF
'Myrte has the cat.'

b. Myrte spaserer på sand-en.
Myrte stroll.PRES on sand-DEF
'Myrte strolls on the sand.'

We can conclude that Norwegian in several ways shows a morphosyntactic distinction between mass and count nouns and therefore also that there are diagnostics for figuring out whether a noun denotes a countable unit or not.

2.2 Gender

Norwegian is traditionally viewed to have masculine, feminine and neuter gender. The gender of a noun is visible through agreement. First, indefinite articles and definite suffixes must agree with the gender and number of a noun. The paradigm is exemplified below, with every possible combination of gender, number and definiteness:

(9) *Singular nouns*

a. ein gut, ei jente, eit hus
a.MASC boy.MASC a.FEM girl.FEM a.NEUT house.NEUT
'a boy, a girl, a house'

b. gut-en, jent-a, hus-et
boy.MASC-DEF.MASC girl.FEM-DEF.FEM house.NEUT-DEF.NEUT
'the boy, the girl, the house'

(10) *Plural nouns*

a. gut-ar, jent-er, hus-Ø
boy.MASC-INDEF.PL.MASC girl.FEM-indef.PL.FEM house.NEUT-INDEF.PL.NEUT
'boys, girls, houses'

b. gut-ane, jent-ene, hus-a
boy.MASC-DEF.PL.MASC girl.FEM-DEF.PL.FEM house.NEUT-DEF.PL.NEUT
'the boys, the girls, the houses'

Gender is also visible through agreement. In Norwegian, determiners and adjectives agree with the number and gender of the noun (though gender agreement is not always visible for adjectives). In the singular numbered examples below, the indefinite article or definite suffix take different forms depending on gender. The adjective takes a *-t* suffix when a neuter noun is indefinite, and it takes a null suffix when the noun is masculine or feminine:

(11) *Singular nouns (attributive adjectives)*

a. ein stor-Ø gut, ei stor-Ø jente, eit stor-t hus
a big-Ø boy.MASC-Ø a big-Ø girl.FEM a big-t house
'a big boy, a big girl, a big house'

b. den stor-e guten, den stor-e jenta, det stor-e
the.MASC big-e boy.MASC.DEF the.FEM big-e girl.FEM.DEF the.NEUT big-e
huset
house.NEUT.DEF
'the big boy, the big girl, the big house'

When nouns are plural, their adjectives are followed by a suffix *-e* regardless of gender or definiteness. Both attributive and predicative adjectives take this suffix:

(12) *Plural nouns (attributive adjectives)*

a. (i) stor-e gutar stor-e jenter, stor-e hus
big-e boy.MASC.PL big-e girl.FEM.PL big-e house.NEUT.PL
'big boys, big girls, big houses'

(ii) dei stor-e gutane, dei stor-e jentene, dei stor-e
the.PL big-e boy.MASC.PL.DEF the.PL big-e girl.FEM.PL.DEF the big-e
husa
house.NEUT.PL.DEF
'the big boys, the big girls, the big houses'

(13) *Plural nouns (predicative adjectives)*

a. Gutar er stor-e. Jenter er stor-e. Hus er
boy.MASC.PL be.PRES big-e girl.FEM.PL be.PRES big-e house.NEUT.PL be.PRES
stor-e.
big-e
'Boys are big. Girls are big. Houses are big.'

b. Gutane er stor-e. Jentene er stor-e.
boy.MASC.PL.DEF be.PRES big-e girl.FEM.PL.DEF be.PRES big-e
'The boys are big. The girls are big.'
Husa er stor-e.
house.NEUT.PL.DEF be.PRES big-e
'The houses are big.'

The different adjectival suffixes are summarized in **Table 1**:

	SG	**PL**
INDEF	MASC/FEM: -Ø	MASC/FEM: -e
	NEUT: -t	NEUT: -e
DEF	MASC/FEM: -e	MASC/FEM: -e
	NEUT: -e	NEUT: -e

Table 1: Adjective suffixes in Norwegian.

Before rounding off the coverage of gender, I will add that there is some interspeaker variation in the gender systems of Norwegian: some dialects, such as that of Bergen, do not make use of the feminine gender and instead have a two-gender system with only masculine and neuter. In the standard written language Bokmål, all feminine nouns can optionally be treated as masculine instead. My analysis will however focus specifically on three-gendered varieties of Norwegian.

2.3 Bare singular nouns

Norwegian does not have a determiner requirement in the sense that English does, and it can more freely make use of bare singular nouns. The distribution and meaning of bare nouns will feed into my perspective on their internal syntactic structure, which I will explain in the proposal section. When speakers use bare nouns in Norwegian, the noun typically denotes a kind or type (Borthen 2003). The copular sentence below illustrates this: the purpose of the noun *kjemikar* 'chemist' is to ascribe a general property of being of the chemist kind to the subject *Christian*:

(14) Christian er kjemikar.
Christian be.PRES chemist
'Christian is a chemist.'

This interpretation is not limited to copular sentences. In the example below, when the bare noun *hund* 'dog' is used, the noun denotes the dog kind, but when the article *ein* 'a(n)' is present, the noun is not restricted to a kind-level reading, and *hund* 'dog' could likely refer to an individual-level entity that belongs to the category "dog":

(15) a. Bente leiter etter hund.
Bente look.PRES after dog
'Bente is looking for some dog (e.g., to adopt).'
NOT: 'Bente is looking for an individual dog.'
b. Bente leiter etter ein hund.
Bente look.PRES after a dog
'Bente is looking for an individual dog.'
OR: 'Bente is looking for some dog (e.g., to adopt).'

So, without an article or definite suffix, the noun denotes a concept. This is also true when bare nouns are used in the subject position. Compare examples (16) and (17): in the former, the bare noun *buss* 'bus' denotes the kind of thing that is a bus, and in the latter, the sentence is unacceptable because the attempt is to use the noun to refer to a specific bus, i.e., as a stage-level predicate rather than a kind.

(16) Buss er et naturvennlig kjøretøy.
bus be.PRES a nature-friendly vehicle
'Buses are non-polluting vehicles.'
(Borthen 2003: 60)

(17) *Buss kom for seint.
bus came too late
Intended: 'The bus arrived too late.'

Finally, bare nouns have the trait of being ambiguous between a mass or a count reading. Context is in these cases the factor that signals which reading is relevant. Gender does not make a difference here. For example, the masculine noun *appelsin* 'orange', the feminine noun *plomme* 'plum' and the neuter noun *eple* 'apple' are all ambiguous between a countable and an uncountable reading.

(18) Har du appelsin / plomme / eple i hagen?
have you orange.MASC / plum.FEM / apple.NEUT in garden.DEF
'Do you have one or more oranges/plums/apples in your garden?'
OR:
'Do you have an orange/plum/apple mass (maybe mashed up in a huge barrel) in your garden?'

For more information and discussion about bare singular nouns in Norwegian, see Faarlund (1977), Borthen (2003), Grønn (2006) and Rosén & Borthen (2017).

2.4 Neuter as the "default" gender

There is an abundance of examples showing that specifically *singular neuter* is the agreement form that appears when agreement is necessary but there is no obvious noun present that can be assigned a gender value to satisfy this agreement requirement. Below are some examples, with descriptive labels:

(19) *Infinitive clause*
Å dra på kurs er ikkje kjek-t.
to go on course is not fun-SG.NEUT
'Going to a course isn't fun.'

(20) *Complement clause*
At Mara elskar godteri, er søt-t.
C Mara love.PRES candy be.PRES cute-SG.NEUT
'That Mara loves candy is cute.'

(21) *Unmarked mass noun*

Snø er *kvit-Ø / kvit-t.
snow.MASC be.PRES white-MASC / white-SG.NEUT
'Snow is white.'

(22) *General situational description*

Eg held på å koka graut, brygga kaffi og steika egg, men eg må på do.
I hold on to boil porridge brew coffee and fry egg but I must on toilet
Kan du passa på det?
can you watch on it.SG.NEUT
'I'm boiling porridge, brewing coffee and frying eggs but I need to go to the bathroom. Can you keep at eye on it (it = the whole situation)?'

(23) *VP ellipsis*

A: Har du spist frukost? B: Ja, eg har det.
A: have you eaten breakfast B: yes I have it.SG.NEUT
'A: Have you eaten breakfast?
B: Yes, I have (elided: eaten breakfast).'

(24) *Contextual nonovert event*

Pannekaker er rask-t.
pancake.PL.FEM be.PRES fast-SG.NEUT
'(Making, eating, etc.) pancakes is fast.'[2]

(25) *Quote*

Eg spurde han ut på date, men han gav meg eit "Nei takk, eg er ikkje
I asked him out on date but he gave me a.SG.NEUT no thanks I am not
interessert".
interested
'I asked him out on a date, but he gave me a "No thanks, I am not interested".'

[2] I have labeled this sentence as an example where the subject noun phrase denotes a "contextual nonovert event", but this is not unanimously agreed upon in the literature. For this phenomenon, commonly referred to as "pancake sentences", some argue that there is an implicit event located in the noun phrase (Faarlund 1977; Hellan 1986; Sant 2024), while others argue for "semantic agreement" (Enger 2004; 2013; Haugen & Enger 2019) or a special use of classifiers (Josefsson 1999; 2006; 2009; 2014). The phenomenon has also been identified in a number of non-Scandinavian languages, diagnosed through verb agreement and/or adjective agreement patterns: Brazilian Portuguese (Martin et al. 2020), Dutch (Sant 2024), French (Martin et al. 2020), German (Sant 2024), Hebrew (Corbett 1991; Sichel 1997; Greenberg 2009), Hungarian (Sant 2024), Lithuanian (Adamson & Šereikaitė 2019) and Russian (Sant 2024). Regardless of one's preferred approach, I will leave the issue with the assumption that the distribution or behavior of grammatical features in these noun phrases deviate from the norm in some manner, triggering the agreement default solution. See Greenberg (2009) and Adamson & Šereikaitė (2019) for other default-based explanations.

Some of these case studies have led earlier work to the conclusion that the Norwegian neuter is an exceptional, default and/or featureless gender.[3] This means that neuter is the gender that shows up when the gender feature is missing. The neuter is found when agreement needs to take place but there is no gender feature to agree with. Default agreement gender, i.e. neuter, does not involve the assignment of gender at all. Instead, it is an agreement form that signifies the *lack* of gender. Non-nominal constituents cannot contain a gender feature, and the fact that the neuter form shows up in agreement with non-nouns suggests that neuter is the default *agreement* form in Norwegian.

This idea that neuter is the lack of gender is at the heart of the article. In the following, I show an interesting difference between neuter and the other genders that further supports the view that neuter is not a gender value in the sense that we have previously assumed.

2.5 Neuter nouns are atomically fixed

One significant fact about neuter nouns is that they are resistant to countability-altering operations (Sant 2024). I mentioned the terms *grinding* and *portioning* in the introduction. These processes challenge a fixed view of mass and count interpretations of nouns, in that, given the right context, nouns are not locked into *either* a mass *or* a count reading. An example of grinding can be found below: an English noun like *pumpkin* may intuitively be seen as countable, based on world knowledge, but there are contexts where *pumpkin* can refer to something mass-like. This is reflected in the morphosyntax:

(26) *Grinding*
There was pumpkin all over the ground.
"pumpkin" = mashed pumpkin

The mass reading of *pumpkin* is signaled through the lack of a determiner and/or plural suffix. On the opposite end, we have portioning (also called packaging), which gives a mass noun a count-like reading:

(27) *Portioning*
Maud ordered a tea.
"a tea" = a contextually specified unit (e.g. a cup) of tea

Again, morphosyntax gives us the clue that *a tea* refers to a unit through the use of the indefinite article *a*.

One final kind of coercion that is often used in the same research environment is *sorting*, where a mass noun is given count morphosyntax in order to refer to a sort or type:

[3] See especially Enger (2004; 2009; 2013), Haugen & Enger (2019) and Lohndal & Westergaard (2021).

(28) *Sorting*
One beer is from the UK, and the other one is from Denmark.
"one beer" = one type of beer

The numeral *one*, as well as context, signals that *beer* is now countable.

As we will see later, languages vary with regard to whether their nouns are able to undergo these processes (Cheng et al. 2008; Rothstein 2017), but there is so far nothing suggesting that there could be languages that vary from word to word whether they can be ground or portioned. Norwegian is however an example of a language that displays this kind of variation. Specifically, it depends on the class that the noun belongs to: nouns that belong to the neuter category are stuck with a mass *or* count reading, while masculine and feminine nouns can receive either reading depending on context. The three-gender system that is generally assumed for Norwegian cannot explain why neuter should be different from masculine and feminine in this respect, but I will argue that the difference comes from the existence of a larger classificational system than previously thought.

The inability to grind neuter "count" nouns is especially clear in the definite form. While masculine and feminine count nouns can be interpreted as mass (29), the mass reading is inaccessible to neuter nouns (30). I here repeat the example from the introduction, in which someone is being told to add a large quantity of mashed fruit to a cake:

(29) *Grinding – masculine and feminine*
No tilset me appelsin-en / plomm-a.
now add we orange.MASC-DEF.MASC / plum.FEM-DEF.FEM
'Now we're going to add the orange/plum mass.'

(30) *Grinding – neuter (unacceptable)*
#No tilset me epl-et.
now add we apple.NEUT-DEF.NEUT
Intended: 'Now we're going to add the apple mass.'

My generalization is that a neuter noun like *eplet* 'the apple' can never have a mass reading without the addition of overt alteration of the form, such as compound forms like *eplemos* 'mashed apple'. Another minimal pair is the two types of deer *hjorten* 'the red deer' and *rådyret* 'the roe deer', the former of which is masculine and the latter of which is neuter. While the example below works well with *hjorten* 'the red deer' referring to red deer meat, it is unacceptable when the noun is *rådyret* 'the roe deer':

(31) Start med å skjære hjorten i halvfrossen tilstand i passe
start by to cut.INF red.deer.DEF.SG.MASC in half.frozen state in appropriately
tykke skiver.
thick slices
'Start by cutting half-frozen red deer meat into appropriately thick slices.'[4]

(32) #Start med å skjære rådyret i halvfrossen tilstand i passe
start by to cut.INF red.deer.DEF.SG.NEUT in half.frozen state in appropriately
tykke skiver.
thick slices
Intended: 'Start by cutting half-frozen roe deer meat into appropriately thick slices.'

When searching online for the word combination *skjære rådyret* 'cut the roe deer', the results are overwhelmingly instructions on how to butcher a deer. 'Red deer' and 'roe deer' have a nearly identical lexical meaning, as they are both a type of deer that is often hunted in the forest for game meat. This makes them a good minimal pair for comparison, and because of this I argue that the main difference between them is the gender of the noun and that the neuter form is symptomatic of a rigidity in countability value.

The inability for neuter nouns to be *portioned* is most clearly visible in the indefinite form. When ordering food or drink, and the noun inherently has a mass denotation, the common method of adding an article works well for masculine and feminine nouns:

(33) a. Kan eg få ein vin?
can I have a.MASC wine.MASC
'Could I get a (glass/bottle of) wine?'
b. Kan eg få ei suppe?
can I have a.FEM soup.FEM
'Could I get a (bowl of) soup?'

But when trying to portion neuter nouns in the same way, the attempt fails:

(34) #Kan eg få eit vatn / pepar / salt?
can I have a.NEUT water.NEUT / pepper.NEUT / salt.NEUT
Intended: 'Could I get a (glass/bottle/sachet of) water/pepper/salt?'

The conclusion here is that Norwegian neuter nouns can be neither ground nor portioned.

[4] Taken from a recipe on https://www.appetitt.no/oppskrifter/forett-smaretter/vilt/hjortecarpaccio-med-kraftkar, last accessed 25 February 2025.

I will briefly touch upon sorting, which has been generalized to be the same process as portioning because of the identical distribution in English: both portioning and sorting are visible through the use of count-associated morphosyntax. For example, both portioned and sorted noun phrases permit numerals and plural markers:

(35) *Portioning*
We ordered two beers.
"two beers" = (e.g. bottles or glasses of) beer

(36) *Sorting*
These two beers are from different countries. One beer is from England, and the other one is from Denmark.
"beers" = types of beer

In English, listeners need to make use of context and world knowledge to decide whether to interpret a noun phrase as portioned or sorted. When we look at Norwegian, however, we quickly realize that portioning and sorting are not the same phenomenon.[5] What makes sorting different from portioning in Norwegian is that there is no restriction on neuter nouns in the way we saw for portioning. A neuter noun can be sorted with no "oddness", and the expected agreeing form is preserved on the indefinite article or definite suffix. Below are all combinations of sorting: for each class (masculine, feminine and neuter), I show the singular indefinite, singular definite, plural indefinite and plural definite forms, respectively. Notice how the predicative adjective always agrees with the relative clause head:

(37) a. Me har ein vin som er ekstra tørr.
we have a.MASC wine.MASC that be.PRES extra dry.SG.MASC
'We have a (type of) wine that is extra dry.'

b. Me har vin-en som er ekstra tørr.
we have wine.MASC-DEF.MASC that be.PRES extra dry.SG.MASC
'We have the (type of) wine that is extra dry.'

c. Me har vin-ar som er ekstra tørre.
we have wine.MASC-INDEF.PL.MASC that be.PRES extra dry.PL.MASC
'We have wines (i.e. types of wine) that are extra dry.'

d. Me har vin-ane som er ekstra tørre.
we have wine.MASC-DEF.PL.MASC that be.PRES extra dry.PL.MASC
'We have the wines (i.e. types of wine) that are extra dry.'

[5] See also Wiese & Maling (2005) for convincing data from German and Icelandic.

(38) a. Me har ei suppe som er ekstra sterk.
we have a.FEM soup.FEM that be.PRES extra spicy.SG.FEM
'We have a (type of) soup that is extra spicy.'

b. Me har supp-a som er ekstra sterk.
we have soup.FEM-DEF.FEM that be.PRES extra spicy.SG.FEM
'We have the (type of) soup that is extra spicy.'

c. Me har supp-er som er ekstra sterke.
we have soup.FEM-INDEF.PL.FEM that be.PRES extra spicy.PL.FEM
'We have soups (i.e. types of soup) that are extra spicy.'

d. Me har supp-ene som er ekstra sterke.
we have soup.FEM-DEF.PL.FEM that be.PRES extra spicy.PL.FEM
'We have the soups (i.e. types of soup) that are extra spicy.'

(39) a. Me har eit vatn som er ekstra mineralrikt.
we have a.NEUT water.NEUT that be.PRES extra mineral.rich.SG.NEUT
'We have a (type of) water that is extra mineral-rich.'

b. Me har vatn-et som er ekstra mineralrikt.
we have water.NEUT-DEF.NEUT that be.PRES extra mineral.rich.SG.NEUT
'We have the (type of) water that is extra mineral-rich.'

c. Me har vatn-Ø som er ekstra
we have water.NEUT-INDEF.PL.NEUT that be.PRES extra
'We have waters (i.e. types of water) that are extra …'
mineralrike.
mineral.rich.PL.NEUT
'… mineral-rich.'

d. Me har vatn-a som er ekstra mineralrike.
we have water.NEUT-DEF.PL.NEUT that be.PRES extra mineral.rich.PL.NEUT
'We have the waters (i.e. types of water) that are extra mineral-rich.'

I will return to sorting in subsection 4.3.1 once my analysis of grinding and portioning has been presented.

2.6 Taking stock

We now understand that the standard view of gender and countability in Norwegian is insufficient. A successful explanation for the atomic rigidity of neuter nouns requires a new perspective on how nouns are classified in Norwegian. That is precisely the goal of this paper.

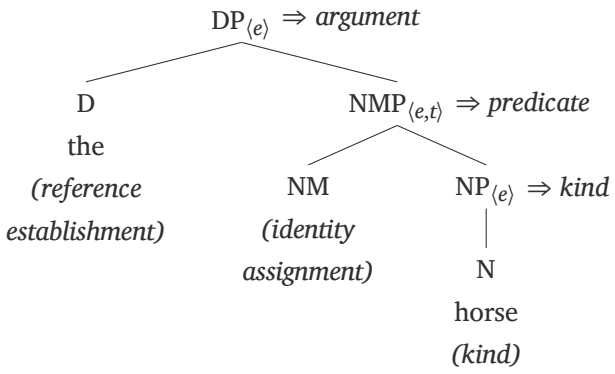
3 Theoretical considerations

My analysis depends on certain theoretical views of gender and countability that do not come without controversy, especially regarding the connection between syntax and semantics. I follow a framework that tightly connects semantic composition with the syntactic extended projection, and where heads in the syntax can carry lexical information. I will now go through the theoretical views that are the most essential to the proposal.

3.1 Noun phrase structure

In the framework I follow, the noun phrase consists of three layers, each with its own role in setting up the final meaning of the entity referred to by the noun (Zamparelli 1995; 2000; Borer 2005; Wiltschko 2014).[6] I will be using my own adaptation of this three-layer structure that has been developed, but see especially Zamparelli (2000) for the details behind the concept. The nominal projection begins at the NP level, which is where nouns are "born". At its smallest size, the NP denotes a kind: it is featureless and has minimal meaning. On top of NP, it is possible to project a head that I label Noun Marker (NM).[7] The purpose of the NM head is to provide identity criteria[8] for the entity: this is where the kind is turned into an individual-level predicate. Finally, the D head can be added, which provides reference for the individual and allows it to be anchored in the discourse. Below is a summarizing illustration of these layers, for the English noun phrase *the horse*:

(40)



One piece of data that has been used in support of a three-layer noun phrase structure is adjective ordering. Across languages, the order of adjectives tends to be rigid (see e.g. Cinque 1994; Scott 2002). In general, "objective" adjectives that describe essential parts of the entity are overwhelmingly linearly closer to the noun than "subjective" adjectives are. Consider the following examples from (Truswell 2009: 527):

---

[6] See also Longobardi (1994).

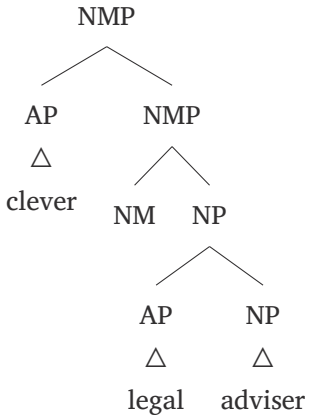
[7] The label is named based on Harris (1991). See Sant (2024) for a deeper discussion and justification specifically for Noun Marker as a category.

[8] See Geach (1962), Gupta (1980), Larson & Segal (1995) and Baker (2003).

(41) a. big wooden bridge – ??wooden big bridge
b. big French dog – ??French big dog
c. big circular lights – ??circular big lights

McNally & Boleda (2004) consider minimal pairs like *clever legal adviser*/??*legal clever adviser*. They argue that the adjective *legal* has to appear closer to *adviser* because it is a kind modifier specifically: it is a modifier located in the NP phrase and thus forms a subkind *legal adviser*. Following, *clever* modifies the individual-level predicate *legal adviser*, meaning that it is in the NM zone:[9]

(42)



This three-layered noun phrase structure, with each layer strongly tied to the semantic interpretation of the nominal entity, will prove useful in describing the traits and roles of nouns in a larger lexical-syntactic context.

3.2 Where are nouns categorized?

As I directly compare gender and countability in this paper, it is important to address how they are introduced in the syntax. I will assume that gender and countability are represented by binary features, respectively ±FEM and ±ATOMIC, and that the value of these features are fixed for a noun and cannot be overridden. The question is where in the syntax these features are located.

3.2.1 Gender

It is a fact that the gender of a noun cannot be overriden, even in cases where the noun refers to a human and intuitively has a real-life gender. For example, the masculine noun *student* 'student' in Norwegian cannot be used with feminine morphosyntax, regardless of the semantic gender of the student:

[9] See Pereltsvaig & Kagan (2018) for an argument for a layered approach to the DP structure based on adjective ordering in Russian.

(43) *Norwegian*

a. ein student, *ei student
a.SG.MASC student.SG.MASC a.SG.FEM student.SG.MASC
'a student (of any gender), *a female student'

b. student-en, *student-a
student-SG.MASC.DEF student-SG.FEM.DEF
'the student (of any gender), *the female student'

This is a piece of evidence suggesting that gender is a part of the lexical entry of the noun itself.[10] It is inherent to the noun *student* 'student' that it has masculine grammatical gender. This is the basis of the approach that has been presented before in which gender is assigned on the N head itself (Roca 1989; Harris 1991; Carstens 2000; 2010; 2011; Ralli 2002; 2003; Alexiadou 2004; see also Wechsler & Zlatić 2003), or, according to the Distributed Morphology framework, on a noun-categorizing head *n* (Lecarme 2002; Ferrari 2005; Kihm 2005; Acquaviva 2008; 2009; Lowenstamm 2008; Kramer 2009; 2014; 2015; 2016; Percus 2011; King 2015; Deal 2016; Fathi & Lowenstamm 2016). From the DM perspective, placing gender in *n* can be justified because of the fact that gender collaborates with other processes that are associated with *n*, such as nominalization, inflection and declension class (Kramer 2016).

In my view, one issue with the *n* approach in its current form is that gender would need to *always* be in the nominal structure if we see a noun. This is problematic when we consider bare singular nouns in Norwegian, which do not show overt signs of gender agreement. I repeat example (18) below: there is no morphosyntactic marking showing that *appelsin* 'orange' is masculine, *plomme* 'plum' is feminine and *eple* 'apple' is neuter:

(44) *Norwegian*

Har du appelsin / plomme / eple i hagen?
have you orange.MASC / plum.FEM / apple.NEUT in garden.DEF
'Do you have one or more oranges/plums/apples in your garden?'
OR:
'Do you have an orange/plum/apple mass (maybe mashed up in a huge barrel) in your garden?'

This would mean that there is no *n* in these nominal structures, but that goes against the principle of DM in that *n* needs to be present for the root to be integrated into the larger syntactic configuration. Without *n*, there is no way to tell that the word is a word, and which part of speech it belongs to. A more satisfying approach would be one in which gender is part of the categorizing

[10] This is not uncontroversial. See Harris (1991), Picallo (1991), Alexiadou (2004) and Koopman (2013a; b) for the argument that gender comes from a gender phrase, as well as Ritter (1993) for a numeral phrase approach.

of a word without it being the only way for the noun to be insertable into the syntax. Still, I am in favor of the main message behind the N/*n* analysis, namely that gender is part of a noun's lexical entry. The main difference between my approach and others is that, following the noun phrase structure I have laid out, a feature can be part of a noun's lexical entry without needing to be located on the noun head itself. Instead of lexical information being an inert conceptual item, lexical information is inserted through a contiguous head-complement sequence with its root at the bottom of that sequence (Halle 1997; Svenonius 2012; 2016).

In the previous subsection, I presented a head Noun Marker (NM) located immediately above the kind-denoting NP level. The purpose of this head is to provide identity to and categorize the entity denoted by the noun. Based on this description, it seems natural that it is the NM head that contains the gender-assigning feature ±FEM, as well. NM is similar to *n* in that its role is to give the noun its identity and assign it a part of speech. The difference is that NP is a syntactic constituent on its own before NM is applied, meaning that it can take the role of argument and be selected by a verb. Still, if a full determiner phrase needs to be formed, NM is necessary: a determiner cannot select an NP directly, as it needs an individual with reference. This means that whenever we see a DP, the nominal structure contains an NM for D to select.

The purpose of NM is not only to carry a gender feature – instead, it provides the identity of an individual, meaning that it can contain other features that are crucial to the lexical item. This also makes NM different from an approach where gender comes out through a specialized Gender head, in that it categorizes nouns in more than one way, meaning that NM's presence does not depend on the presence of gender. In the way I envision NM, nongendered languages also have NM in their nominal structure, since nouns can be categorized in different ways in different languages. NM is then a universal part of the formation of a nominal projection.

Despite all of this laying-out of the nature and use of NM, I wish to emphasize that its existence is not the main thesis of the article. I do not wish to make a bold statement about gender itself or where it is located. In several ways, NM is equivalent to *n*, and there may well be ways to explain the issues I come across with a DM framework, which I welcome suggestions for. The main reasons that I use this NM-based approach are that 1) lexical content can be located outside of the nominal head itself; 2) NM can be left out in certain situations, making it possible to shrink the nominal structure down to just an NP; and 3) the noun head itself does not carry a gender feature.

In the following, I ask: what else can be found on the NM head? The idea that I will put forward is that the count-mass distinction is another binary feature that can be located on NM, at least in some languages. To build up to this, we need to understand some earlier perspectives about where countability is located.

3.2.2 Countability

One major question in research on the count/mass distinction is whether or not the divisibility of a noun is encoded into the lexical entry of the noun itself. The alternative option would be that countability is introduced through a noun-external head, such as a number or classifier head.

I will work under the assumption that countability is binary and that a noun can *either* be count *or* mass, rather than there being a wider, more nuanced spectrum (cf. Allan 1980; Pelletier 2012). One reason for this choice is syntactic: if countability is binary, it can be translated into a syntactic feature ±ATOMIC. One question, however, is whether each noun can be associated with one and only one ±ATOMIC value. This matters for determining the feature's location: according to my conclusion about gender so far, the gender value of a noun is fixed because it is part of the noun's lexical entry, whereas a feature like ±PL can be freely valued as positive or negative (e.g., *horses* versus *horse*). So, whether a noun's ±ATOMIC value is rigid may be an indication of whether the feature is located in NM or not, helping us draw a parallel to the gender feature.

There are two particular approaches of interest relating to the syntactic location of countability. On one end, there is the approach that I call the *inherent mass approach*. Borer (2005) argues that nouns themselves are *always* mass-denoting and that the count meaning is caused by a functional head in the nominal projection that divides the mass, most often a classifier or plural marker (see also Zamparelli 2000). One opposing view is that all nouns are lexically specified for countability, mentioned earlier (Pelletier 1975; Krifka 1989; Cheng et al. 2008; Rothstein 2010; 2017). I label this the *lexical specification approach*. In the following, I will discuss the applicability of each approach when interacting with the Norwegian case study that I have presented.

Supporters of the inherent mass approach argue that *all* nouns are "born" with a mass denotation and that they can only denote countable units if a dividing head is added to the nominal syntactic structure. The ability to interact with the count system is then provided by syntax. In a language like English, the dividing head could for example be the plural suffix *-s*. Borer (2005) uses Mandarin Chinese for her argument, a language that supposedly requires a classifier for the noun to receive a count reading. Below are examples of this: in example (45a), the noun *ren* 'person' requires the classifier *ge* to get the count reading; in example (45b), the noun *mi* 'rice' is treated as a divisible unit because of the classifier *l*.

(45) *Mandarin Chinese (Borer 2005: 86)*

a. yi ge ren
   one CL person
   'one person'

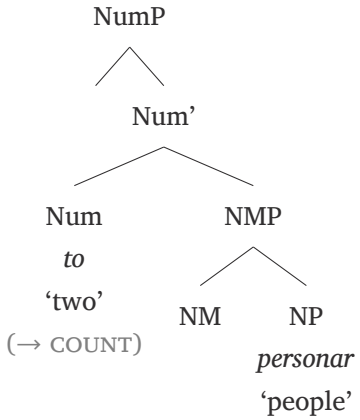
b. y l mi
   one CL rice
   'one grain of rice'

Nouns that receive a mass reading are not accompanied by a classifier:

(46) *Mandarin Chinese (Borer 2005: 86)*
shenme qian
much money
'much money' (*shenme*: literally 'what')

Because the mass reading involves no classifier, and the count reading obligatorily involves one, the argument is that the mass interpretation is the one that is at the "bottom" of the structure, i.e., that nouns are inherently mass. The syntactic structure behind Borer's (2005) argument is one in which a dividing head provides count meaning, if there is one. I translate this into the following underlying structure for a Norwegian phrase like *to personar* 'two people':

(47)



Please note that Num is equivalent to Div. Various labels have been used for the head that divides an object and introduces its count reading. In Mandarin Chinese, classifier heads may fulfill this purpose. In languages like English and Norwegian, Num has a similar role. The Num head *to* 'two', according to Borer's (2005) view, transforms the inherently mass-denoting noun *personar* 'people' into a count-denoting one. Count readings are thus introduced by the syntax. The count interpretation is crucially not located on NM here: since NM is part of the noun's lexical projection, it cannot contain a separate word that serves as a divider, like a numeral.

Let us consider what the inherent mass approach would mean for Norwegian data. Before starting to consider grinding and portioning, I will generalize that Borer (2005) would predict that nouns are mass-denoting whenever they are bare. For Norwegian, this is not true:

(48) Eg har kjøpt hund.
I have bought dog
'I have bought (a) dog.'

The meaning of *hund* 'dog' above, without an accompanying indefinite article, *can* certainly have a mass reading (likely referring to dog meat), but it is fully possible, and even likelier, that one is referring to a countable entity *dog*.

When considering grinding and portioning in Norwegian specifically, we encounter more issues. The inherent mass approach predicts that "grinding" and "portioning" are the result of the unexpected addition, or lack thereof, of a dividing head. In principle, according to Borer's (2005) approach, all nouns should be receptive to a count or mass reading, since the only difference between them is the existence or nonexistence of a head that is already a natural part of the noun phrase. The fact that these "ground" or "portioned" readings sound less natural would come from world knowledge rather than the presence of additional functions that force a change of countability value. While masculine and feminine nouns cannot be used as grounds to dispute the inherent mass approach, since either reading is available, the approach cannot explain the fact that neuter nouns are locked into one of the two countability values. I ultimately dismiss the proposal that countability comes from noun-external projecting heads.

On the other end lies the lexical specification approach, whose supporters believe that nouns have one countability value that makes up a fixed trait of that noun (Krifka 1989; Cheng et al. 2008; Landman 2011; Rothstein 2017). This is not an unintuitive idea: if one thinks of the concept *apple*, it is reasonable to think of *apple* as a countable object. Cheng et al. (2008) use grinding and portioning to argue for the lexical specification approach, using data from Mandarin. They point out that Mandarin does have appearances of bare singular count nouns. Below are some examples:

(49) *Mandarin (Cheng et al. 2008: 53)*

a. Húfēi mǎi **shū** qù le.
   Hufei buy book go SFP
   'Hufei went to buy a book/books/the book/the books.'
b. **gǒu** jīntiān tèbié tīnghuà.
   dog today very obedient
   'The dog/the dogs was/were very obedient today.'
c. **gǒu** ài chī ròu.
   dog love eat meat
   'Dogs love to eat meat.'

The detail that Cheng et al. (2008) highlight is that, even though these count nouns are bare, they are restricted to a count reading and cannot have a "ground" interpretation. In the example below, *gǒu* 'dog' can only refer to an intact, countable unit (i.e., the animal itself). It cannot refer to some kind of dog mass (such as dog meat):

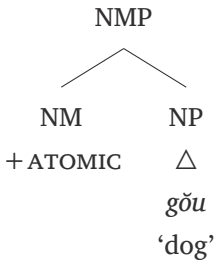
(50) *Mandarin Chinese (Cheng et al. 2008: 50)*
qiáng-shang dōu shì gǒu.
wall-TOP all COP dog
'There are dogs all over the wall (e.g., on the wallpaper).'
NOT: 'There is dog (meat) all over the wall.'

Mandarin would need to form a compound like *gǒu-ròu* 'dog-flesh/meat' for the desired mass reading to come through. According to the inherent mass approach, there should be no problem with interpreting *gǒu* 'dog meat', because there is no dividing head.[11]

Cheng et al. (2008) argue that grinding and portioning are actually a form of coercion and that this coercion is realized in different ways in different languages. Languages that overtly show a mass-count distinction will use the morphosyntax associated with the unexpected countability value: if an English speaker says that there was *dog* all over a wall, the lack of a count-specific article and/or plural marker leads the listener to a "last resort" solution whereby *dog* ends up referring to dog meat. On the other end, languages that do not grammatically show such a distinction will rely on context and world knowledge. In the example involving a noun meaning 'dog' being on a wall, it may be the case that 'dog' is so clearly tied to a countable unit that the count reading is more probably to be relevant, and, without morphosyntactic cues, the count reading becomes the dominant one.

The lexical specification approach can be translated in syntactic terms in the following way. As I laid out in the previous section, my syntactic framework treats lexical information as a sequence of heads introduced in the syntax, and the noun head itself does not carry lexical features. I also presented a head named Noun Marker (NM) which categorizes a noun and supplies it with identifying feature(s), such as gender. The way I apply the lexical specification approach is then that NM can also contain an interpretable feature that informs the noun's countability value, which I call ±ATOMIC. When this feature is positively valued, the entity represented by the noun denotes something that can be split up. When the feature is negatively valued, the entity denotes a mass. Below is an illustration of the syntactic structure behind *gǒu* 'dog', before additional heads are added to the nominal phrase. Keep in mind *gǒu* 'dog' is always considered a countable noun:

(51)



[11] Similar data has been found in Brazilian Portuguese, Gungbe (Kwa), Modern Hebrew, Russian and North Sámi. See Sant (2024) for a summary.

The lexical specification approach is compelling when we consider the data presented by Cheng et al. (2008). It sounds reasonable if the only Norwegian data available to us is neuter nouns. Considering how neuter nouns like *eple* 'apple' or *vatn* 'water' are fixed to one countability value, the natural conclusion would seem to be that this value is inherently tied to the lexical entry of the noun itself. However, we cannot escape the fact that masculine and feminine nouns are *not* tied to one value.

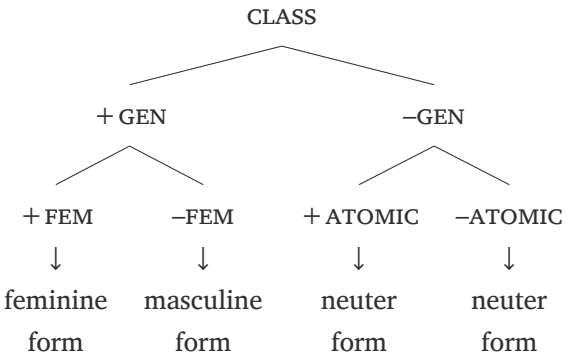
An approach that fully depends on lexical specification, then, cannot give the full, universal story. The Norwegian data presented in this paper may muddy the water and lead to an argument that takes variation into account, both across languages and within the same language. Upon investigating the Norwegian data further, I will conclude that it is possible to introduce countability as a feature in the lexical entry, but it is not an obligatory part of every noun in every language. I now present my proposal.

4 Proposal

We now have a sense of the existing views on whether countability is in the lexicon or not, namely the inherent mass approach and the lexical specification approach. These approaches have different predictions for Norwegian's ability to grind or portion nouns. If Norwegian nouns are fully free to receive either a mass or a count reading, the inherent mass approach is the most likely option. If Norwegian is rigid in its countability value, the lexical specification approach may be preferable. I will show that, because Norwegian varies from noun to noun in whether grinding and portioning are available, neither approach is entirely satisfying.

As I laid out earlier, the idea of "lexical specification" is operationalized as the existence of an ±ATOMIC feature in an NM head immediately adjacent to NP. In my analysis, this feature is for some nouns present and for others not. Specifically, I will address the fact that the countability feature ±ATOMIC and the gender feature ±FEM are in complementary distribution in the NM that categorizes a noun in Norwegian. This explains why Norwegian nouns are fixed in their gender *or* countability value. When NM contains the gender feature, the result is masculine or feminine gender assignment. When NM contains the countability feature, regardless of value, the result is the neuter form. The implication of this proposal is that what we call the "neuter" is actually not a gender but rather the lack thereof. The reason for the complementary distribution of gender and countability, I argue, is that they are both part of an overarching nominal classification system. My proposal is that, instead of a three-gender system, Norwegian has four classes that a noun may fall into. There is a feature hierarchy that determines which form a noun will end up taking, which I illustrate below:

(52)



A noun can either be gendered or not gendered. If it is +GEN, it will be valued as +FEM or –FEM, and the value determines the form and agreement pattern of the noun as feminine or masculine. When the class feature is –GEN, the value may be either +ATOMIC or –ATOMIC, and in either case, the noun ends up with the neuter form. This feature hierarchy, where a noun ends up with one of four classes rather than one of three genders, will prove useful to explain why gender and countability are mutually exclusive in Norwegian.

Since grinding and portioning are the result of pragmatic coercion, several factors need to be considered to find the right atmosphere for these constructions to be tested in. The reader may already have thought of examples that they view as counterexamples, but it will become clear in the section that these "counterexamples" are the result of other interfering factors such as facts about the Norwegian noun phrase structure as well as pragmatics. The proposal is structured as follows to make the explanation for approachable: first I tackle grinding where the noun phrase is specifically in the definite form, because they exhibit a clear-cut distinction between masculine and feminine nouns, which can be ground or portioned, and neuter nouns, which cannot be. I argue that this is because the NMs of countable neuter nouns contain a +ATOMIC feature value. As for grinding when the noun phrase is unmarked, I will argue that the seeming acceptability of this construction is due to the small structure of bare noun phrases in Norwegian, meaning that there is no countability-expressing NM to block a mass reading of a "count" noun.

Next comes portioning. Similar to before, I will argue that mass nouns that are assigned neuter cannot end up with a count reading because their NMs contain a –ATOMIC value. I first focus on the indefinite form because it shows the portioning restriction more clearly: when the noun phrase is definite, it may look like there is no such restriction, but I will show that these are not cases of *portioning* but rather a natural result of the presupposition of definiteness and how listeners are able to accommodate it. This is also where I comment on "sorting", which I do not believe to be the same process as portioning.

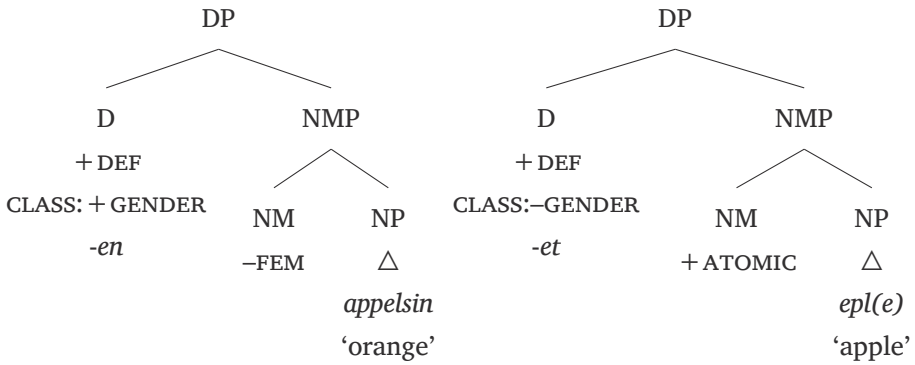
4.1 Grinding

As previously established, there is a difference between masculine and feminine nouns on one end and neuter nouns on the other end with regards to whether the grinding operation is available. This is clearly visible when we look at definite noun phrases:

(53) No tilset me appelsin-en / plomm-a / #epl-et.
now add we orange-DEF.MASC / plum-DEF.FEM / apple-DEF.NEUT
'Now we're going to add the orange/the plum/the apple.'

My explanation for this is that neuter nouns like *eple* 'apple' are assigned a +ATOMIC value in its categorizing head NM, while masculine and feminine nouns like *appelsin* 'orange' or *plomme* 'plum' are specified for gender and do not have a countability value in their syntactic configuration. The +ATOMIC value on neuter nouns forces atomic rigidity, and it cannot be overridden. This results in the inability to get a mass reading for *eplet* 'the apple'. Conversely, masculine and feminine nouns do not carry information about countability in their (syntactic) lexicon. This underspecification makes both the count and the mass reading accessible, and the relevant reading comes from context and morphosyntactic cues. Below is an illustration showing the DP structures of the definite forms of the masculine noun *appelsin* 'orange' versus the neuter noun *eple* 'apple':

(54)



The definite suffix takes different forms as a result of agreement with gender versus the lack of gender. The D head probes for a class feature located in NM, which can either be a gender feature (±FEM) or a countability feature (±ATOMIC). If D finds a gender feature, it agrees with the value of that gender feature. If D does not find a gender feature, it agrees with the lack of gender and is realized as *-et*, regardless of the feature value on ±ATOMIC.

Note that "grinding" as a semantic operator is not considered to be part of the structure. Gendered nouns are underspecified for countability, so nouns like *appelsin* 'orange' or *plomme* 'plum' are not inherently count and do not need extra machinery to get a mass interpretation: gendered 'count' noun phrases have the same structure regardless of whether the end result is a count or mass reading. Neuter count nouns like *eple* 'apple' are always locked into a count reading, and it is impossible for a grinding operator to be applied in order to transition the noun from a

count reading to a mass reading. This goes against the inherent mass approach explanation of grinding, in which the "ground" meaning is simply the result of the lack of a dividing head: such an approach would predict that a mass reading is available for *eplet* 'the apple', but this is not the case. If we only consider the inability to grind neuter count nouns, the lexical specification approach seems like the more likely solution.

One misleading observation is that it looks like there is no gender-neuter distinction when one tries to grind an unmarked noun:

(55) No tilset me appelsin / plomme / eple.
now add we orange.MASC / plum.FEM / apple.NEUT
'Now we're going to add orange/plum/apple mass.'

Eple 'apple', unlike what we saw for *eplet* 'the apple', can just as acceptably be used in the sentence above as *appelsin* 'orange' and *plomme* 'plum' can. How can this be reconciled with the claim that neuter count nouns are lexically specified as countable?

I insist that the example above does not counter my argument. The acceptability of *eple* 'apple' in this case stems from the small size of bare singular noun phrases in Norwegian.[12] Specifically, in my terms, the bare noun *eple* 'apple' is only an NP, meaning that there is no NM present in the nominal structure at all. Without NM, there is no head to introduce the +ATOMIC value, so the noun can freely receive a count or mass reading, depending on context. The idea that there is no NM in the structure of bare singular nouns in Norwegian is shown by the fact that: 1) gendered nouns do not display a gender value; and 2) neuter nouns are ambiguous between a count and a mass reading.

First focusing on the lack of gender features, we see that bare singular subjects in copular sentences cannot trigger masculine or feminine agreement in a predicative adjective. Consider example (56) (repeated from (21)):

(56) Snø er *kvit-Ø / kvit-t.
snow.MASC be.PRES white-MASC / white-SG.NEUT
'Snow is white.'

The same is the case for feminine bare singular nouns. See (57):

(57) Suppe er *sunn-Ø / sun-t.
soup.FEM be.PRES healthy-FEM / healthy-SG.NEUT
'Soup is healthy.'

Despite the masculine and feminine genders of the subject nouns above, the agreement form on the predicative adjective is obligatorily neuter. This can be explained by the small structure of

[12] Espinal & McNally (2011) also argue that bare singular nouns (in Catalan and Spanish) are minimal in size.

bare singular nouns: *snø* 'snow' and *suppe* 'soup' only consist of NPs, with no NM present to assign the masculine and feminine gender that the adjective can agree with.[13]

As for the count/mass ambiguity, I repeat example (18) in (58):

(58) Har du appelsin / plomme / eple i hagen?
have you orange.MASC / plum.FEM / apple.NEUT in garden.DEF
'Do you have one or more oranges/plums/apples in your garden?'
OR:
'Do you have an orange/plum/apple mass (maybe mashed up in a huge barrel) in your garden?'

The fact that bare nouns in Norwegian only consist of NPs means that the ability to "grind" bare neuter nouns does not successfully counter my argument, as the example is not a case of grinding in the sense that there is a countability value that has been shifted. There is no countability value because there is no NM, and this puts gendered and neuter nouns on a level playing field.

4.2 Portioning

4.2.1 Indefinite form

I use minimal comparisons between masculine, feminine and neuter nouns in support of the claim that neuter mass nouns cannot be portioned in Norwegian. This specific example was presented earlier:

(59) a. Kan eg få ein vin?
can I have a.MASC wine.MASC
'Could I get a (glass/bottle of) wine?'
b. Kan eg få ei suppe?
can I have a.FEM soup.FEM
'Could I get a (bowl of) soup?'
c. #Kan eg få eit vatn?
can I have a.NEUT water.NEUT
Intended: 'Could I get a (glass/bottle of) water?'

Based on the structure I have advocated so far, my explanation for this distinction between masculine/feminine nouns and neuter nouns is that nouns like *vatn* 'water' are lexicalized with a –ATOMIC value located in its NM. The reason for the unacceptability of *eit vatn* 'a.NEUT

[13] This is another example of what is commonly referred to as a "pancake sentence". Unlike the sentence we saw in example (24), there is no implicit event in these sentences. For more research into this construction in Mainland Scandinavian, see Faarlund (1977), Hellan (1986), Enger (2004; 2009; 2013; 2022), Josefsson (1999; 2006; 2009; 2014), Wechsler (2013), Haugen & Enger (2019) and Sant (2024).

water.NEUT' would then be reminiscent of what we saw for grinding: neuter mass nouns are inherently –ATOMIC, so they cannot be portioned.

Although the final conclusion will be that all neuter nouns are locked to one countability value, the story is not as simple, as the following empirical details will show. The first detail is that speakers find the "portioning" of neuter mass nouns marginally acceptable if the indefinite article takes the masculine form:

(60) Kan eg få ein vatn?
can I have a.MASC water.NEUT
'Could I get a (glass/bottle of) water?'

The permissibility of this construction heavily depends on context, in that it must already be firmly established what kind of container has been left unpronounced. Example (61) further illustrates the need for adequate context. One may imagine the sentences below if the speaker is at a fast food restaurant and asks for small sachets of salt and pepper:

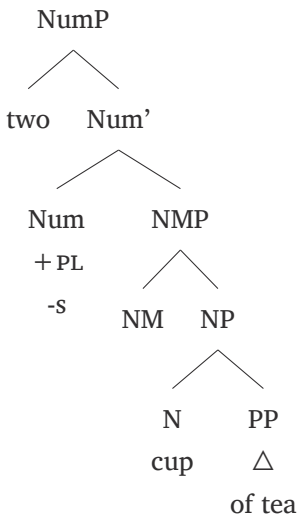
(61) Eg bad om ein salt og ein pepar til
I asked for a.SG.MASC salt.SG.NEUT and a.SG.MASC pepper.SG.NEUT to
'I asked for a (sachet of) salt and a (sachet of) pepper for …'
burgaren min.
burger.DEF my
'… my burger'

A crosslinguistic perspective may help us understand why the masculine article is allowed here. German has also been found to have a mismatch between the indefinite article and the noun in portioned noun phrases, where the articles are always masculine regardless of the actual gender of the noun (Wiese & Maling 2005). This has led some to argue that mass nouns are portioned through a nonovert "classifying" head that forces a count reading.[14] What is indefinite in *ein salt* 'a.MASC salt.NEUT' is then the thing that contains the salt mass, not the salt itself. Portioned noun phrases like *a coffee* would be structurally identical to a noun phrase like *a cup of coffee*.

Note that the insertion of a nonovert nominal head is different from the idea that *cup of* is a dividing head in the Borerian (2005) sense: *a cup of coffee* is a biphrasal structure in which the head of the noun phrase is *cup*, and *of coffee* is a PP complement of this head. This is not a noun phrase in which *cup of* is a classifier in the nominal projection of a head *coffee*. While Borer (2005) argues *cup of* to be an example of a classifier in English, the syntactic structure of *two cups of tea* suggests that *cups* is instead a nominal head. Here is an illustration:

[14] The existence of a nonovert portioning head is controversial, and there may be crosslinguistic variation with regard to its existence (argued by Wiese & Maling 2005). English may be good evidence for this, as a language that does in fact have plural marking on portioned mass nouns, e.g. *two beers*. A more thorough crosslinguistic comparison is unfortunately outside the scope of this paper.

(62)



Cups is in a recursive structure in that it is the head of a functional sequence that is on top of the functional sequence of *(of) tea*.

The masculine form on the indefinite article is not the only reason to argue for a nonovert nominal head. Another piece of evidence is the fact that, when a plural numeral is used to count the portions, there is surprisingly no plural suffix on the noun. This is true regardless of whether the noun is gendered or neuter:[15]

(63) a. to vin-Ø / #vin-ar, to vodka-Ø /
two wine.MASC-Ø / wine.MASC-PL.MASC two vodka.MASC-Ø /
'two portions of wine/*wines, two portions of vodka/ …'
#vodka-ar, to pasta-Ø / #pasta-ar
vodka.MASC-PL.MASC two pasta.MASC-Ø / pasta.MASC-PL.MASC
'… *vodkas, two portions of pasta/*pastas'

b. to lammestuing-Ø / #lammestuing-ar, to saft-Ø /
two lamb.stew.FEM-Ø / lamb.stew.FEM-PL.FEM two lemonade.FEM-Ø /
'two portions of lamb stew/*lamb stews, two portions of lemonade …'
#saft-er, to mjølk-Ø / #mjølk-er
lemonade.FEM-PL.FEM two milk.FEM-Ø / milk.FEM-PL.FEM
'… /*lemonades, two portions of milk/*milks.'

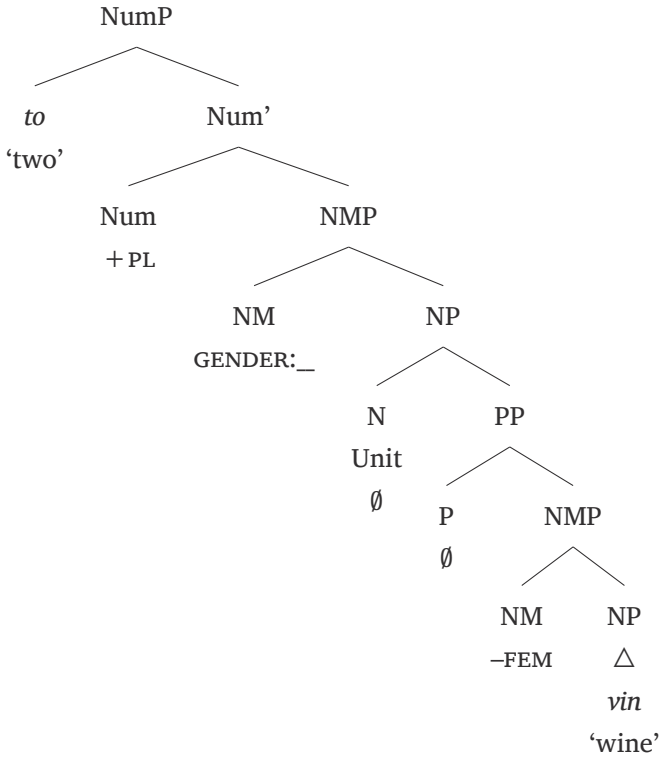
'two portions of lamb stew, two portions of lemonade, two portions of milk'

c. to garn-Ø, to gjær-Ø, to vatn-Ø
two yarn.NEUT-Ø two yeast.NEUT-Ø two water.NEUT-Ø
'two portions of yarn, two portions of yeast, two portions of water'

[15] One caveat with this data is that neuter nouns in many dialects do not display overt plural suffixes in the indefinite plural form to begin with. Some dialects, however, have adopted the form of the masculine plural suffix for many plural neuter nouns. In these dialects, the plural morphology is absent when a plural numeral counts a portioned neuter noun, showing support for the statement that the mass noun is not actually pluralized in these constructions.

The lack of plural marking suggests that the numeral *to* 'two' is not applied to the mass nouns themselves; instead, they count the nonovert containers of a substance. I label this container noun Unit. For the counting of a masculine noun like *vin* 'wine', we can imagine the following underlying structure:[16]

(64)



Unit is an N head that projects its own NM. The NM of Unit crucially does not have a gender feature. This is because Unit does not directly equate any overt noun, meaning that there is no noun that can be assigned a gender. NM ends up unvalued for gender.

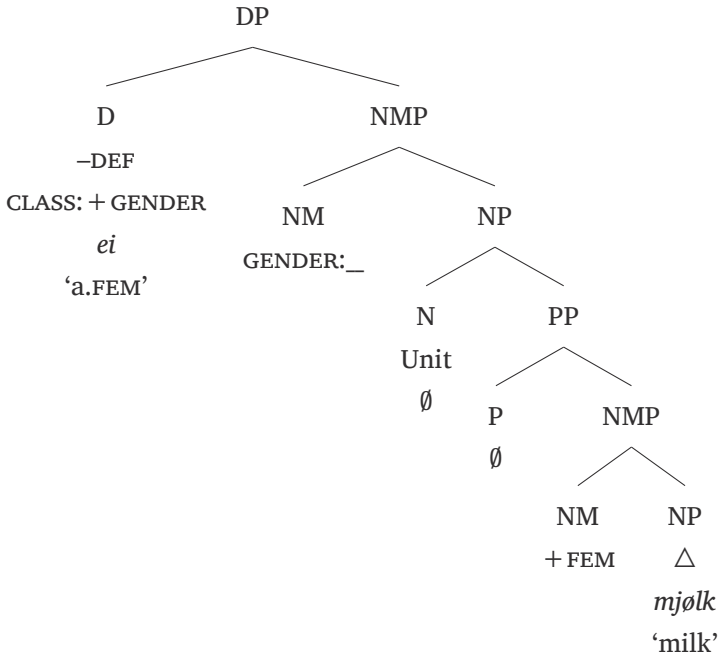
With the concepts developed so far, I will tackle the initial question of the subsection: why can masculine and feminine nouns be portioned with a gender-agreeing indefinite article, while neuter nouns can only be portioned if a masculine article is used? I argue that the article agreement we see comes from different sources: for masculine and feminine nouns, the determiner has access to the gender value of the mass noun's NM, but for neuter nouns, the determiner cannot find a gender value and thus picks masculine as a default form. This tracks with my proposal that

[16] The NMP *vin* 'wine' is part of a PP, even though there is no overt preposition in the phrase *to vin* 'two wine(s)'. There are three empirical reasons for this assumption: 1) Nouns typically do not take other noun phrases as their complements; 2) It is possible to add a preposition, such as *med* 'with', when the container noun is overt (e.g. *to glas med vin*, literally 'two glasses with wine'); 3) When a container noun is present, it is possible to omit the preposition (e.g. *to glas vin* 'two glasses wine'). The conclusion becomes that there is a preposition present in the structure, which also makes it comparable to *of* in English phrases like *two glasses of wine*.

gendered nouns have gender in their lexical entry and neuter nouns have countability in their lexical entry.

First, let us consider a portioned feminine noun phrase like *ei mjølk* 'a.FEM milk.FEM'. The general process of agreement that I follow is one in which a probe may continue to search if it is not able to find the desired feature to agree with. In this case, the determiner agrees with the gender of the lower NM (i.e., the NM that categorizes *mjølk* 'milk') because the most local NM (i.e., the NM of Unit) does not contain a gender feature. The structure looks like this:

(65)



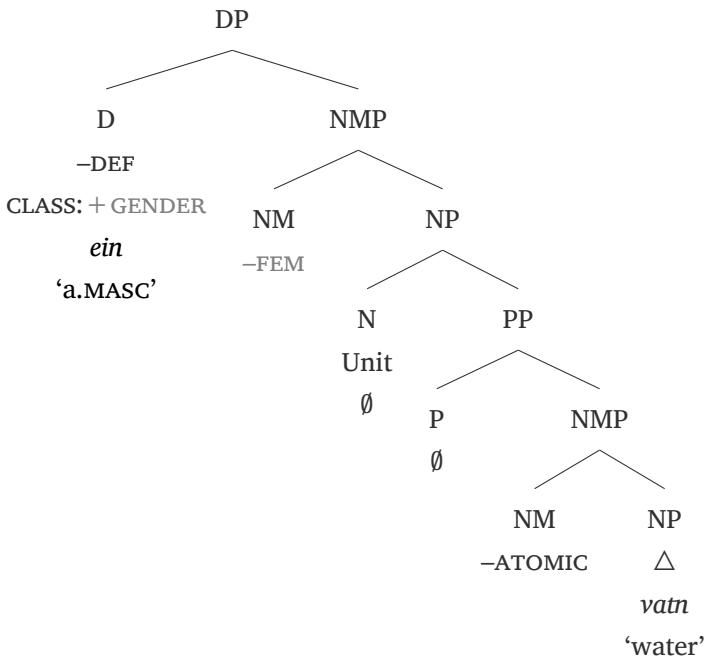
The feminine form on the indefinite article then comes from the + FEM feature value on the NM of *mjølk* 'milk', not from the closer NM that categorizes the NP headed by Unit.

With this analysis of *ei mjølk* 'a.FEM milk.FEM' in mind, we have an explanation of the masculine form on the indefinite article in cases of portioned neuter mass nouns, as in *ein vatn* 'a.MASC water.NEUT'. The reason for the use of the masculine form comes from the fact that masculine is the default assignment gender in Norwegian. I wish to emphasize that masculine is not the "default" form in the same manner as I have so far argued the neuter form to be. A convincing line of research distinguishes between the concepts of *default assignment gender* and *default agreement gender* in natural languages (see especially Lohndal & Westergaard 2021 for a focus on Norwegian; consider Fraser & Corbett 1997; 2000 and Adamson & Šereikaitė 2019 for other languages). As I stated earlier, the neuter form appears in agreement when the nominal constituent does not have an assigning head that can carry a gender value, like in copular sentences where an infinitive clause is described by a predicative adjective. That is, neuter appears

when there is no gender feature but agreement is required. On the other end, we find default assignment genders: this is the gender that is assigned to a noun that otherwise has not been assigned one, within a given speaker's grammar. In this case, a noun may be headed by an NM, but its gender feature has not been valued. The gender feature is valued with the default assignment gender. There is evidence to suggest that masculine is the default assignment gender in Norwegian: for example, a majority of English loanwords are found to be masculine (Graedler 1998; Johansson & Graedler 2002), first language learners assign masculine gender to nouns that they have not yet acquired the gender of (Rodina & Westergaard 2013; 2015)[17] and the feminine gender is consistently in decline in favor of the masculine (van Baal et al. 2024). The best explanation for the default use of masculine in these cases, and the default use of neuter in others, is that there are two types of default: one for assignment and one for agreement.

Returning to the "paradox" of *vatn* 'water.NEUT' combining with *ein* 'a.MASC', we can gather that the default assignment form is triggered because there is no gender value to agree with in the entire noun phrase structure: neither the NM of Unit nor the NM of *vatn* 'water' contains a ±FEM feature, as upper NM contains no class specification and the lower NM only contains ±ATOMIC. The determiner, looking for a class feature to agree with but not finding one, ends up going for gender agreement, and because masculine is the default assignment gender, this is the form that appears on the determiner, resulting in *ein* 'a(n).MASC'. Below is an illustration of this agreement relationship:

(66)



[17] See also Bentzen (2000), Anderssen (2006), Rodina & Westergaard (2017) and Busterud et al. (2019).

The NM of Unit is not inherently valued –FEM, but this value is inserted as an "escape hatch" solution to the lack of a gender feature for the determiner to agree with.

After having considered portioning in the indefinite form, the conclusion again becomes that neuter nouns do not have a gender feature in their NM but instead an ±ATOMIC feature. The reason for confusion about this fact stems from the acceptable use of the masculine indefinite article, which I have shown is a misleading issue. Portioning is a slightly more complicated syntactic process than grinding in that it involves a recursive nominal structure in which a nonovert noun has been inserted that denotes a carrier or container of the entity denoted by the visible mass noun. The reason that neuter nouns "can be portioned", albeit with the masculine indefinite article, does not come from the fact that the –ATOMIC value has been altered in the NM of neuter mass nouns. *Vatn* 'water' remains lexically specified as having a mass interpretation.

4.2.2 Definite form

Some may view the following piece of data as evidence that neuter mass nouns can in fact be portioned while showing neuter agreement:

(67) Kan eg få *vatn-en / vatn-et?
can I have water-SG.MASC.DEF / water-SG.NEUT.DEF
'Could I get the (glass/bottle of) water?'

Here, the definite suffix cannot take the masculine form, as opposed to what we saw for the indefinite article. This indicates that the "portioning" of definite neuter mass nouns is a different phenomenon. Namely, I contend that this is not a sign of portioning at all, at least not in the sense I have laid out so far where a nonovert noun is inserted in order to provide a unit for the substance to be divided into. One piece of data that supports this claim relates to the use of numerals and plural marking. Remember that in the indefinite form, the use of plural numerals did not cause the use of a plural suffix on the visible mass noun, suggesting that there is an invisible Unit head that is pluralized rather than the mass noun. This is different in the definite form: when a numeral is used in the definite form, the noun is pluralized. This happens regardless of whether the noun is gendered or neuter:

(68) a. Kan du gi meg dei to vin-ane / *vin på hylla?
can you give me those two wine-PL.MASC.DEF / wine on shelf.DEF
'Could you give me those two (e.g. bottles) of wine on the shelf?'

b. Kan du gi meg dei to mjølk-ene / *mjølk på hylla?
can you give me those two milk-PL.FEM.DEF / milk on shelf.DEF
'Could you give me those two (e.g. cartons) of milk on the shelf?'

c. Kan du gi meg dei to vatn-a / *vatn på hylla?
can you give me those two water-PL.NEUT.DEF / water on shelf.DEF
'Could you give me those two (e.g. bottles) of water on the shelf?'

This leads us to the argument that the example of a "portioned" neuter mass noun in (67) is not an example of portioning at all. Instead, the intuition that the mass nouns have been portioned is a natural effect of the use of the definite form as an establisher of some "contextually identifiable medium" (Jackendoff 1991). The examples above can be compared to the definite form of *water* in the second sentence in example (69):

(69) I dropped some water. *The water* spilled everywhere.

The same interpretation arises if the sentence is translated to Norwegian:

(70) Eg mista litt vatn. *Vatnet* sølte overalt.
I dropped a.little water.NEUT water.NEUT-NEUT.DEF spilled everywhere
'I dropped some water. The water spilled everywhere.'

There is no way to make a mass noun definite without restricting the location or amount of the substance: the definite article makes its expected contribution of establishing familiarity and uniqueness. *Vatnet* 'the water' in the example above, however, does not refer to a contextually relevant container of water, meaning that portioning has not taken place. It cannot be the case that the definite article always portions a mass. For example, if this were the case, we would expect *vatnet* 'the water' to not be the subject of a verb like *accumulate*, since a container cannot accumulate. But this is not borne out:

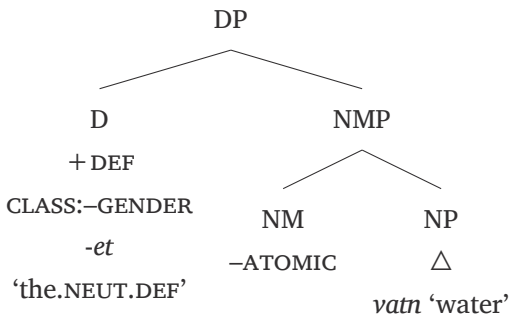
(71) *The water* accumulated on the bathroom floor.

The same is the case In Norwegian with a verb like *samla seg* 'gather':

(72) *Vatnet* samla seg på baderomsgolvet.
water.NEUT-NEUT.DEF gathered REFL on bathroom.floor.NEUT.DEF.
'The water gathered on the bathroom floor.'

It is therefore possible for a definite mass noun phrase to denote a mass and not a portion of a mass. I argue that the noun phrase *vatnet* 'the water' in example (67) is not a portioned mass noun, but simply the definite form of a mass noun. This means that *vatn* 'water' preserves the –ATOMIC value in its categorizing head NM, and the definite suffix shows neuter agreement because there is no gender feature in NM. Here is an illustration:

(73)



The tree diagram shows that the structure of the "portioned" definite mass noun involves no portioning at all. The noun phrase is simply the definite form of a mass noun.

4.3 Grinding and portioning operators?

So far, not much have been said about the semantic implication of atomicity being lexically specified. Cheng et al. (2008) do not suggest how the count or mass reading is derived in languages that morphosyntactically express such a distinction, and whose nouns are in fact atomically flexible (to the extent that context allows). Operators have been proposed to transform "count" nouns into "mass" nouns and vice versa (Rothstein 2017 and Chierchia 2010, respectively). According to my analysis, these operators cannot exist. Based on how I have reasoned in this chapter, this may be easy to imagine for neuter nouns, which cannot be "ground" or "portioned". For gendered nouns, the question comes back of how and whether atomicity comes through in natural language when it is not specified in the syntax.

I have shown that neuter nouns in Norwegian cannot have their atomicity value changed. I supported this by showing the inability to "grind" and "portion" neuter noun phrases such as *eple* 'apple' and *vatn* 'water', respectively. These nouns were presented in minimal pairs with similar gendered nouns, thus also minimizing contextual interference. Assuming that semantic operators can take the form of a head in the syntax, one can imagine the NM head to represent an operator that specifies whether the reference of the noun is cumulative or quantized. This would be different from a grinder or packager, as NM is directly adjacent to NP and does not have any atomicity information to alter.

I have also shown that gendered nouns in Norwegian are *not* lexically specified for atomicity, as they are free to receive a mass or count reading, depending on morphosyntax and context. I have already suggested that this reading is not structurally present. In the case of "portioning", there is no semantic operator present: instead, the count reading comes about because e.g. an indefinite article like *ein* 'a(n)' in Norwegian presupposes divisibility. The same goes for "grinding": when a noun has no determiner, it is presupposed that the reference of the noun is cumulative.

Based on the Norwegian data, there is no sign of the presence of grinding or portioning operators, and the burden of proof will at this point be on those who believe in them (such as Pelletier 1975; Krifka 1989; Chierchia 2010; Rothstein 2017). If such operators existed, they should be able to alter the atomicity value lexically specified by the noun, contrary to fact. Even the head Unit, which could initially be considered as a kind of portioning operator, can only be added once the nominal structure in its complement is further fleshed-out, which implies that Unit does not alter the countability value of a noun itself but rather some value that has been established after the formation of the nominal spine.[18] On the other hand, if language were not able to specify atomicity in the lexicon at all, then we would not be able to characterize the difference between neuter nouns and masculine/feminine nouns in Norwegian. We need a system whereby one class of nouns is truly underspecified for atomicity (masculine/feminine nouns), while the other class is lexically specified for this property (neuter nouns). Only the underspecified class can freely get a count or mass reading.

I do not wish to make a general, bold claim that grinders and portioners cannot exist: there may be crosslinguistic differences here as well. Future work would benefit from attempting to find overt evidence of these operators.

4.3.1 A note on sorting

In subsection 2.5, I showed one crucial way in which portioning and sorting are different in Norwegian, namely that neuter mass nouns have no issue with undergoing a "sorting operation" whatsoever, and that the sorting of a neuter noun does not restrict the agreement form that appears on indefinite articles, definite suffixes or adjectives. Below are examples of the neuter noun *vatn* 'water' when sorted versus portioned. As you can see, the sorted version comes with the neuter indefinite article *eit* 'a(n)' and the neuter adjective suffix *-t*, whereas this is impossible when *vatn* 'water' refers to a unit of water:

(74) a. Me har eit vatn som er ekstra mineralrikt.
we have a.NEUT water.NEUT that be.PRES extra mineral.rich.SG.NEUT
'We have a (type of) water that is extra mineral-rich.'

b. #Me har eit vatn på bordet som er ekstra stort.
we have a.NEUT water.WATER on table.DEF that be.PRES extra big.NEUT
Intended: 'We have an (e.g. glass/bottle of) water on the table that is extra big.'

Another piece of data that shows a difference between the two processes is that, unlike portioned nouns, sorted nouns do in fact show plural marking. It is unacceptable to drop the plural

[18] I thank an anonymous reviewer for helping me reflect on the Unit head, which one may intuitively but deceptively view as a portioning operator.

suffix in combination with a plural number like *to* ‘two’. Below is a comparison (drawn from subsection 2.5):

(75) a. Kan eg få to vin / #vin-ar?
can I get two wine.MASC / wine-MASC.PL
With the meaning: ‘Can I have two units of wine?’
b. Kan eg prøva to forskjellige #vin / vin-ar?
can I try two different wine.MASC / wine.MASC.PL
With the meaning: ‘Can I try two different types of wine?’

This difference matters because of my argument in subsection 4.2.1 that portioned nouns cannot have plural marking because the plurality is in a nonovert Unit head, not the overt mass noun itself. The fact that there *is* plural marking on sorted nouns is a sign that there is no Unit in sorted noun phrases, at least in Norwegian.

Sorting behaves differently from portioning, as we can see from non-English data. I take the facts we have about sorting to mean that sorting is a form of polysemy rather than a symptom of some complicated operation (see Falkum 2010). This kind of polysemy is similar to how nouns like *glas* ‘glass’ have dual meanings that are related to each other, where one is count and the other is mass. In a way, the “mass nouns” that have this kind of “sortal” meaning are count nouns.[19]

4.4 Summary

I have argued that Norwegian has a four-class system for nominal categorization: feminine, masculine, count and mass. These classes appear as feature values on a noun-categorizing head NM. While feminine and masculine nouns do end up being interpreted as something countable or uncountable, this is because of contextual cues and not grammatical encoding. I back up this claim with the fact that neuter nouns cannot undergo grinding or portioning operations. Nouns that are in the grammatical count or mass class appear in the “neuter” form. The fact that masculine and feminine gender are in complementary distribution with a rigid count or mass reading can then be attributed to the fact that they are different classes in the same class system.

5 Conclusion

Using grinding and portioning as my foundation, I have presented a novel analysis of mass and count nouns in Norwegian. Grinding and portioning, as ways to “alter” the way in which we view entities in the world, give insight to the question of whether atomicity lies in the lexicon or

[19] Whelpton et al. (2014) use the event-related potential (ERP) method to compare portioning and sorting. They tested Icelandic, which is like Norwegian in that sorted nouns behave like “normal” nouns and portioned nouns trigger masculine agreement. Whelpton et al. (2014) looked at the N400 and P600 effects from the results and found a coercion penalty (N400) when participants interpreted a sorted noun, an extra syntactic cost (P600) when faced with a portioned noun. This may further support my claim that portioning is compositional, while sorting is coercion.

whether it comes from special operators at the formal logical level. The Norwegian data presented in this article provides no support for an inherent mass approach à la Borer (2005). The solution that I have found to explain the data leads to a system where it is possible for countability to be specified in the lexicon, without that meaning that this is *always* the case. A system that permits lexical countability specification aligns with the fact that bare singular nouns cannot be ground in languages like Mandarin, but with my additional permitting of inter-word variation, we do not need to commit to the presence of ±ATOMIC in every appearance of a noun. Arguing that gender is a feature that is in complementary distribution with (grammatical) countability in Norwegian, I return to an old question of what exactly the distinction between genders and classifiers is. The existing descriptions of languages whose gender system is complex and strongly semantics-related rarely make it clear why these categories should be labeled as genders rather than classifiers. Hopefully, this article has served as a convincing attempt to bridge the gap between gender and classification.

That is not to say that gender and countability are fully identical, in the sense that gender is often largely unrelated to semantics, despite some tendencies for masculine and feminine gender to associate with the genders of humans. Though exceptions exist, countability is largely in a one-to-one relationship with whether an object can be split up into intact subparts or not. This close-knit relationship between grammatical countability and semantic atomicity is an overwhelmingly widespread tendency in languages that grammatically mark whether a noun is countable. The tie to semantics for countability, and the lack thereof for gender, is shown by the fact that the gender of a noun is rigid but countability tends to be more fluid. Still, the discovery that gender and countability are mutually exclusive as noun categorizers in Norwegian leads to the speculation that they are historically from the same source. In this view, while countability has kept its tie to semantics in Norwegian, gender has largely strayed from its original purpose and mostly serves as a purely grammatical way of grouping words.

Is countability part of the lexicon? My investigation suggests that, while nouns in Norwegian must be categorized according to some kind of class, this class does not need to be related to whether the object is divisible into units. My claim is only directed at Norwegian, precisely because of the inability to grind or portion non-gendered nouns. I do not try to make an across-the-board statement about natural language, and it is important to emphasize the nuances in the relationship between semantics and how it is grammatically encoded. The core message of the lexical specification approach still remains intact: there does exist a spot in the nominal lexicon, realized through the functional projection, that can host countability information. In my system, this piece of information is present through a dedicated feature in the syntax that can be positively or negatively valued for atomicity.

My proposal is different from that of the lexical specification approach, in the sense that there are nouns that do not carry this feature in their noun-categorizing head, such as masculine

and feminine nouns in Norwegian. This means that the grinding and portioning of masculine and feminine nouns are not the result of any syntactic-semantic operation, but rather that they are purely contextually derived. If we assume the existence of nonovert grinding and portioning operators, we also cannot explain why neuter nouns are fixed to one reading or the other. If grinding or portioning operators could be applied freely to nouns, it would be difficult to explain what could possibly block the insertion of such a function. The inability to change a neuter noun's atomicity value could come from a principled restriction in Norwegian stating that a value specified in NM cannot be overwritten: just like how gender cannot be changed in masculine and feminine nouns, atomicity cannot be changed in neuter nouns. In any case, my account disputes a theory that requires specialized semantic operators to get the countability value that is the opposite of the "intuitive" meaning of the noun.

The fact that nouns differ in whether they are atomically rigid brings up the larger topic of mental representation of concepts, which I will briefly touch upon now. If the gendered nouns *appelsin* 'orange' and *plomme* 'plum' can easily be countable or uncountable, but the neuter noun *eple* 'apple' cannot, what does that say about native Norwegian speakers' view of these concepts? It is highly unlikely that the grammatical realization of these different readings represents an inherent difference in whether native speakers are able to visualize, for example, a mashed-up apple. This is too radical of an argument. We can instead imagine the rigidity of neuter nouns to be comparable to the rigidity of gender, even when grammatical gender is seemingly connected to human gender. The noun *student* 'student' is masculine regardless of the actual gender of the student, and it is impossible to add feminine morphosyntax to signal that the student is female. This does not mean that native speakers of Norwegian cannot envision a female student: there is simply a grammatical restriction in which a modifier or other description must be added to express this meaning. It is therefore not unreasonable to claim that a noun is grammatically restricted to be count or mass without committing to a larger statement about how we represent oranges, plums and apples in our minds.

I encourage future work that attempts to find empirical data that may challenge a strict separation between gender and classification. It would be especially useful to consider non-Indo European languages here, considering the richness of some classification and gender systems across the world. For example, the Algonquian language Ojibwe shows an interaction between gender and countability where changing the gender of a noun from inanimate to animate can result in a dividing operation on a mass noun (Mathieu 2012). It would be fruitful to see if more examples of these interactions exist and how the Norwegian data fits into the larger picture. For now, Norwegian stands as one example of a language with a classification system that that can contain either gender or countability information.

Abbreviations

A(P) = adjective (phrase); C = complementizer; CL = classifier; COP = copula; DEF = definite; D(P) = determiner (phrase); FEM = feminine gender; INDEF = indefinite; INF = infinitive; MASC = masculine gender; NEUT = neuter gender; NM(P) = noun marker (phrase); N(P) = noun (phrase); Num(P) = number (phrase); PL = plural number; P(P) = preposition (phrase); PRES = present tense; SFP = sentence-final particle; SG = singular; TOP = topic; V(P) = verb (phrase)

Acknowledgements

I especially wish to thank Gillian Ramchand for continuous guidance, discussion and supervision. I am grateful to the Center for Advanced Study in Theoretical Linguistics – Formal Investigations into Structure and Hierarchy (CASTL-Fish) at the Arctic University of Norway. The article benefited greatly from the audience at the workshop Microvariation and Microchange in the Scandinavian Languages (2024, Agder University), as well as the syntax and semantics research community at Leiden University. I thank Jenny Doetjes and Kjell Johan Sæbø for discussions about the original doctoral thesis manuscript.

Competing interests

The author has no competing interests to declare.

References

Acquaviva, Paolo. 2008. *Lexical plurals*. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/oso/9780199534210.001.0001

Acquaviva, Paolo. 2009. Roots and lexicality in distributed morphology. *York Essex Morphology Meeting* 2. 1–21.

Adamson, Luke & Šereikaitė, Milena. 2019. Representing gender and defaults: Evidence from Lithuanian. *Glossa: a journal of general linguistics* 4(1). 121. DOI: https://doi.org/10.5334/gjgl.860

Alexiadou, Artemis. 2004. Inflection class, gender and DP-internal structure. In Müller, Gereon & Gunkel, Lutz & Zifonun, Gisela (eds.), *Explorations in nominal inflection*, 21–50. Berlin: Mouton. DOI: https://doi.org/10.1515/9783110197501.21

Allan, Keith. 1980. Nouns and Countability. *Language* 56(3). 541–567. DOI: https://doi.org/10.2307/414449

Anderssen, Merete Brendeford. 2006. *The acquisition of compositional definiteness in Norwegian*. The Arctic University of Norway dissertation.

Audring, Jenny. 2016. Gender. In Aronoff, Mard (ed.), *Oxford research encyclopedia of linguistics*. New York: Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.43

Baker, Mark. 2003. *Lexical categories: Verbs, nouns, and adjectives*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511615047

Bentzen, Kristine. 2000. *I like not it like du like it! A case study of language transfer in bilingual first language acquisition*. The Arctic University of Norway dissertation.

Borer, Hagit. 2005. *Structuring sense volume 1: In name only*. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199263905.001.0001

Borthen, Kaja. 2003. *Norwegian bare singulars*. Norwegian University of Science and Technology dissertation.

Busterud, Guro & Lohndal, Terje & Rodina, Yulia & Westergaard, Marit. 2019. The loss of feminine gender in Norwegian: A dialect comparison. *Journal of Comparative Germanic Linguistics* 22. 141–167. DOI: https://doi.org/10.1007/s10828-019-09108-7

Carstens, Vicki. 2000. Concord in minimalist theory. *Linguistic Inquiry* 31. 319–355. DOI: https://doi.org/10.1162/002438900554370

Carstens, Vicki. 2010. Implications of grammatical gender for the theory of uninterpretable features. In Putnam, Mike (ed.), *Exploring crash-proof grammars*, 31–57. Amsterdam: Benjamins. DOI: https://doi.org/10.1075/lfab.3.03car

Carstens, Vicki. 2011. Hyperactivity and hyperagreement in Bantu. *Lingua* 121. 721–741. DOI: https://doi.org/10.1016/j.lingua.2010.11.001

Cheng, Lisa & Doetjes, Jenny & Sybesma, Rint. 2008. How universal is the Universal Grinder? *Linguistics in the Netherlands* 25(1). 50–62. DOI: https://doi.org/10.1075/avt.25.08che

Chierchia, Gennaro. 2010. Mass nouns, vagueness and semantic variation. *Synthese* 174. 99–149. DOI: https://doi.org/10.1007/s11229-009-9686-6

Cinque, Guglielmo. 1994. On the evidence for partial N-movement in the Romance DP. In Cinque, Guglielmo & Koster, Jan & Pollock, Jean-Yves & Rizzi, Luigi & Zanuttini, Raffaella (eds.), *Paths towards Universal Grammar: Essays in honor of Richard Kayne*, 85–110. Washington: Georgetown University Press.

Corbett, Greville. 1991. *Gender*. Cambridge: CUP. DOI: https://doi.org/10.1017/CBO9781139166119

Deal, Amy Rose. 2016. Plural exponence in the Nez Perce DP: A DP analysis. *Morphology* 26. 313–339. DOI: https://doi.org/10.1007/s11525-015-9277-9

Dixon, Robert. 1972. *The Dyirbal language of North Queensland*. Cambridge University Press: Cambridge. DOI: https://doi.org/10.1017/CBO9781139084987

Enger, Hans-Olav. 2004. Scandinavian pancake sentences as semantic agreement. *Nordic Journal of Linguistics* 27.1. 5–34. DOI: https://doi.org/10.1017/S0332586504001131

Enger, Hans-Olav. 2009. The role of core and non-core semantic rules in gender assignment. *Lingua* 119. 1281–1299. DOI: https://doi.org/10.1016/j.lingua.2009.02.004

Enger, Hans-Olav. 2013. Scandinavian pancake sentences revisited. *Nordic Journal of Linguistics* 35. 275–301. DOI: https://doi.org/10.1017/S0332586513000280

Enger, Hans-Olav. 2022. Defaultkongruens eller semantisk kongruens i pannekakesetninger? [Default agreement or semantic agreement in pancake sentences?]. *Språk och stil* 32. 171–176. DOI: https://doi.org/10.33063/diva-493028

Espinal, Maria Teresa & McNally, Louise. 2011. Bare singular nominals and incorporating verbs in Spanish and Catalan. *Journal of Linguistics* 47. 87–128. DOI: https://doi.org/10.1017/S0022226710000228

Faarlund, Jan Terje. 1977. Embedded clause reduction and Scandinavian gender agreement. *Journal of Linguistics* 13. 239–257. DOI: https://doi.org/10.1017/S0022226700005417

Falkum, Ingrid Lossius. 2010. Systematic polysemy and the count-mass distinction. *UCL Working Papers* 22. 16–40.

Fathi, Radwa & Lowenstamm, Jean. 2016. The gender assignment pattern of French nouns. *Morphology* 26. 477–509. DOI: https://doi.org/10.1007/s11525-016-9287-2

Ferrari, Franca. 2005. *A syntactic analysis of the nominal systems of Italian and Luganda: How nouns can be formed in the syntax*. New York University.

Fraser, Norman & Corbett, Greville. 1997. Defaults in Arapesh. *Lingua* 103. 25–57. DOI: https://doi.org/10.1016/S0024-3841(97)00012-0

Fraser, Norman & Corbett, Greville. 2000. Genders. In Unterbeck, Barbara & Rissanen, Matti & Nevalainen, Terttu & Saari, Mirja (ed.), *Gender in grammar and cognition*. New York: Mouton de Gruyter.

Gabby, Alice Rose. 2006. *A Grammar of Kuuk Thaayorre*. The University of Melbourne dissertation.

Geach, Peter. 1962. *Reference and generality*. Ithaca, New York: Cornell University Press.

Graedler, Anne-Line. 1998. *Morphological, semantic and functional aspects of English lexical borrowings in Norwegian*. University of Oslo dissertation.

Greenberg, Yael. 2009. Predication and equation in Hebrew (nonpseudocleft) copular sentences. In Armon-Lotem, Sharon & Danon, Gabi & Rothstein, Susan (eds.), *Current issues in generative Hebrew linguistics*, 161–198. Amsterdam/Philadephia: John Benjamins Publishing Company. DOI: https://doi.org/10.1075/la.134.07pre

Grønn, Atle. 2006. Norwegian bare singulars: a note on types and sorts. In Solstad, Torgrim & Grønn, Atle & Haug, Dag Trygve Truslew (eds.), *A festschrift for Kjell Johan Sæbø: In partial fulfilment of the requirements for the celebration of his 50th birthday*, 75–90. Oslo: University of Oslo.

Gupta, Anil. 1980. *The logic of common nouns*. New Haven, Connecticut: Yale University Press.

Halle, Morris. 1997. Distributed morphology: Impoverishment and fission. In Bruening, Benjamin & Kang, Yoonjung & McGinnis, Martha (eds.), *MITWPL 30: Papers at the Interface*, 425–449. Cambridge: MITWPL.

Harris, James. 1991. The exponence of gender in Spanish. *Linguistic Inquiry* 22. 27–62.

Haugen, Tor Arne & Enger, Hans-Olav. 2019. The semantics of Scandinavian pancake constructions. *Linguistics* 57(3). 531–575. DOI: https://doi.org/10.1515/ling-2019-0008

Hellan, Lars. 1986. The headedness of NPs in Norwegian. In *Features and projections*, 89–123. De Gruyter Mouton. DOI: https://doi.org/10.1515/9783110871661-005

Jackendoff, Ray. 1991. Parts and boundaries. *Cognition* 41. 9–45. DOI: https://doi.org/10.1016/0010-0277(91)90031-X

Johansson, Stig & Graedler, Anne-Line. 2002. *Rocka, hipt og snacksy. Om engelsk i norsk språk og samfunn ["Rocka", "hipt" and "snacksy". About English in Norwegian language and society]*. Kristiansand: Høyskoleforlaget.

Josefsson, Gunlög. 1999. On the semantics and syntax of Scandinavian pronouns and object shift. In van Riemsdijk, Henk (ed.), *Clitics in the languages of Europe*, 731–757. Berlin & New York: Mouton de Gruyter. DOI: https://doi.org/10.1515/9783110804010.731

Josefsson, Gunlög. 2006. Semantic and grammatical genders in Swedish – independent but interacting dimensions. *Lingua* 116. 1346–1368. DOI: https://doi.org/10.1016/j.lingua.2004.06.011

Josefsson, Gunlög. 2009. Peas and pancakes: On apparent disagreement and (null) light verbs in Swedish. *Nordic Journal of Linguistics* 32(1). 35–72. DOI: https://doi.org/10.1017/S0332586509002030

Josefsson, Gunlög. 2014. Pancake sentences and the semanticization of formal gender in Mainland Scandinavian. *Language Sciences* 43. 62–76. DOI: https://doi.org/10.1016/j.langsci.2013.10.009

Kihm, Alain. 2005. Noun class, gender and the lexicon-syntax-morphology interfaces: A comparative study of Niger-Congo and Romance languages. In Cinque, Guglielmo & Kayne, Richard (eds.), *The Oxford handbook of comparative syntax*, 459–512. Oxford: Oxford University Press.

King, Katherine. 2015. *Mixed gender agreement in Russian DPs*. University of Washington MA thesis.

Koopman, Hilda. 2013a. Inside the "noun" in Maasai. In Mahajan, Anoop (ed.), *Syntax at sunset 3: Head movement and syntactic theory (vol. 10), UCLA working papers in linguistics*, 77–115.

Koopman, Hilda. 2013b. The locality of agreement and the structure of the DP in Maasai. In Griffin, William Earl (ed.), *The role of agreement in natural language: TLS 5 proceedings*, 207–227. Austin: Texas Linguistics Forum.

Kramer, Ruth. 2009. *Definite markers, phi-features, and agreement: A morphosyntactic investigation of the Amharic DP*. UC Santa Cruz dissertation.

Kramer, Ruth. 2014. Gender in Amharic: A morphosyntactic approach to natural and grammatical gender. *Language Sciences* 43. 102–115. DOI: https://doi.org/10.1016/j.langsci.2013.10.004

Kramer, Ruth. 2015. *The morphosyntax of gender*. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199679935.001.0001

Kramer, Ruth. 2016. The location of gender features in the syntax. *Language and Linguistics Compass* 10(11). 661–677. DOI: https://doi.org/10.1111/lnc3.12226

Krifka, Manfred. 1989. Nominal reference, temporal constitution and quantification in event semantics. In Bartsch, Renate & van Benthem, Johan & van Emde Boas, Peter (eds.), *Semantics and contextual expressions*, 75–115. Foris. DOI: https://doi.org/10.1515/9783110877335-005

Landman, Fred. 2011. Count nouns, mass nouns, neat nouns, mess nouns. In Skilters, Jurgis (ed.), *Papers from: Formal semantics and pragmatics: Discourse context and models*. Riga: The Baltic

International Yearbook of Cognition, Logic and Communication. DOI: https://doi.org/10.4148/biyclc.v6i0.1579

Larson, Richard & Segal, Gabriel. 1995. *Knowledge of meaning: An introduction to semantic theory*. Cambridge, Massachusetts: MIT Press. DOI: https://doi.org/10.7551/mitpress/4076.001.0001

Lecarme, Jacqueline. 2002. Gender "polarity:" Theoretical aspects of Somali nominal morphology. In Boucher, Paul & Plénat, Marc (ed.), *Many morphologies*, 109–141. Somerville: Cascadilla Press.

Lohndal, Terje & Westergaard, Marit. 2021. Grammatical Gender: Acquisition, Attrition and Change. *Journal of Germanic Linguistics* DOI: https://doi.org/10.1017/S1470542720000057

Longobardi, Giuseppe. 1994. Reference and proper names: A theory of N-movement in syntax and logical form. *Linguistic Inquiry* 25(4). 609–665.

Lowenstamm, Jean. 2008. On little n, $\sqrt{}$, and types of nouns. In Hartmann, Jutte & Hegedűs, Veronika & van Riemsdijk, Henk (eds.), *Sounds of silence: Empty elements in syntax and phonology*, 105–144. Amsterdam: Elsevier.

Martin, Fabienne & Carvalho, Janayna & Alexiadou, Artemis. 2020. Predicates of personal taste and pancake sentences in Brazilian Portuguese and French. In Ihsane, Tabea (ed.), *Disentangling bare nouns and nominals introduced by a partitive article*, vol. 43, 140–186. Leiden/Boston: Brill. DOI: https://doi.org/10.1163/9789004437500_006

Mathieu, Éric. 2012. Flavors of division. *Linguistic Inquiry* 43. 650–679. DOI: https://doi.org/10.1162/ling_a_00110

McNally, Louise & Boleda, Gemma. 2004. Relational adjectives as properties of kinds. *Empirical Issues in Syntax and Semantics* 5. 179–196.

Pelletier, Francis Jeffry. 1975. Non-singular reference: Some prelimiaries. *Philosophia* 5(4). DOI: https://doi.org/10.1007/BF02379268

Pelletier, Francis Jeffry. 2012. Lexical nouns are both +MASS and +COUNT but they are neither +MASS nor +COUNT. In Massam, Diane (ed.), *Count and mass across languages*, 9–26. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/acprof:oso/9780199654277.003.0002

Percus, Orin. 2011. Gender features and interpretation: A case study. *Morphology* 21. 167–196. DOI: https://doi.org/10.1007/s11525-010-9157-2

Pereltsvaig, Asya & Kagan, Olga. 2018. Adjectives in layers. *Rhema* 4. 125–165. DOI: https://doi.org/10.31862/2500-2953-2018-4-125-165

Picallo, M. Carme. 1991. Nominals and nominalization in Catalan. *Probusy* 3. 279–316. DOI: https://doi.org/10.1515/prbs.1991.3.3.279

Ralli, Angela. 2002. The role of morphology in gender determination: Evidence from Modern Greek. *Linguistics* 40. 519–551. DOI: https://doi.org/10.1515/ling.2002.022

Ralli, Angela. 2003. Ladies first: The pivotal role of gender in the Italian nominal inflection system. *McGill Working Papers in Linguistics* 17(2). 1–54.

Ritter, Elizabeth. 1993. Where's gender? *Linguistic Inquiry* 24(4). 795–803. DOI: https://doi.org/10.1016/0026-2692(93)90078-S

Roca, Iggy. 1989. The organisation of grammatical gender. *Transactions of the Philological Society* 87. 1–32. DOI: https://doi.org/10.1111/j.1467-968X.1989.tb00617.x

Rodina, Yulia & Westergaard, Marit. 2013. The acquisition of gender and declension class in a non-transparent system: Monolinguals and bilinguals. *Studia Linguistica* 67. 47–67. DOI: https://doi.org/10.1111/stul.12012

Rodina, Yulia & Westergaard, Marit. 2015. Grammatical gender in Norwegian: Language acquisition and language change. *Journal of Germanic Linguistics* 27. 145–187. DOI: https://doi.org/10.1017/S1470542714000245

Rodina, Yulia & Westergaard, Marit. 2017. Grammatical gender in bilingual Norwegian-Russian acquisition: The role of input and transparency. *Language and Cognition* 20. 197–214. DOI: https://doi.org/10.1017/S1366728915000668

Rosén, Victoria & Borthen, Kaja. 2017. Norwegian bare singulars revisited. In Rosén, Victoria & De Smedt, Koenraad (eds.), *The very model of a modern linguist*, BeLLS. DOI: https://doi.org/10.15845/bells.v8i1.1330

Rothstein, Susan. 2010. Counting, measuring 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

Sant, Charlotte. 2024. *Nominal coercion at the syntax-semantics interface: an investigation of countability, events and gender*: Arctic University of Norway dissertation.

Scott, Gary-John. 2002. Stacked adjectival modification and the structure of nominal phrases. In Cinque, Guglielmo (ed.), *The cartography of syntactic structures, Vol. 1, Functional Structure in the DP and IP*, 91–120. Oxford: Oxford University Press. DOI: https://doi.org/10.1093/oso/9780195148794.003.0004

Sichel, Ivy. 1997. Two pronominal copulas and the syntax of Hebrew nonverbal sentences. In Blight, Ralph & Moosally, Michelle (ed.), *Texas Linguistic Forum 38: The syntax and semantics of predication*. Amsterdam/Philadelphia: University of Texas Department of Linguistics.

Svenonius, Peter. 2012. Spanning. Unpublished manuscript, Arctic University of Norway.

Svenonius, Peter. 2016. Spans and words. In Harley, Heidi & Siddiqi, Daniel (eds.), *Morphological metatheory*, 199–220. Amsterdam: John Benjamins. DOI: https://doi.org/10.1075/la.229.07sve

Truswell, Robert. 2009. Pragmatics and word meaning. *Linguistic Inquiry* 40(3). 525–533. DOI: https://doi.org/10.1162/ling.2009.40.3.525

van Baal, Yvonne & Eik, Ragnhild & Solbakken, Hedda & Lohndal, Terje. 2024. The decline of feminine gender: a cross-dialectal study of seven Norwegian dialects. *Journal of Germanic Linguistics* 27. 125–137. DOI: https://doi.org/10.1007/s10828-024-09155-9

Wechsler, Stephen. 2013. The structure of Swedish Pancakes. In *The core and the periphery: Data-driven perspectives on syntax inspired by Ivan A. Sag*, 71–98. Stanford: CSLI Publications.

Wechsler, Stephen & Zlatić, L. 2003. *The many faces of agreement*. Stanford: CSLI.

Whelpton, Matthew & Trotter, Drew & Guðmundsdóttir Beck, Þórhalla & Anderson, Curt & Durvasula, Karthik & Beretta, Alan. 2014. Portions and sorts in Icelandic: An ERP study. *Brain & Language* 136. 44–57. DOI: https://doi.org/10.1016/j.bandl.2014.07.008

Wiese, Heike & Maling, Joan. 2005. Beers, kaffi, and Schnaps: Different grammatical options for restaurant talk coercions in three Germanic languages. *Journal of Germanic Linguistics* 17(1). 1–38. DOI: https://doi.org/10.1017/S1470542705000012

Wiltschko, Martina. 2014. *The universal structure of categories*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9781139833899

Zamparelli, Roberto. 1995. *Layers in the Determiner Phrase*. University of Rochester dissertation.

Zamparelli, Roberto. 2000. *Layers in the Determiner Phrase*. New York: Routledge.