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Coercion at the syntax-semantics interface

An investigation of countability, events and gender

Charlotte Sant

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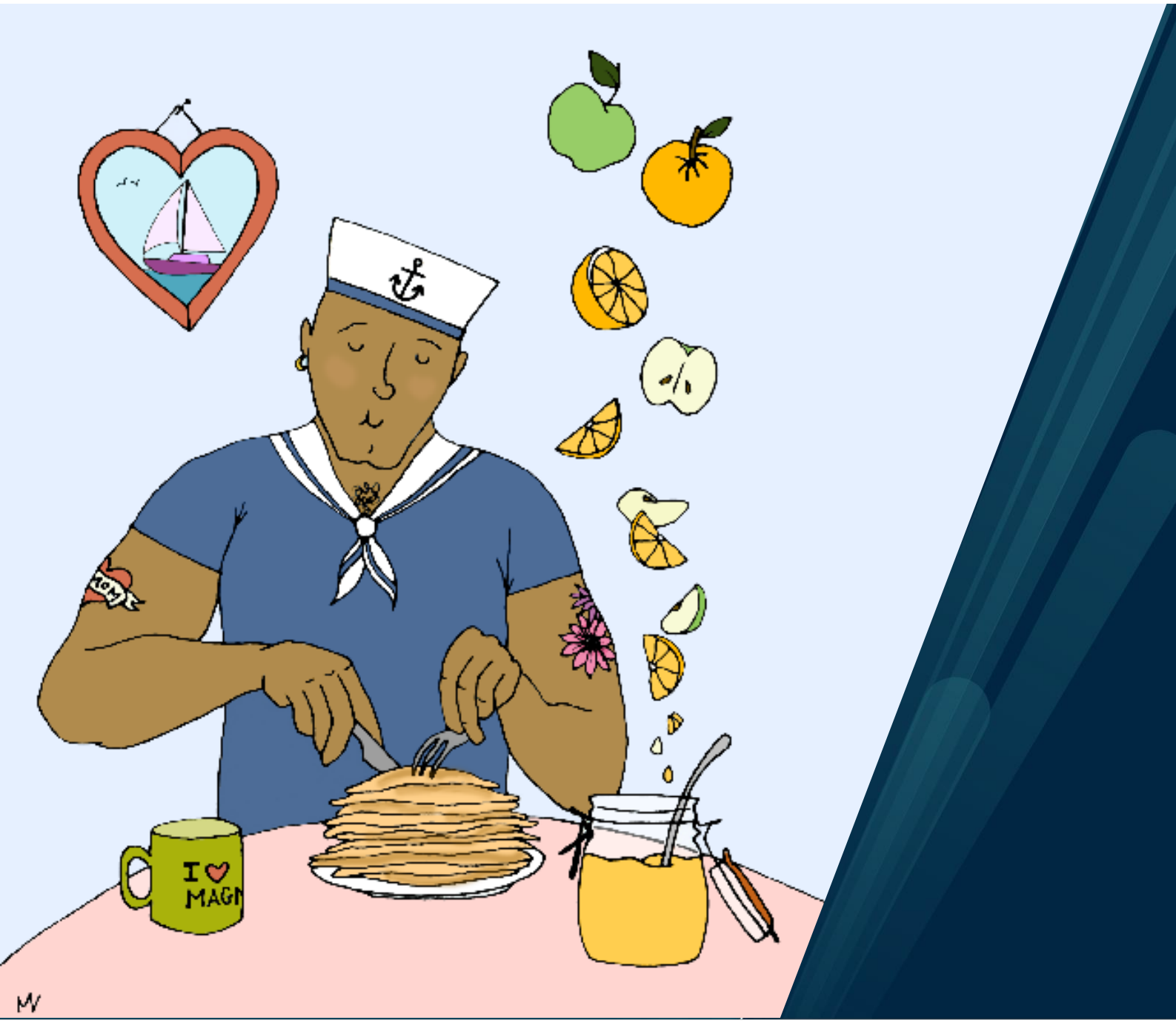

(Front page illustration by Myrte Vos.)

Nominal coercion at the syntax-semantics interface: an investigation of countability, events and gender

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Abstract

In the thesis, I investigate the relationship between syntax and semantics. To what extent does syntax accommodate meaning, and how? To aid my investigation, I consider three different case studies: 1) grinding and portioning (and lack thereof) in Mainland Scandinavian; 2) frequency adjectives in English; 3) pancake sentences in Mainland Scandinavian. These case studies give insight into the roles of various semantics-related elements in the syntactic nominal projection.

Using these case studies, I argue that: 1) the semantic concept of atomicity in some cases performs the same formal identifying role as that performed by lexical gender specification; 2) when a noun phrase appears in syntactic settings where one would expect an event, this is a sign that there is a nonovert event within the noun phrase; 3) we can use syntactic relationships such as agreement to test whether syntax has adapted to semantic operations. Ultimately, I end up arguing for an articulated phrase structural representation of nominal extended projections where semantic interpretation is closely tied to syntactic representation.

Samandrag

I denne avhandlinga utforskar eg samhaldet mellom syntaks og semantikk. Til kva grad tilpassar syntaks seg betydning, og korleis? Eg bruker tre case-studiar for å undersøka dette: 1) kverning og porsjonering (eng. "grinding" og "portioning"), og mangel på sådan, i fastlandsskandinavisk; 2) hyppigheitsadjektiv i engelsk; 3) pannekakesetningar i fastlandsskandinavisk. Desse case-studiane gir innsikt i rollene til diverse semantikkrelaterte element i den syntaktiske nominelle projeksjon.

Ved å bruka desse case-studiane hevdar eg følgande: 1) Det semantiske konseptet tellelegheit kan i nokre tilfelle utføra same formelle identifiseringsrolle som blir utført i leksikalsk genusspesifisering; 2) Når ein nomenfrase viser seg i ein kontekst kor ein ville forventa ei hending, er dette eit teikn på at det finst ein usynleg hendingsoperator inni nomenfrasen; 3) Me kan bruka syntaktiske prosessar som kongruens til å testa om syntaks har tilpassa seg semantiske operasjonar. Til sist ender eg opp med å argumentera for ein frasestrukturell representasjon av den nominelle utvida projeksjonen kor semantisk betydning er tett knytta opp mot syntaktisk representasjon.

Acknowledgments

Tromsø is a town of contrasts. Sometimes the midnights are decorated with a pink hue and sunlight, and sometimes one eats lunch in the darkness. Regardless of whether the island has been covered in flowers or snow, I have experienced immense joy from the bonds I have formed and the communities I have been lucky to be part of. It's impossible to list everyone who has enriched my life over these years, but I will try.

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those months.

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Last but not least, I wish to acknowledge the 728 cups of coffee I have had so far this year. Thank you.

Abbreviations

A	adjective
ACC	accusative
AUX	auxiliary verb
CL	classifier
COP	copula
D	determiner
DEF	definite
DIM	diminutive
DM	Distributed Morphology
DP	determiner phrase
FA	frequency adjective
FEM	feminine
FUT	future tense
GEN	gender
I	inflection
IMPERF	imperfect
INDEF	indefinite
INF	infinitive
KI	kind
KO	kind-to-object
MASC	masculine

N	noun
NEUT	neuter
NM	noun marker
NOM	nominative
NUM	number
O-ELAB	Object Elaboration
PA	partitive article
PD	predicate determiner
PASS	passive
PL	plural
PM	Predicate Modification
PRES	present tense
PROG	progressive
R	realization
SD	strong determiner
SG	singular
SFP	sentence-final particle
T	tense
TOP	topic
v	"little V"

Contents

Chapter 1

Introduction

Many different components are needed to form an utterance. A meaning needs to be expressed, within a certain context and with an adequate level of precision, so that the listener can successfully interpret the sentence. The grammatical pieces need to be put together in a way that fits into the syntactic structure of the given language. The structure needs to fit the meaning, both lexically and in terms of the semantic operations that take place. When a speaker uses spoken language, the structure needs to be mapped with the phonological and phonetic systems of a given language, so that the different pieces can be translated into verbal expression. Outside of this mechanical work, the utterance is typically not produced in a vacuum, and pragmatic rules are usually followed to ensure that the purpose of the utterance is clear. While we know that all these components are necessary in human language, there is no universal consensus on how or whether they interact with each other.

In this thesis, I focus on the interplay between syntax and semantics in the nominal domain, because of the interesting way language tends to reflect semantics in its noun phrase structure. For example, languages like English use morphosyntax to signal the difference between nouns that denote an indivisible mass, like *water*, and those that can be split up into countable units, like *dogs*. My question is: when we find languages that use syntax to express a particular meaning, for instance by adding a plural marker *-s* to *dog* to show that it is countable, does this mean that syntax itself carries

this meaning? Or is syntax a system that is separate from semantics? I see the nominal projection as a useful platform for the exploration of this fundamental question.

In the thesis, I consider three case studies that all relate to the topic of how semantics affects or is reflected in syntax, the specifics of which will become clear later: 1) alternating mass or count readings in Mainland Scandinavian; 2) frequency adjectives in English; 3) unexpected agreement in Mainland Scandinavian. Together, these case studies provide special insight into the meaning-bearing elements that may be present under the surface of noun phrases. Before delving into the specifics of these phenomena, I will set the scene and establish what the ultimate goal of the investigation is.

1.1 Nominal meaning in the syntax

What is the meaning of a noun? The simple claim that nouns "denote things" is not so easy to make when we consider nouns like *destruction* in the phrase *the destruction of the city* – now we have a noun that denotes an event. Still, on a simple level, nouns are words that describe the properties of entities in the world. Cognitively, humans are able to recognize objects and give them a kind of permanence that can be embedded in time and space, though to varying extents. M. C. Baker (2003) identifies two ways to identify nouns, one based on semantics and one based on syntax:

(1) BAKER'S (2003) DEFINITION OF A NOUN

a. Semantic version: nouns and only nouns have *criteria of identity*, whereby they can serve as standards of sameness.

b. Syntactic version: *X* is a noun if and only if *X* is a lexical category and *X* bears a *referential index*, expressed as an ordered pair of integers.
(M. C. Baker, 2003, p. 95)

So, even if the noun *destruction* is not "a thing", it can still be identified as something specific that can be referred back to. M. C. Baker's (2003) concept

of "criteria of identity" is based on the work of Geach (1962), Gupta (1980) and Larson and Segal (1995). Their definition of nouns is that they not only provide a property, like adjectives and verbs do – they have identity criteria, meaning that two nominal entities can be judged as being "the same" or not. Compare the nouns in (2) to the adjectives and verbs in (3):

(2) a. That is the same man that you saw yesterday.
b. Those are the same women as we saw last night.
c. That is the same water as was in the cup this morning.
d. The French want to have the same liberty as the Americans have.
(M. C. Baker, 2003, p. 101)

(3) a. #That is the same long as this.
b. #She is the same intelligent as he is.
c. #I saw Julia the same sing as Mary did.
d. #I watched Nicholas the same perform a stunt as Kate performed.
(M. C. Baker, 2003, p. 101)

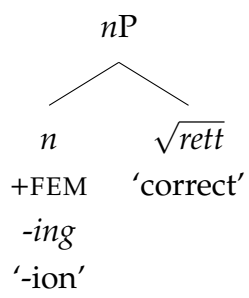
According to Geach (1962) and Gupta (1980), the inability to use adjectives and verbs in this way comes from a deeper reason than just syntax. Their intuition is that there is no way to pinpoint the adjective *long* or the verb *sing* as concepts that can be given an individual identity that is comparable to other individuals of the same type. Nouns are, in their view, unique in their role as referents with identity criteria.

Of course, the distinctiveness of nouns is also syntactic. In many languages, they can be accompanied by determiners, quantifiers and/or adjectives. Nouns can also carry features that other words cannot, such as grammatical gender (see Corbett 1991). The location of gender is controversial: some syntacticians believe it to be a noun-external feature located on a head in the nominal projection, while others think gender is part of the noun itself. Those following the Distributed Morphology framework (DM) place gender on a word-categorizing head n.[1] The head selects a root,

[1]See Lecarme (2002), Ferrari (2005), Kihm (2005), Lowenstamm (2008), Acquaviva (2008, 2009), Kramer (2009, 2014, 2015, 2016), Percus (2011), Deal (2016) and Fathi and Lowen-

which only carries encyclopedic semantic content, and introduces it into the syntax by providing it with a word class and the relevant feature(s) needed to interact with its environment. This is then the structure of a noun like *retting* 'correction' in Norwegian:

(4)



The root $\sqrt{rett}$ 'correct' itself is not a noun, but *n* carries a +FEM feature, and in the process of gender assignment by *n*, a noun is formed. It can then be the complement of heads higher up in the nominal projection, like Num or a determiner. *n*P is an alternative to N(P) in traditional frameworks, but the difference is that a gender feature is not in the lexicon of the root *rett* 'correct'. $\sqrt{rett}$ is neither a noun nor an adjective or a verb, and it thus cannot carry a gender feature. This view of categorization and feature assignment is my general point of departure, though I will adjust it slightly.

Setting syntactic features aside, one question is whether *meaning* comes from the lexical entry of the noun or if it is derived from syntax. I will use atomicity (i.e. countability) as an example of semantic meaning that is reflected morphosyntactically in many languages. In the literature, there are two approaches: 1) Nouns are inherently mass-denoting or underspecified for atomicity, and a countable reading only comes out when a dividing head is added to the nominal projection (Borer, 2005; Zamparelli, 1995, 2000); 2) Atomicity is stored in the noun's lexical entry (Cheng, Doetjes, & Sybesma, 2008; Krifka, 1989; F. Landman, 2011; Rothstein, 2017). Reusing DM terms, the question becomes: is atomicity in *n* or somewhere else in the syntax?

Borer (2005) makes the influential argument that nouns are "inherently" mass, and that a head can be added whose purpose is to divide the "stuff"

stamm (2016).

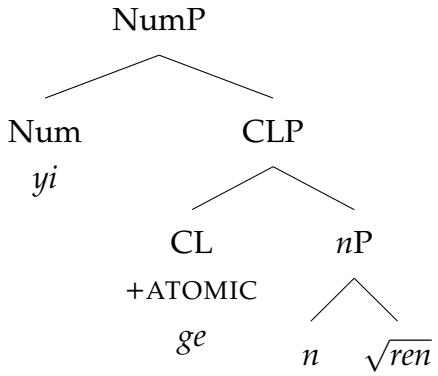
into a "thing". Once this has happened, the noun can be pluralized or counted. Borer (2005) uses classifier languages to argue for this view: in Mandarin Chinese, the formation of an NP with a count interpretation must supposedly involve the addition of a classifier phrase (CLP):

(5) a. *yi ge ren*
one CL person
'one person'

b. *y l mi*
one CL rice
'one grain of rice'
(Mandarin Chinese; Borer 2005, p. 86)

The structure of the noun phrase[2] *yi ge ren* 'one person' would be the following (again using the DM format):

(6)



Borer's (2005) approach means that countability is in the syntax (see especially pp. 93-101). A contrasting view is that a count or mass interpretation is in the lexicon. Cheng et al. (2008) make use of the creative process of using nouns with the opposite countability reading of what is expected (see Pelletier 1975), to argue against Borer's (2005) "inherent mass" approach. Cheng et al. (2008) point to a fact that Borer (2005) did not fully address, namely that in Mandarin Chinese, there *are* cases where count nouns, like *gǒu* 'dog', can appear without a classifier. But even when a classifier is miss-

[2]I will use the term "noun phrase" as a general term for any phrase that is part of the nominal projection. It is not meant as a claim about whether a determiner is present.

ing, which in Borer's (2005) analysis would predict a mass reading, the only possible reading of "dog" is a countable one (instead of "dog" referring to e.g. dog meat). A noun that is traditionally mass-denoting, like *shuǐ* 'water', has no problem referring to a mass, given the same context:

(7) a. *dì-shang dōu shì shuǐ.*
floor-TOP all COP water
'There is water all over the floor.'

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

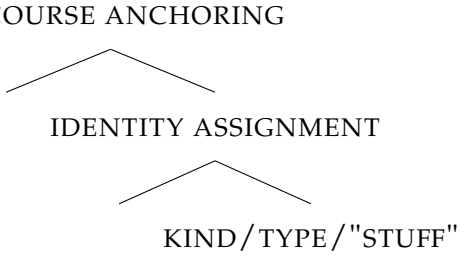
If nouns must inherently be mass-denoting, and there is no classifier in example (7b) to divide up the mass, we would expect *gǒu* 'dog' to refer to a dog substance, but this is not the case. Cheng et al. (2008) conclude that it is specified in the lexicon whether a noun is countable or not, and that alterations to this value can be made based on morphosyntax and/or context. Borer (2005) and Cheng et al. (2008) can be seen as opposites: Borer (2005) believes that nouns only denote quantized things if a specialized head is literally added to the syntax, while Cheng et al. (2008) predict that there is no syntactic distinction between e.g. the mass noun *coffee* and its coerced variant *a coffee* (meaning a cup of coffee, for example).

In order to discuss whether meaning is in the syntax or not, it is necessary to explain how I view the syntactic spine and its relationship with semantics. I subscribe to a theoretical framework in which syntactic features and heads are part of the lexical entry of a noun. In addition to the contribution of Borer (2005), there is work dedicated to constructing a framework of functional projections in which the noun itself has minimal meaning, leaving the job of semantic elaboration to the rest of the phrase (Wiltschko, 2014; Zamparelli, 1995, 2000). The general idea is that there are three layers, or "zones"[3], in the noun phrase that have different roles for the creation of an

[3]By referring to "zones", I am supporting a parallel between the nominal and the verbal

object. Nouns inherently refer to a type, meaning that at the lowest point, nothing has been semantically specified besides the general concept of an object. For example, the type *horse* does not yet have identity criteria – it is when more syntax is added that *horse* can be given reference. The zone immediately above the type zone is the one that does this work of individuating the type and turning it into a token. The third zone is the one in which this individual is transformed into a *discourse referent*. Here is a basic illustration that shows the structure, at this point without labels:

(8)



The location of elements such as adjectives affects the meaning of the noun phrase, and some adjectives are even restricted to one zone. We see this in adjective ordering. It is well-known that adjectives are somewhat rigidly ordered, almost universally (Cinque, 1994; Scott, 2002).[4] Below is one generalization of the hierarchy of elements in the nominal projection:

(9) determiner > ordinal number > cardinal number > subjective comment > ?evidential > size > length > heigh > speed > ?depth > width > weight > temperature > ?wetness > age > shape > color > nationality/origin > material > compound element > NP
(Scott, 2002, p. 114)

Truswell (2009) follows a set-up reminiscent of the one that Borer (2005) and Zamparelli (1995, 2000) propose. He makes a fundamental distinction between *subsective* attributive adjectives, like *wooden* or *rectangular*, which are "objective" and whose purpose is to create a subkind from the type repre-

projection. See Ramchand and Svenonius (2014) for a more elaborate comparison.

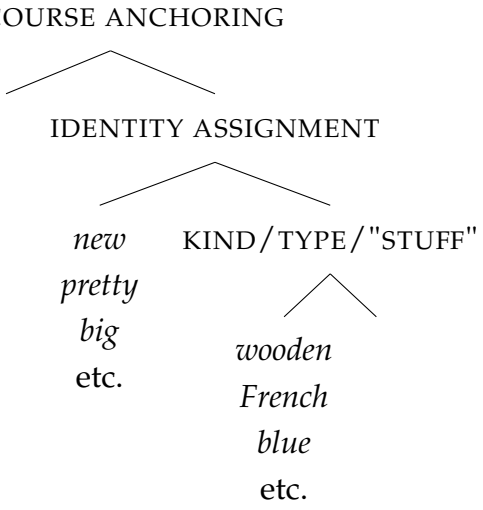
[4] A parallel can here be made to adverb ordering. See, e.g., Nilsen (2003) and Cinque (1999), as well as Ramchand and Svenonius (2014).

sented by the noun, and *intersective* attributive adjectives, like *big* or *pretty*, which describe a referent of that kind. While the empirical generalization has already been made that objective adjectives tend to be closer to the noun than subjective ones, Truswell (2009) makes a more general statement about what this means for the different levels in the noun phrase. He points out that there is more order fluidity than Cinque (1994) and similar work claim. Specifically, intersective adjectives always come before subsective ones, but within the two categories, there is some wiggle room. Examples (10a) and (10b) show that adjective order is free if both adjectives are intersective or subsective, respectively. However, in example (10c) we see that an intersective adjective like *big* must come before a subsective adjective like *wooden*.

(10) a. wooden red clogs – red wooden clogs
b. new big cuts – big new cuts
c. big wooden bridge – ??wooden big bridge
(Truswell, 2009, p. 527)

This suggests that subsective and intersective adjectives are separated in a more essential way. Truswell (2009) proposes that the two adjective types are part of different layers in the noun phrase. Below is where they would be located in the basic skeleton I presented:

(11)



Conceptually, this division is satisfying: building up a noun phrase from the bottom, we can start by generating a concept like *horse*, whose basic meaning can be specified within the lowest domain, before it is given an identity. Adding a modifier like *French* to the type creates a subtype that can now be implemented in the syntax. Once the type has been given an identity, properties can be assigned that are not part of the concept itself – instead, adjectives like *big* describe an individual of the *French horse* type. I believe a layered, semantics-friendly syntax to be a promising explanation for the linear adjective ordering that we observe. The adjectives can have variable ordering within the zone that they appear in, but they are locked into one zone that is determined by whether they describe an individual or a type.

Another problem to work out is coercion in which a noun phrase, because of context, ends up denoting an event. In the sentence below, because of the use of the verb *begin*, the object *the movie* seems to mean something like *watching the movie*:

(12) Tor Håvard began the movie.
$\sim$ 'Tor Håvard began watching (or some other event) the movie.'

It is in fact only the case that *the movie* refers to an event relating to the movie, since *begin* needs to select for an eventive argument. If one says *threw the movie* instead, the object must refer to an individual and the eventive reading cannot be called upon (one cannot "throw watching a movie").

The question I ask about this data should be familiar: should the fact that we here interpret *the movie* as *watching the movie* be represented in the syntax, or is there some other way to let pragmatics do this job? On one end, there are researchers that argue that verbs like *begin*, because they need an event to select, trigger the insertion of a nonovert event operator, or some other kind of type-shifter, into the noun phrase structure (N. Asher, 2011; Jackendoff, 1997; Levin, 1993; Pustejovsky, 1995). Others, however, argue that nouns may have several meanings in the lexicon, for example where one reading of *the movie* is entity-related and one is event-related, and that the reading that the listener ends up with depends on context (e.g. Egg

2003; in some sense Lascarides and Copestake 1998). Note that I will not approach this particular piece of data, but in Chapters 3 and 4 I will investigate phenomena that are related in that they involve a noun phrase that denotes an event. I make the parallel between *begin the movie* and these phenomena and argue that the insertion of a nonovert event is the best approach in these cases.

Overall, the aim of the thesis is to explore how context changes the meaning of a noun phrase. By the end of the thesis, it becomes clear that there is no single answer. I will show that coercion is not one phenomenon and that the methods by which a speaker changes nominal meaning may vary crosslinguistically, or even within the same language. I will now present my theoretical assumptions and some empirical discussion and background.

1.2 Theoretical framework

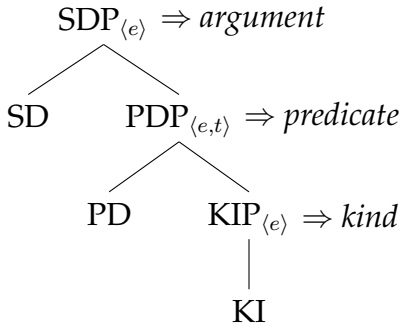
Some of my theoretical basis for the thesis is perhaps not the standard in the generativist tradition, so I will spend some time clarifying what my assumptions are. Specifically, I deem it necessary to explain: 1) the layered noun phrase structure, which I already mentioned; 2) how words are formed and spelled out; and 3) syntactic features.

1.2.1 The three zones in the noun phrase

The baseline assumption is now that the noun phrase contains three zones: nouns are born as basic kinds, and heads can be added to ascribe more properties to the noun (Borer, 2005; Wiltschko, 2014; Zamparelli, 1995, 2000). My primary inspiration in this regard is the structure that Zamparelli (2000) proposes. In his view, noun phrases consist of three layers. The first layer is the kind phrase (KIP), which is the "birth place" of entities. KIPs denote a basic entity type that is featurally stripped down, and it carries minimal meaning. The second zone is what he labels the predicate determiner phrase (PDP). PD has the purpose of turning the kind into an individual;

that is, PD gives us an object that has its own identity criteria and that can now be described as an entity in the world rather than as a type. This fits in with the syntactic output of PD insertion, namely that the noun phrase functions as a predicate and that it denotes a set of entities. The layer at the top is called the strong determiner phrase (SDP), which is where the noun phrase is turned into an argument, via for example a strong determiner, proper noun or pronoun. As an argument, the noun phrase now has an established referent that can be used in discourse. Below is a tree that summarizes the hierarchy:

(13)



In Zamparelli's (2000) view, SD and PD do not need to both be present for a full noun phrase (in the traditional sense) to be formed: SD and PD can be added at will when needed. This means that some noun phrases only have KIP and PDP, and some only have KIP and SDP. I will dispute this later and instead argue that "PD" is needed whenever we wish to form an SDP, but I will leave my argumentation for later.

One piece of data supporting a three-layered noun phrase structure is that it is impossible to coordinate an SDP and a PDP. Consider the failed attempt to do so below:

(14) a. ??Mark Twain is [$_{\text{SDP}}$ Samuel Clements] and [$_{\text{PDP}}$ a writer].
b. ??The "Gran Zebrù" is [$_{\text{PDP}}$ a mountain] and [$_{\text{SDP}}$ the "Königspitze"].
c. ??Diego della Vega is [$_{\text{SDP}}$ Zorro] and [$_{\text{PDP}}$ the cause of the turmoil].
(Zamparelli, 2000, p. 132)

It is also impossible to coordinate PDPs and KIPs. Below is an example from Italian:

(15) a. *Gianni è (un) professore.*
Gianni is (a) professor
'Gianni is a professor.'

b. *Gianni è (un) avvocato.*
Gianni is (an) attorney
'Gianni is an attorney.'

c. **Gianni è [$_{KIP}$ avoccato] e [$_{PDP}$ un professore].*
Gianni is attorney and a professor
(Italian; Zamparelli 2000, p. 132)

The separation of an SD layer and a PD layer is also supported by the interpretation of possessives. According to Zamparelli (2000), the possessive *'s* in English can be located either in Spec,SDP or in Spec,PDP, and the location of the suffix will determine which meaning is invoked. The sentence below is ambiguous between a definite and an indefinite reading (first pointed out by Mandelbaum 1994a, 1994b), even though possessives are typically regarded to be definites (cf. Barker 1991):

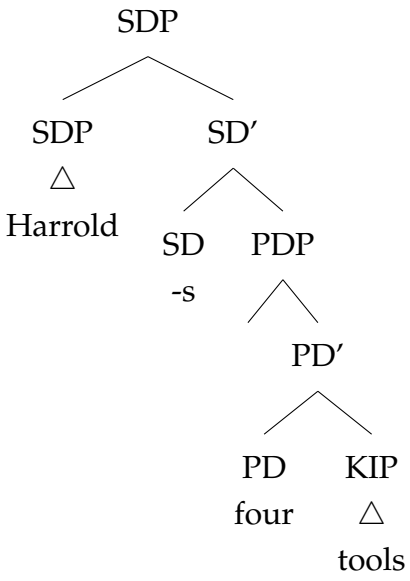
(16) Those are Harrold's tools.
Definite reading: 'Those are the tools that belong to Harrold.'
Indefinite reading: 'Those are tools that belong to Harrold.'
(Zamparelli, 2000, p. 136)

When a numeral is added, only the definite reading is available, so the sentence below does not work:

(17) #These are Harrold's four tools, and those, too, are Harrold's four tools.
(Zamparelli, 2000, p. 137)

Zamparelli (2000) solves this by saying that, because *four* is in the PD head, the only option is that *'s* is in SD:

(18)



The result is then that only the definite reading is available. The two (syntactic) points just presented illustrate some benefits to the three-layer approach.[5]

I will make one adjustment to this framework. If we consider the job of "PD" as individuating and placing an object in the world, we can imagine that this actually happens as a natural consequence of noun categorization and structure building, rather than through a specialized determiner. The general idea will still remain intact, in which there is a layer on top of KIP that provides the noun's identity criteria. However, I will show that this is done by the head that by default is present when an SDP is formed, namely a head such as *n* in DM, which takes a concept and provides its word class and other possible features like grammatical gender. My version of the head, which I will label "Noun Marker", has a more deliberate purpose in the three-layer structure than *n* does, in ways that will become clear later.

For now, the important details are that the noun phrase contains three layers and that each layer is tied to how an entity is interpreted, whether it

[5]But see Zamparelli (2000) for more arguments, namely *ne* or quantifiers under indefinites in Italian.

is grounded in the world and whether it can function as an argument.

1.2.2 Word formation and spell-out

A comment needs to be made on the framework I use for word formation and spell-out. Although the mechanical implementation does not always make a difference for the overall analysis, there are benefits to my preferred framework that will hopefully become clear in the analysis.

I use an exoskeletal, late-insertion syntactic framework, in which individual morphemes are inserted after syntactic operations have taken place, at which point the head's overt form is based on the morphophonological rules of that individual Vocabulary Item. Vocabulary Item consist of syntactic objects that carry syntactic-semantic features and roots with phonological exponents. A head is inserted if the Vocabulary Item contains the features present in the morpheme, and no features that are not present (in this sense not following the Cartographic perspective of, e.g., Cinque and Rizzi 2009). When there is competition, the item with the most matching features is chosen (Halle, 1997). For example, the French determiner system distinguishes between masculine and feminine (±FEM), definite and indefinite (±DEF) and singular and plural (±PL). The determiner ends up being spelled out based on which form is the most fitting in terms of the combination of gender, definiteness and number. Below are the options for which lexical entry to use. Each individual lexical head is specified for the relevant exponent as part of the memorized information that is part of the root (example from Svenonius 2012).

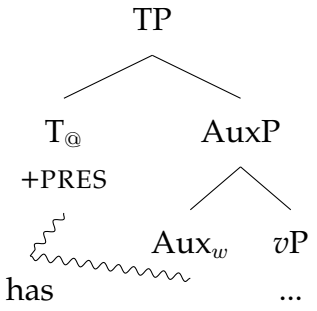
(19)
a. $\langle \text{D} [-\text{DEF}, -\text{FEM}, -\text{PL}] \rangle \Leftrightarrow$ *un*
b. $\langle \text{D} [-\text{DEF}, +\text{FEM}, -\text{PL}] \rangle \Leftrightarrow$ *une*
c. $\langle \text{D} [+\text{DEF}, -\text{PL}] \rangle \Leftrightarrow$ *le*
d. $\langle \text{D} [+\text{DEF}, +\text{FEM}, -\text{PL}] \rangle \Leftrightarrow$ *la*
e. $\langle \text{D} [+\text{DEF}, +\text{PL}] \rangle \Leftrightarrow$ *les*
f. $\langle \text{D} [-\text{DEF}, +\text{PL}] \rangle \Leftrightarrow$ *des*

Once each head has been inserted into the syntax, the word can be spelled

out through a *span* (Svenonius, 2012, 2016). A span is a head-complement sequence whose heads form a word together, an idea that serves as an alternative to head movement. A spanning theory will posit two syntactic features that govern word formation and ultimately spell-out: *w* provides the lexical access point, and @ provides a linearization point. As opposed to only being able to linearize a word at the uppermost head in which incorporation has taken place, spanning allows spell-out to take place at any head in the head-complement sequence. This means that heads that are higher up in the sequence can be spelled out as part of the word without the need to move the lexical head and incorporate it.

A span will be marked in the chapter using squiggly lines leading down to the word containing the relevant features located on the heads that make up the span. Below is the tree structure for the example given above, wherein T and Aux are linearized at the T head, allowing the lexical verb to remain unmoved. Aux is marked with *w* because that is the auxiliary verb's lexical access point (as in, it is the "head" of the word as it is spelled out). @ is located on T because the auxiliary *have* "moves" to T in English.

(20)



For most purposes in the thesis, this approach to spell-out will not make a difference, and the reader can make use of a movement-based theory if that is what they prefer. The main benefits of using this system are that: 1) several heads in the syntactic spine can make up a lexical entry; and 2) we do not need to worry about linearization taking place low in the projection, because we can avoid claiming that words are always spelled out at the uppermost landing site for movement.

1.2.3 Interpretable and uninterpretable features

Before discussing the extent to which meaning is in the syntax, it is important to understand the way that syntax introduces content through features. I define a feature as a property of a head that interacts with operations such as agreement, movement, selection and licensing. The term "feature" is not uniform, however. Adger and Svenonius (2011) distinguish between two kinds of syntactic features: those that communicate with the interfaces to sound and meaning, and those that only have a syntax-internal function. An example of an interface feature is focus, here expressed via stress, marked with capital letters (Rooth, 1985):

(21) a. I only claimed that CARL likes herring.
$\sim$ 'There are several people who *might* like herring, and out of all of them, it is only Carl that I claimed likes it.'
b. I only claimed that Carl likes HERRING.
$\sim$ 'There are several things that Carl *might* like, and out of all these things, it is only herring that I claimed Carl likes.'

This focus must be represented both in the syntax and in the phonology, and ultimately it affects the semantic interpretation of the sentence. An example of a syntax-internal operation is Agree, which remains syntax-internal and does not affect the meaning of the sentence.

Interpretability in natural language is not a clear-cut binary distinction, however. While features are categorized as either interpretable or not in the *syntax*, we see that some features are more likely to reflect semantics than others. Below is a scale that is meant to show an implicational hierarchy for predicting which features tend to be interpretable. One way to consider the scale is whether the feature value alters our cognitive understanding of the concepts or items referred to with the noun phrase.[6]

(22) Noun class $<$ Gender $<$ Atomicity $<$ Plurality

[6]Similar scales, based on animateness or individuation, have been proposed or made use of by among others Sasse (1993), Fraser and Corbett (1997, 2000) and Enger (2004, 2013).

By "atomicity", I mean the distinction between mass and count nouns, i.e., whether they can be divided into countable units. In general, we can view atomicity to be higher on the interpretability scale than gender. I will show in Chapter 2 that gender as a feature is uninterpretable in Norwegian. The result of this is that nouns cannot have their gender value altered through coercion to provide different semantic information about the noun. Atomicity, however, is generally an interpretable feature.

Consider other parts of the noun phrase that are optional but change our perception of the entity referred to, such as number and adjectival modification. Adding number or adjectives alters the way *horse(s)* is imagined in our minds:

(23) NOUN
horse = the concept horse

(24) NUMBER + NOUN
two horses = the concept horse, and the number of horses is two

(25) ADJECTIVE + NOUN
brown horse = the concept horse, and the color of the horse is brown

The alterations to the meaning of the reference of *horse* is an important point of comparison to gender. Atomicity is also more likely to relate to semantics than gender is. Mass-associated syntax more often than not leads to a mass reading:

(26) NOUN, COUNT SYNTAX
many horses = the concept horse, and there are more than one horse, and the horses are divisible into individual units

(27) NOUN, MASS SYNTAX
much horse = the concept horse, and the horse is in the form of a (contextually-determined) kind of horse matter (e.g., horse meat)

Altering the atomicity value of a noun, like what we see in *much horse* in (27), is a creative operation called grinding (Pelletier, 1975), and the phenomenon

will be at the heart of Chapter 2.

In natural language, gender often does not relate one-to-one with meaning. See below an example from Norwegian, which is a language that has gender:

(28) *ein* *bil*
a.SG.MASC car.SG.MASC
bil = the concept car

(29) **ei* *bil*
a.SG.FEM car.SG.MASC

As you can see, changing the gender of a noun not only does not affect interpretation; it straight up makes the sentence unacceptable. This fact leads me to the conclusion that gender is, typically, lower on the interpretability scale than atomicity is.

However, this is not universally the case. For example, Dyirbal has four genders that have a strict connection to meaning associated with the referent (Dixon 1972, p. 308–312; table taken from Corbett 1991, p. 16):

Table 1.1: Gender assignment in Dyirbal.

Gender	**Semantics**
gender 1 (*bayi*)	male humans, non-human animates
gender 2 (*balan*)	female humans, water, fire, fighting
gender 3 (*balam*)	non-flesh food
gender 4 (*bala*)	residue

I will discuss gender's connection to semantics further in Chapters 2 and 4. One final argument against a strict scale is that there are exceptions to the rule that nouns with count morphosyntax are countable, and nouns with mass morphosyntax are uncountable, for example *furniture*, which is mass in English but count in languages like Norwegian (*møbel* 'furniture'). Another example is pluralia tantum nouns, such as *pants* or *scissors*. So, when I use the term "feature" in the thesis, referring to both gender and atomicity, these are not identical kinds of features.

1.3 Empirical background

Some words need to be said for my assumptions about crosslinguistic variation, and the reasoning behind choosing which phenomena to investigate. I will largely base my arguments on data from English and Mainland Scandinavian, especially Norwegian, for reasons that will soon become clear.

I subscribe to a point of view where the lack of an (interpretable) syntactic feature does not mean a lack of effability (Ramchand & Svenonius, 2008). The crosslinguistic variation of the presence or absence of features, then, does not matter as much as traditionally assumed; interpretable features are not the sole carrier of meaning. Ramchand and Svenonius (2008) argue specifically that semantic information is divided into two parts: either it is an inherent part of the syntax-semantics computation, or it is provided by the Conceptual-Intentional systems (named so by Chomsky 2004).[7] One example is Tense: although Mandarin Chinese does not have a Tense feature, it *is* possible to express the time of a described event relative to the time of speaking. So, while all languages in principle have the same ability to express a desired meaning, not all of them do so using the same method. This is where it becomes important to consider different languages, especially those that grammaticalize or somehow formally represent meaning in ways that English cannot. I will now present some of the empirical considerations guiding my investigation.

Norwegian is a language that is interesting because of its noun phrase structure and, as I will show, unique method for categorizing nouns. I will show that, in Norwegian, there are circumstances where grammatical gender affects the atomicity value of a noun in the semantics (see Chapter 2). This is a case of syntax restricting a semantic operation, which warrants consideration of how atomicity should be reflected in the syntax and lexicon. The specific case study from Norwegian that I look into cannot be replaced by a similar study of English, since Norwegian has a gender system and

[7] Ramchand and Svenonius's (2008) proposal counters a one-to-one mapping between syntax and semantics, such as the direct comparison of Chierchia (1998a, 1998b) of NP/DP-hood and the argument/predicate distinction.

displays the unique behavior that it does. English would then not serve as a fruitful source of novel investigation into the relationship between syntax and semantics in this regard.

Another major theme in the thesis is "invisible" content in noun phrases, specifically those in which context facilitates the interpretation of an event even if this event is not overtly visible to a listener. I look at two different case studies here, one from English and one from Norwegian. In the first case, where a frequency adjective is able to modify the distribution of such a nonovert event, I use English. This is largely because English more clearly allows the sentences in question, under the relevant readings. The possibility to add an adjective associated with events inside of a noun phrase that itself does not denote an event gives us useful information about how the meaning of a sentence affects its syntax. English then gives us the opportunity to explore noun phrase-internal events through its use of these event-related adjectives, and the outcome of this exploration will impact how we view the noun phrase structure as a whole, in principle in any language.

I use Norwegian for a different sign of a nonovert event in the noun phrase structure, in which gender agreement reveals such an event's presence. English obviously cannot be a source of investigation here, since, again, English does not have gender. This is again a situation where Norwegian can provide insights into the interplay between meaning and structure. To sum up, my choice of language is based on how the individual language can feed into our theory of language as a system. While my analyses do also serve as descriptions of the traits of the languages themselves, this is more so the result of *using* the language for a larger theoretical purpose.

1.4 Research questions

The large-scale question leading the thesis is whether semantics should be represented in the syntactic nominal projection. Within this inquiry, there are three main questions that I will attempt to answer:

1. **Atomicity**: Is the semantic concept of atomicity a feature on a syntactic

head, or is such meaning in the lexicon separate from syntax? Is there crosslinguistic variation in this regard?

2. **Events**: When a noun phrase appears in syntactic settings where one would expect an event, is this a sign that there is nonovert content within the noun phrase? If so, what would such a nonovert element look like?

3. **Agreement**: How can we use syntactic relationships, such as agreement, to test whether syntax has adapted to semantic operations?

Each chapter will have its own list of questions to answer, but these are the overarching ones that will guide the thesis. With these questions in mind, I hope to contribute to a better understanding of the interaction between syntax and semantics. Ultimately, I advocate that pragmatic creativity and the syntactic-semantic systems work hand in hand to form the final meaning of an utterance.

1.5 The structure of the thesis

The thesis is dedicated to three main empirical puzzles, the solutions to which will contribute to our understanding of noun phrase structure, events, gender and, importantly, the relationship between the syntactic and semantic inventories that we use in language. This is the thesis structure:

In Chapter 2, I discover a special relationship between gender and atomicity in Mainland Scandinavian. I propose that atomicity can in some cases be represented as an (interpretable) feature in the syntax, and that the presence of this feature blocks the potential for a gender feature.

In Chapter 3, the focus is on a subset of frequency adjectives in English that require a certain eventive semantic environment. I argue that this semantic need can trigger the insertion of syntactic content in order to accommodate the semantics and pragmatics behind the sentence.

Chapter 4 is concerned with one final case study, in which I explore the use of the neuter "gender" in Mainland Scandinavian in situations related to

the ones already considered. I find that the neuter is deeply connected to the problems investigated, in that the neuter agreement form shows up when the relevant nominal structure does not have a gender feature immediately available.

Chapter 5 provides a brief discussion and conclusion.

Chapter 2

Gender and atomicity in competition: grinding and portioning

2.1 Introduction

Languages categorize nouns according to semantic and/or syntactic factors. Two of the types of categories that can be assigned to nouns are gender and classification. One problem with the way these two types of categorization have been described is that they are not often directly compared (but see Audring 2016), even though they are both described as related to meaning and affecting inflection and/or agreement (Corbett, 1991). The goal of this chapter is to compare them directly, as categorizing features in the nominal structure, and ultimately make a statement about the nature of features and the contents of the lexicon. The data will primarily be drawn from Norwegian, but the judgments are mostly shared across Mainland Scandinavian. If the example is not in English, and the language is not specified, the reader can assume that it is in Norwegian. I will also comment on data from other languages where relevant.

One difference between gender and atomicity (as a subgroup of classification) is the extent to which meaning is involved in their interpretation.

Atomicity is overwhelmingly tied to a cognitive understanding of whether an entity is viewed as divisible into atoms or as an indivisible substance. For gender, it is controversial whether it is inherently and always connected to semantics. Corbett (1991) does not argue for a universal answer, but rather that some languages have a strict one-to-one mapping between gender and semantic categories, one example being Tamil (reported by Andronov 1966; Arden 1942; R. E. Asher 1985), while others tie gender to morphophonology. Kramer (2016) points out the fact that even languages that generally have a close correlation between grammatical gender value and semantics still have exceptions, concluding that gender cannot be purely semantic and must be represented through a feature in the syntax. I will concede that in many languages, there is a strong correlation between gender and semantic categorization. However, the correlation often stops at the semantic gender (or biological sex) of humans, and the rest of the nouns are arbitrarily assigned a gender. For this reason, I will follow Kramer (2016) in treating gender as a syntactic feature.

The final problem is how atomicity ends up in the interpretation of a noun phrase. Is atomicity lexically specified in the lexicon? To what extent does pragmatics play a role, and does the relationship between syntax and pragmatics vary crosslinguistically? In one camp there is the argument that nouns are by default mass and that a count reading comes from a dividing head in the syntax (Borer, 2005). On the other end is the view that nouns are lexically specified for atomicity but that syntax and/or pragmatics can in some languages alter the interpretation that one ends up with (Cheng et al., 2008).

The main question leading the chapter is to what extent gender and atomicity are comparable as features in the nominal structure, in terms of location and level of interpretability. I will show that, in Norwegian:

1. Gender is an uninterpretable feature that is present *or* absent in the lexicon, depending on the noun.

2. Atomicity is an interpretable feature that is present or absent in the lexicon, also depending on the noun.

3. These features are both located on a special noun-categorizing head that is adjacent to the kind phrase KIP.

4. The gender and atomicity features are in complementary distribution on this noun-categorizing head.

The chapter is structured as follows: in section 2.2, I discuss the syntax and semantics of gender and conclude that gender must be located on a special noun-categorizing head; in section 2.3, I discuss the different approaches that have been taken to the mass-count distinction, both in the syntax and in the semantics; in section 2.4, I present data from Norwegian that challenges present literature on countability and its (in)flexibility; in section 2.5, I analyze the Norwegian neuter as a sign of the absence of a gender feature; section 2.6 concludes the chapter.

2.2 Gender

Grammatical gender is a controversial topic, in terms of its origin, purpose and characteristics. One fact rarely disputed is that the grammatical gender of a noun is fixed, meaning that for each noun, acquirers need to memorize the gender of that noun. There is however no full agreement on the extent to which gender must be connected to semantics, or whether it is simply a method used to put nouns into categories to ease the process of vocabulary acquisition. Without spending too much time on this, I will assume that there is likely to be crosslinguistic variation here. I will now discuss the nature of gender before determining where in the syntactic structure a gender feature is likely to be located.

2.2.1 Gender and categorization

It may be the case that, in some languages, gender *was* directly linked to meaning, but that the genders gradually drifted into categories that do not reflect the lexical semantics of the noun. Meaning is often not completely unrelated, however: the majority of gendered languages at a minimum

have a masculine and a feminine gender, depending on the biological sex of humans (Corbett, 1991). The World Atlas of Language Structures (WALS) reports that, out of 112 gendered languages spread out relatively evenly across the world, 84 have a sex-based gender distinction and 28 do not.[1] However, there is disagreement as to whether gender is *always* connected to semantics.

From a synchronic perspective we see that there are noun-categorizing languages that have a close connection to semantics. In Tamil, masculine gender is specifically for gods or male human, feminine gender is specifically for goddesses or female humans and neuter gender is for anything else (originally reported in Andronov 1966; Arden 1942; R. E. Asher 1985; data summarized by Corbett 1991). A second example is Diyari, which has one gender for all animates whose reference is distinctly female, and a second gender for anything else (P. Austin, 1981). I need to add, however, that if gender had a one-to-one connection to semantics, it would become unclear how genders are different from classifiers (see Audring 2016 for a direct comparison).

I reject a purely semantics-based approach to gender assignment. First, there is an overwhelming number of languages that have exceptions to the categories they are supposedly connected to. For example, the Spanish noun *persona* 'person' takes the feminine gender form but is used regardless of the gender of the person. We also see in Zande, which has the genders masculine (male humans), feminine (female human), animal (other animate) and neuter (the rest), that human children are assigned neuter gender (Claudi 1985; summarized in English by Corbett 1991). In Ket, there is a connection between human genders and grammatical genders, but the rest is unpredictable (Krejnovič 1961, 1968a, 1968b; translated and provided in English by Corbett 1991, p. 19):

[1] `https://wals.info/feature/31A#2/26.7/148.9`, last accessed 26 June 2023.

Table 2.1: Genders in Ket.

Masculine	**Feminine**	**Neuter**
male humans	female humans	
male animals	female animals	
some other living things	other living things	part
fishes (three exceptions)	three fishes: burbot,	(of whole)
	ruff, perch	
all growing trees	some plants	
large wooden objects		the residue
(stakes, poles, hoops,		(the majo-
large sheets of birch-bark)		rity of nouns)
the moon	the sun (and some other	
	heavenly bodies), fire	
some religious items	some religious items, and some	
	skin diseases	

Secondly, we see that there are languages where any human noun can be derived into a neuter gender noun, while still keeping its identity as a human. One example is from Dutch, which has two genders, common and neuter. The diminutive suffix *-je* forces neuter gender assignment regardless of whether the noun was common gender to begin with. Here are some examples of human nouns that "should" be common gender under a semantics-based approach:

(1) *het* *vriend-je*, *het* *baas-je*,
the.NEUT friend.COMMON-DIM the.NEUT boss.COMMON-DIM
het *visser-tje*, *het* *boef-je*
the.NEUT fisherman.COMMON-DIM the.NEUT rascal.COMMON-DIM
'the boyfriend, the dog owner, the fisherman, the rascal'

Corbett (1991) makes the point that native speakers make few or no mistakes. This fact does not depend on semantics: in languages where the semantics associated with gender is largely arbitrary, such as the division of feminine and masculine gender for non-human nouns in languages like

French and Spanish, there is still a low number of errors. To conclude this brief discussion, while there are languages where gender categories *are* correlated with semantic categories, this cannot be said to be a general fact.

As I leave this topic for now, the question moving forward is the location of gender in the nominal structure. In the following, I will present the canonical proposals that have been laid out in the literature, before concluding that neither is fully satisfactory. I will show that the analysis that best fits the data is one in which gender is located on a special noun-categorizing head labeled Noun Marker (NM), which can be part of the noun's lexical entry.[2]

2.2.2 The location of gender in the syntax

The question of the syntactic location of gender closely ties into the larger question of what is stored in the lexicon. Which features are semantically interpretable, and which features simply have to be memorized for each noun? The location of gender is not uncontroversial (among others, Alexiadou 2004; Harris 1991; Kramer 2016; Picallo 1991; Ritter 1993). There are three main accounts to consider, which are named after the proposed location of gender: the NumP analysis, the GenP analysis and the N/*n* analysis. I will go through each analysis and then argue for a fourth option in which a noun-marking head can select a kind-denoting noun and provide its identity criteria (M. C. Baker, 2003), which suits the natural assumption that, when a larger nominal projection is formed, the noun needs to be identifiable. I believe that this fourth option can best cover the relevant parts of my specific investigation, and I will show in Chapter 3 that it serves a special role in my adaptation of Zamparelli's (2000) framework of the noun phrase structure (summarized in subsection 1.2.1).

[2]I remind the reader that "lexical entry" in my framework of assumptions is not an inert conceptual item. It can involve featural information in a contiguous span rooted at the bottom of the nominal functional sequence. In my phrase structure representation, NM is the closest featural head.

2.2.2.1 The NumP analysis

Some argue that gender is located in Num (Ritter, 1993). The substantive claim of this approach is that gender, as a syntactic feature, is at the same functional height in the hierarchy as syntactic features corresponding to singular versus plural number. One piece of data used to justify this view is that in Italian, the suffix *-i* is used for the masculine plural, while *-e* is used for the feminine plural. The argument is that, because they are exponed with one portmanteau morpheme, they are features on the same head.

(2) *ragazz-i*, *ragazz-e*
young.person-MASC.PL young.person-FEM.PL
'boys, girls'
(Italian; Ritter 1993)

According to Ritter (1993), gender and number cannot be exponed together if they are on separate heads. But while it is not uncontroversial in exoskeletal frameworks exactly how portmanteau morphemes are spelled out,[3] the general consensus is that the features that form a portmanteau are still located on separate heads (Halle & Marantz, 1993; Noyer, 1992; Radkevich, 2010; Trommer, 2010; Williams, 2003; Woolford, 2016). The heads can be fused together as long as the relevant heads are adjacent to each other in a head-complement relationship (see e.g. Williams 2003). As such, there is likely nothing standing in the way of a number-carrying head and a gender-carrying head being spelled out together as a portmanteau morpheme, as long as they are locally positioned in relation to each other.

Singling out languages that spell out number and gender in one morpheme is not enough to make a generalization about these heads in general. An overwhelming number of languages do *not* spell out number and gender on the same head (Picallo, 1991). In Catalan, nouns have separate heads to inflect for gender and number:

[3]See for example Noyer (1992) Williams (2003), Radkevich (2010), Trommer (2010) and Georgi (2011).

(3) *els* *goss-o-s*
the.MASC.PL dog-MASC-PL
'the dogs'
(Catalan; Picallo 1991)

If we assume that inflectional elements head their own projections, this should suggest that the gender and number features are located on different heads. Picallo (1991) uses this to argue that there is a Gender head dedicated to the gender feature, an idea that I will explore but eventually dismiss in the following subsection.

Another argument against a NumP analysis, argued by Kramer (2016), is that the noun head and the NumP would need to be adjacent to each other, so that the head in Num can be spelled out as a suffix on the noun (assuming the Mirror Principle for word formation; see M. Baker 1985; Brody 2000). We can test this by adding an adjective to a noun phrase structure: numerals in NumP are consistently shown to be located above adjectives, and this is equally true in gendered and genderless languages. When using a numeral and an adjective, the adjective comes in between the numeral and the noun. Below is an example from Norwegian:

(4) *dei* *tre* *snill-e* *gut-ane*
the.PL three kind-PL.DEF boy.MASC-DEF.MASC.PL
'the three kind boys'

If gender and number were located on the same head, number would always need to be spelled out immediately before or after the noun, but this is not the case. A non-NumP analysis would explain this fact about spell-out by keeping gender either on a gender-specialized head or on N/n itself.

Finally, we see that number values can be changed, but gender values cannot. In Norwegian, one can choose whether to use the masculine noun *gut* 'boy' with a +PL or −PL feature value, and the masculine form remains. There is however no option to change the gender of a noun. See the minimal pair below, in which (5a) shows the ability to use singular or plural with *gut* 'boy', and (5b) shows the inability to change the −FEM value of the noun:

(5) a. *ein* *gut,* *fleire*
a.SG.MASC boy.SG.MASC several.PL.MASC
gut-ar
boy.PL.MASC-DEF.SG.MASC
'a boy, several boys'

b. *ein* *gut,* **ei* *gut*
a.SG.MASC boy.SG.MASC a.SG.FEM boy.SG.MASC

There is no context in which **ei gut* 'a.SG.FEM boy.SG.MASC' can be considered syntactically acceptable. Number and gender are different in that a noun's gender has a fixed value which I will show is part of the noun's lexical entry. This is not the case for number, whose insertion adds meaning to the noun and is often spelled out as its own exponent. Number and gender are thus two different kinds of feature, like I discussed in subsection 1.2.3.

Ultimately, I dismiss the NumP analysis. In addition to the counterarguments presented here, we may need to revisit the idea that gender is a feature that provides content outside of the lexical bundle of features of the noun.

2.2.2.2 The GenP analysis

Others have argued that gender is located on a Gen head (de Belder & van Koppen, 2015; Koopman, 2013a, 2013b; Picallo, 1991). I reported in the previous subsection that Picallo (1991) uses Catalan data in which gender and number inflection are located on different heads. I will explore this idea now.

Harris (1991) and Alexiadou (2004) argue that what Picallo (1991) categorizes as "gender inflection" in languages like Catalan are actually inflection classes, which might explain exceptions like the feminine inflection of gender-neutral human nouns like *persona* 'person' in Spanish. Harris (1991) shows that "gender-categorizing" post-stem vowels in Spanish also show up on adverbs (examples from Harris 1991, pp. 33-34):

(6) a. *dentr-o*
inside

b. *fuer-a*
outside
c. *lej-os*
far
(Spanish; Harris 1991)

It is especially clear from the fact that these suffixes appear on adverbs that they are unrelated to grammatical gender, though they are the same suffixes that inflect nouns:

(7) a. *muchach-o*
boy
b. *muchach-a*
girl
c. *cosm-os*
cosmos
(Spanish; Harris 1991)

As such, these endings cannot simply be exponents of grammatical gender.

One of the reasons that I dismissed a NumP analysis was that it predicts gender to be higher up than the data shows that it is. In contrast, a GenP analysis could work as long as the Gen head is immediately adjacent to the noun. This is borne out if we consider the fact that when a language expresses gender as a suffix on the noun, and there are other suffixes present, the gender suffix appears before other suffixes. For example, in Norwegian the (somewhat archaic) human female-forming suffix *-inn(e)* appears before the suffixed definite article *-a*:

(8) *lærar-inn-a*
teacher-female-DEF.FEM
'the female teacher'

What would it mean for gender to be its own projecting head? Kramer (2016) argues against a GenP analysis, appealing to three particular characteristics of projection: 1) that it has several syntactic effects, such as agree-

ment and that its head can accept movement into it; 2) that it connects to the semantic interface; 3) that it connects to the morphophonological interface (Chomsky, 1995, p. 355). Kramer (2016) concedes that gender contributes with agreement, but she claims that there is no sign of head movement and that gender does not consistently interface with semantics or morphophonology.

I wish to return to the point that a gender value cannot be changed, regardless of the semantic purpose of such an alteration. For example, even though semantic human gender and grammatical gender seem correlated in a lot of languages, a gendered language like Norwegian cannot change the gender of a noun to specify the semantic gender of the person. The example below shows this. While the noun *student* 'student' is grammatically masculine, this does not mean that the human referent must be masculine, and it does not work to use the feminine indefinite article *ei* in order to express that the student is a woman:

(9) **Ei student kom innom kontoret mitt.*
a.FEM student.MASC came by office.DEF my
Intended: 'A female student came by my office.'

If gender had been located in a specific, lexically external head, we would expect the gender value to have a different ±FEM value when desirable.

The GenP analysis characterizes gender as a piece of functional information that bears a feature that is clearly syntactically active. Gender would then be a functional head separate from the "root" (or, in my framework, the "kind" head KI) that is unique because it is the head that is the closest to the "root". Gender is then separate from the head that gives the noun its lexical category and identity criteria. The reason for this is theory-internal: many theories are forced into placing the gender feature on a functional head that is separable from the lexical item. However, is the syntactically active feature of gender simply associated with the lexical root, or is it parasitic on some other independently existing functional or semantic information, like Num or *n*? In DM, no gender information can be placed on a root, so supporters of such a framework depend on functional information to fill this

in. However, the alternative that DM provides associates gender with an inherent aspect of the noun's lexical entry, which may make it more desirable than the GenP approach.

To summarize, I reject the GenP analysis on the basis of the lack of proof that Gen is a projecting head and because gender values are fixed to one value. Below I will show the strengths of the final competitor in the literature, the N/*n* analysis, before that is dismissed as well. While it seems correct to view gender as an inherent part of a noun's identity, the fluidity of gender values that such a view suggests does not fit in with the rigidity that we find in the data.

2.2.2.3 The N/*n* analysis

The N/*n* theory of gender assignment places the gender feature in the lexical entry of the noun. In a standard framework, this means that gender is a feature of N (Alexiadou 2004; Carstens 2000, 2010, 2011; Harris 1991; Ralli 2002, 2003; Roca 1989; see also Wechsler and Zlatić 2003), while those following the Distributed Morphology (DM) framework would place the feature on the noun-categorizing head *n* (Acquaviva, 2008, 2009; Deal, 2016; Fathi & Lowenstamm, 2016; Ferrari, 2005; Kihm, 2005; King, 2015; Kramer, 2009, 2014, 2015, 2016; Lecarme, 2002; Lowenstamm, 2008; Percus, 2011). Gender is posited to be on *n* in DM because gender interacts with other processes associated with *n*, specifically nominalization and inflection/declension class (Kramer, 2016). For instance, we could say that a nominalizing morpheme such as the Norwegian *-ing* (here equivalent to the English nominalizing *-ing*) always carries a feminine gender feature, seeing as these nouns will always end up feminine:

(10) *vask-ing*, *bad-ing*, *frys-ing*
wash-ing.FEM bath-ing.FEM freeze-ing.FEM
'washing, bathing, freezing'

There are some benefits to a lexical analysis.[4] First, such an analysis can ex-

[4]See Kramer (2016) for more in-depth argumentation.

plain why gender morphemes show up right next to the noun, before other kinds of morphemes, which is a problem for the NumP analysis. Secondly, it can explain morphophonological effects. In Modern Hebrew, feminine nouns have a suffix that marks gender. An N/*n* analysis would place feminine gender as part of the lexical entry of the noun, and the suffix would be the result of a lexical rule or post-syntactic realization; a *n* analysis would simply say that the suffix is located on *n*.

However, the lexical approach, as it currently stands, tries to connect syntactic and semantic gender, which ultimately results in some incorrect predictions. Proponents of the N/*n* analysis focus on the fact that there *is* often a correlation between grammatical gender and semantic gender and/or humanness. In an N analysis, there would be a lexical rule in which semantically female gender is expressed in the syntax as feminine grammatical gender (Harris, 1991); in a *n* analysis, the +FEM value can be either interpretable or uninterpretable (Kramer, 2009, 2014, 2015; Percus, 2011), meaning that semantic gender and grammatical gender are the same feature. As for nonhuman nouns being assigned genders like masculine and feminine, which are associated with humans (or some animals), the N analysis says that gender is simply listed in the lexical entry of the noun; the *n* analysis makes use of the interpretable-uninterpretable flexibility to say that a noun can be assigned an uninterpretable ±FEM value, even if the noun is not semantically female or male.

Again I wish to counter the idea that semantic and grammatical gender must be connected – remember the comparison made in the introduction chapter between a gender-carrying head and a number-carrying head, and how changing e.g. the singular noun *horse* to the plural noun *horses* causes a change in meaning, while changing the gender of a noun is impossible. It seems likelier that (at least Indo-European) languages initially based grammatical gender on semantic factors and world knowledge, but that our current understanding of the gender of nouns is based on memorization, leaving behind meaning as a factor. That being said, while this is a part of the N/*n* analysis that I discard, I support the main message behind it: gender is part of the lexical entry of the noun. Before presenting my own

proposal, one final detail needs to be determined: should the gender feature be a feature on the nominal head itself, or should there be a a categorizer dedicated to gender assignment?

An analysis of gender features being interpretable *or* uninterpretable predicts that gender values are flexible, and that changing this value could change the meaning of the noun. I showed in subsection 1.2 that this is not the case, but will repeat the main idea here. We can compare this prediction to the ±PL feature, whose value affects how we interpret the noun phrase as a whole: whether one says *one car* and *two cars* results in different interpretations of what we will imagine for the noun *car*. In contrast, the gender value of a noun typically cannot be altered. This does indicate that gender is inherently connected to the lexicon, while plurality is on a separate head, but it leads us to the conclusion that gender is strictly an uninterpretable feature (following Harris 1991). The intuitive connection to meaning in some languages may come from the historical origin of gender as a meaning-based category in that language, or it may be a different kind of categorization, such as classification.

An analysis involving *n* specifically aligns the most with my own approach, but I will make a few adjustments. One of Kramer's (2016) main arguments for a *n* analysis instead of an N analysis has to do with the nature of parametric variation. In a Chomsky-Borerian view, parametric variation has to do with which features are (or are not) present on *functional* heads, but since nouns are lexical heads, there would be no room for the variation we see. It then makes sense for the gender feature to be in the kind of head that forms a word with the noun without lexical items being inert roots. This will explain why languages vary with respect to: 1) the number of genders they have; 2) which genders are assigned to semantically arbitrary nouns (such as how *persona* 'person' is feminine in Spanish but *person* 'person' is masculine in Norwegian); and 3) whether they even have a gender feature.

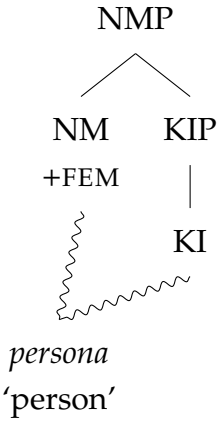
Out of the approaches that currently exist in the literature, the *n* analysis seems like the most accurate one in terms of the linear appearance of gender morphemes and in sticking to the standard idea of parametric variation. However, the feature needs to be detached from semantic gender. In the

following, I present my proposal for how gender is assigned to a noun.

2.2.2.4 Proposal: The Noun Marker (NM) analysis

I will treat gender as a feature located on a Noun Marker (NM) head. This head is meant as a more general categorizer and may contain other features than gender, when relevant. When NM is in the structure, it forms a lexical entry together with the kind head ("N" in traditional frameworks) in the form of a span. The value of the gender feature is listed and memorized in the lexicon, and it cannot be altered. For example, the feminine Spanish word *persona* 'person' is made up of the KI and the NM heads, *person* and *-a* respectively, but together they form the span *persona* and are spelled out as one word:

(11)



My analysis requires that gender is assigned by a head separate from KI, but it solves the problem that Kramer (2016) brings up about a GenP analysis, namely that a separate head Gen cannot be a projecting head because it is not a landing site for movement. Using spanning as an alternative to head movement, the formation of a span containing NM and KI means that NM must be a projecting head, and NM must be adjacent and immediately available to the KIP phrase. I treat gender as a generally uninterpretable feature, unlike Kramer (2016). There is then no problem with a separate-head analysis of the location of a noun-categorizing feature such as gender.

My approach to the gender-assigning head is also going to be helpful in

the context of Zamparelli's (2000) three-layer noun phrase structure, which I use as a point of departure (see subsection 1.2.1). I argue that NM fulfills the role that Zamparelli (2000) attributes to a predicate determiner (PD). Because NM is a head that places a noun into a word class and provides its reference, it becomes unclear how its role and PD's role differ. Instead of "PD", I will from now on treat NM as the head that transitions a kind into an individuated entity that other heads can select, such as strong determiners. A kind-denoting noun *person* 'person' in Spanish does not itself have a gender feature. It is when an entity is needed by the syntax around it that the entity must have an NM that can provide the relevant syntactic feature(s) for agreement purposes. The gender-containing NM is inserted, which leads to the addition of the feminine *-a* suffix.

The role of NM, as a head that provides identity criteria for nouns, is important for reasons that will become clear in Chapter 3. For this chapter's puzzle, the goal is not to make a bold claim about gender and the head it is contained in. The reader may think of NM as the *n* head in the sense that it is *n* that hosts features such as gender and provides identity criteria for the noun. NM is only different from a DM style *n* head in that: 1) gender, or whatever else may be in the noun-categorizing head, is outside of the KIP itself, and it is added for syntactic reasons; 2) when present, NM is part of the lexical entry for the noun, and the noun and NM form a span together.

2.2.3 Summary

After considering different arguments for where gender is located, I conclude that it is a feature on a noun-categorizing head that I label NM. An analysis in which gender is an uninterpretable feature on a noun-categorizing head can help us explain a number of facts:

1. In languages that mark gender as a suffix, this suffix linearly appears closer to the nominal head than other suffixes do.

2. Nouns are rigid in their gender value, so their gender must be part of their lexical entry.

3. There is no uniform, one-to-one mapping between grammatical and semantic gender.

Moving forward, I will assume the placement of gender in NM. Crucially, however, NM is not identical to the previously proposed Gen head in that it can categorize nouns in other ways, meaning that if a language does not have gender, it will still have an NM as part of the noun's lexical entry. The next question to answer is then which other features may be located in NM and, on a larger scale, what is part of the lexicon. In the following section, I will consider another feature that is also controversial in terms of whether it is an inherent part of the noun, namely the mass-count distinction.

2.3 Mass and count nouns

I have just concluded that, in languages that display a gender feature, this feature is located in a noun-categorizing head NM. Similarly to the case of gender, it is also controversial whether the mass-count distinction, or *atomicity*, is part of the lexicon, or whether it is derived using extra structure in the syntax. Within this question is a larger one of what syntactic information is part of the lexicon and what is externally introduced by syntactic heads. I will begin this section by giving a brief overview of how the mass-count distinction is expressed in Germanic before going deeper into the controversy of the semantic and syntactic nature of this distinction.

The most obvious characteristic of count nouns is that they can be preceded by a numeral, while mass nouns cannot. Below are examples from Dutch, Danish and English, respectively:

(12) *Myrte heeft twee katten / *thee.*
Myrte has two cat.PL / tea
'Myrte has two cats / *tea.'
(Dutch)

(13) *Myrte har to katte / *te.*
Myrte have.PRES two cat.PL / tea

'Myrte has two cats / *tea.'
(Danish)

(14) Myrte has two cats / *tea.

Count nouns can be headed by an indefinite article, while mass nouns cannot. Below are again examples from Dutch, Danish and English:

(15) a. *Myrte heeft een / de kat.*
Myrte has a / the cat
'Myrte has a/the cat.'
b. *Myrte heeft ∅ / de thee.*
Myrte has ∅ / the tea
'Myrte has tea/the tea.'
(Dutch)

(16) a. *Myrte har en kat / katt-en.*
Myrte have.PRES a cat / cat-DEF
b. *Myrte har ∅ te / te-en.*
Myrte have.PRES ∅ tea / tea-DEF
(Danish)

(17) a. Myrte has a/the cat.
b. Myrte has ∅/the tea.

In languages that differentiate between count and mass quantity words, e.g. *many* versus *much* (see Rett 2007, 2014; Solt 2009, 2015), only the former can be used for count nouns and only the latter can be used for mass nouns. See the examples from Danish and English below. Dutch has been excluded, as quantity words have merged and there is therefore no way of testing the difference through quantity words.

(18) a. *mange / *meget katt-e*
many / much cat-PL
'many/*much cats'
b. **mange / meget te*
many / much tea
'*many/much tea'

(Danish)

(19) many/*much cats

Another basic diagnostic is that count nouns can be pluralized, while mass nouns cannot (ignoring grinding, portioning and sorting). Consider the Dutch, Danish and English examples below.

(20) *katt-en, *thee-ën*
cat-PL tea-PL
'cats, *teas'
(Dutch)

(21) *katt-e, *te-er*
cat-PL tea-PL
'cats, *teas'
(Danish)

(22) cats, *teas

Germanic languages then provide easy diagnostics for recognizing mass and count nouns.

What does it mean for a noun to have a count or mass interpretation? Link (1983) observes that both mass terms and plurals have a *cumulative* reference property:

(23) CUMULATIVE REFERENCE, IN PROSE
a. If *a* is water and *b* is water, then the sum of *a* and *b* is water.
b. If the animals in this camp are horses and the animals in that camp are horses, then the animals in both camps are horses.
(Link, 1983, p. 128)

(24) CUMULATIVE REFERENCE, FORMALIZED
$\forall X \subseteq U_P[CUM_P(X) \leftrightarrow \exists x, y[X(x) \wedge X(y) \wedge \neg x = y] \wedge \forall x, y[X(x) \wedge (y) \rightarrow X(x \oplus_P y)]]$
(Krifka, 1998, p. 3)

Singular count nouns are different from mass nouns and plurals in that they

have a *quantized* reference property, defined in the following way:

(25) QUANTIZED REFERENCE, IN PROSE
If X can be described as P, then no proper part of X can be described as P.
(Krifka, 1998)

(26) QUANTIZED REFERENCE, FORMALIZED
$\forall X \subseteq U_P(x) \leftrightarrow \forall x, y[X(x) \wedge X(y) \rightarrow \neg y <_P x]]$
(Krifka, 1998, p. 3)

For example, the plural noun *horses* and the mass noun *water* are cumulative because their subparts still denote *horse(s)* or *water*, whereas subparts of the singulars *horse* or *table* no longer denote a *horse* or *table*. If *table* is picked apart, you will end up with material(s) that can technically be reconstructed into something else (e.g. a chair).

It is unclear whether Link (1983) and Krifka (1998) believe that each noun is fixed to a countable or uncountable semantics, but since their work, this has been one of the focuses in the literature moving forward. There is almost always one atomicity value that is preferred for each noun, for probability or world-knowledge reasons: *pumpkin* is "intuitively" a count noun, and *tea* is "intuitively" a mass noun. However, most nouns can be found with both count and mass morphosyntax, as long as context can facilitate it.

These unintuitive uses of nouns, atomicity-wise, are in the literature called *grinding*, *portioning* (or *packaging*) and *sorting*. *Grinding* refers to the phenomenon in which nouns that are intuitively count are used in mass settings, either through morphosyntactic or contextual cues:

(27) GRINDING
There was pumpkin all over the ground.
"pumpkin" = mashed pumpkin

In the example above, *pumpkin* will be interpreted as mass because of the lack of a determiner. The opposite end of mass-count coercion is *portioning*, where mass nouns are used in count noun settings:

(28) PORTIONING
Maud ordered a tea.
"a tea" = a contextually specified unit (e.g. a cup) of tea

A tea is interpreted as count because of the presence of an indefinite article. Finally, we have *sorting*, which is when a noun is treated as count for the purpose of referring to a sort or type:

(29) SORTING
One beer is from the UK, and the other one is from Denmark.
"one beer" = one type of beer

The clues that lead us to the sortal reading of *beer* are the numeral *one* and context.

Those who believe that all nouns have an inherent count or mass value attribute these "changes" in atomicity to special operators in the syntax-semantics. Pelletier (1975) names the count-to-mass operator a "universal grinder", which is supposedly universal across languages and can be applied to any noun that is intuitively countable. Rothstein (2017) formalizes a coercion-based grinding operation as follows: when a count noun is found with mass morphosyntax, this is a symptom of an operator GRIND having been applied to a singular count predicate. The operator maps a singular count predicate onto the "set of proper parts of the elements in its denotation which are not naturally atomic, and parts of the mass correlates of the entities in the denotation that are naturally atomic" (Rothstein, 2017, p. 192):

(30) $\text{GRIND}(\text{N}_k) = \lambda \text{P}_x \lambda \text{x} \, . \, \exists \text{y} \, [\text{y} \in \pi_1(\text{P}_x) \wedge \text{x} \in \downarrow \text{k(y)}]$

$\downarrow$ is a function that "maps every a $\in$ ATOM onto the sum of its mass parts" (Rothstein, 2017, p. 191). According to such an approach, a noun like *dog* can receive a mass interpretation because of the GRIND operation:

(31) $[\![\text{dog}_{\text{ground}}]\!] = \text{GRIND}(\text{COUNT}(\text{DOG}_{\text{root}}))$
$\text{GRIND}(\{\langle \text{a,k} \rangle : \text{a} \in \text{ATOM} \wedge \text{a} \in \text{DOG}_{\text{root}} \cap \text{k}\})$
$= \lambda \text{x} \, . \, \exists \text{y} \, [\text{y} \in \pi_1(\{\langle \text{a,k} \rangle : \text{a} \in \text{ATOM} \wedge \text{a} \in \text{DOG}_{\text{root}} \cap \text{k}\}) \wedge \text{x} \in \downarrow_k (\text{y})]$

= λx . $\exists$a $\in$ ATOM[a $\in$ DOG_{root} $\cap$ k $\wedge$ x $\in\downarrow_k$(a)]
The set of mass parts of naturally atomic dogs in *k*
(Rothstein, 2017, p. 192)

The operator proposed to have the opposite effect is the "universal packager", whose role is to take an "inherently mass" noun and partition it. One formalization of such a packager is that of Chierchia (2010), who proposes an operator *F* that picks out the most contextually salient portion. Π is a function of type $\langle\langle$e,t$\rangle$,$\langle$e,t$\rangle\rangle$, such that for any property *P*, Π(P) satisfies the following requirements. "AT" is short for atom.

(32) DEFINITION OF PARTITIONING (PORTIONING)

a. $\Pi(P) \subseteq P^{+}$
A partition of *P* is a total subproperty of *P*.

b. AT(Π(P)) = Π(P)
If *x* is a member of a partition of *P*, no proper part of *x* is (relative atomicity)

c. $\forall$x [Π(P)(x) $\rightarrow$ $\forall$y [Π(P)(y) $\rightarrow$ $\neg\exists$z [z$\leq$x$\wedge$z$\leq$y]]]
No two members of a partition overlap.
(Chierchia, 2010, p. 125)

(33) CONTEXTUAL PARTITIONING (PORTIONING)
For any model M, any c$\in$C and any P$\in\text{D}_{\langle e,t\rangle}$,
F(Π_{ST})(c)(P) is the partition for P most salient in c (the standard S-partition).
(Chierchia, 2010, p. 129)

In practice, the operator could take the form of an unpronounced unit-forming word. The *F* operation, according to this view, facilitates the count interpretation of e.g. *tea*. The existence of grinding and portioning operators implies that there is an atomicity value inherent to a noun that needs to be altered.

There are however two sides to consider. On the opposite end of Pelletier (1975), Chierchia (1998a) and Rothstein's (2017) view, Borer (2005) argues that all nouns are inherently mass and that they may be counted if

a functional head (typically a classifier or a plural head) is added to the structure, while Cheng et al. (2008) argue that all nouns have an atomicity value specified in their lexical entry. I will conclude that the most likely option is that nouns *can be* lexically specified for atomicity, blocking the ability to grind or portion these nouns, and that some nouns are lexically underspecified, resulting in atomic fluidity. This can even vary within the same language, which I will show in section 2.4 is the case in Norwegian. In Norwegian, neuter nouns cannot be ground or portioned:

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

(35) #*Anne tilsette eplet.*
Anne added apple.NEUT.DEF
'Anne added the single apple.'
NOT: 'Anne added the apple mass (e.g. a specific bowl full of mashed apples).'

Masculine and feminine nouns do not show such a restriction:

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

(37) #*Anne tilsette appelsinen / plomma.*
Anne added orange.MASC.DEF / plum.FEM.DEF
'Anne added the orange/plum mass (e.g. a bowl full of mashed oranges/plums).'
OR:
'Anne added the single orange/plum.'

This data will be crucial to my analysis. I put it on pause for now.

It is important to add that, when the terms grinding, portioning and sorting are used, I do not refer to the operations themselves, but rather the use of a noun that is cognitively unexpected in terms of divisibility. That is,

I may call the mass use of *apple* grinding, because apples typically appear in the world as divisible units, but this is not itself a concession that apples are inherently countable. So-called "grinding" and "portioning" operators would be freely able to change the value of any noun as long as the context allows it to, but, as I will show later, there is data to dispute this. Still, I use the terms because they are established, making it easier for the reader to understand.

Putting aside the semantics, the next question is how the mass-count distinction looks in the syntax. The answer to this question depends on one's approach to whether atomicity is in the lexicon. If one follows the inherent mass approach, atomicity (specifically a +ATOMIC value) would be placed in a head outside the noun (Borer, 2005; Zamparelli, 1995, 2000). If one follows a lexical specification approach, atomicity should be part of the noun's lexical entry. As I argued that gender is part of the lexical entry in that it is located in NM, the same would be the case for atomicity. NM and KI then form a span, possibly together with other heads.

Mass and count nouns have different ways of being expressed in natural language, whether it be through morphosyntax or through context. In this section, I will first go through how the mass-count division is morphosyntactically expressed in (some varieties of) Indo-European. Then I will discuss how mass and count nouns have been argued to differ in the semantics and syntax, and what processes lie behind these differences. Finally, I conclude that atomicity, when it is a feature in the syntax rather than pragmatically inferred, is located on the NM head, as I argued was the case for gender.

2.3.1 The mass-count distinction in the syntax and the semantics

There are essentially two approaches to whether atomicity is specified in the lexicon or structurally derived. The first approach states that nouns are inherently born as mass, and it is only when a dividing head is added to the structure that the entity turns into a countable unit (Borer, 2005; Zamparelli,

1995, 2000). I call this the *inherent mass approach*. On the opposite end, there is the view that nouns are lexically specified for atomicity (Cheng et al., 2008; Krifka, 1989; Pelletier, 1975; Rothstein, 2010, 2017). I call this the *lexical specification approach*. In what follows, I summarize both approaches before concluding that the inherent mass approach overgenerates by predicting all nouns to be mass-count coercible in all languages. The data presented by proponents of the lexical specification approach is convincingly explained by the lexical analysis, but I will later challenge the idea that atomicity is lexical in all languages and all nouns.

2.3.1.1 The inherent mass approach

The inherent mass approach is traditionally associated with the work of Borer (2005), who used data from Mandarin Chinese to argue that all nouns, in *all* languages, are "born" as mass. When a noun is countable, a process has been undergone whereby the mass is divided – typically through a head dedicated to this purpose. It is after this head is added to the syntax that the entity represented by the noun can interact with the count system. In classifier languages like Mandarin Chinese, this divider is the head of a classifier phrase (CLP). In inflecting languages like English, it is the head of a plural phrase (PLP),[5] resulting in an obligatory count reading for nouns like *horses*. An inherent mass approach means that countability is in the syntax (see especially Borer 2005, pp. 93–101).

In Mandarin Chinese, a classifier head is mandatory whenever a noun is countable:

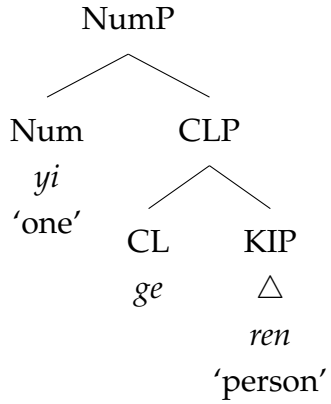
(38) a. *yi ge ren*
one CL person
'one person'

b. *y l mi*
one CL rice
'one grain of rice'
(Mandarin Chinese; Borer 2005, p. 86)

[5]The labels NumP, DivP and #P have also been used in this context.

Because mass nouns are unmarked in these examples, they are argued to be at the base level. The structure for the Mandarin phrase *yi ge ren* 'one person', then, would be the following:

(39)



Note also that when a CL has been added in Mandarin, a numeral is obligatory. Once the "stuff" has been packaged, it needs to be specified whether there is one or more of these packaged entities. In non-classifier languages like English, PLP serves the functions of portioning and specifying whether the noun has a quantized or cumulative reference.

Supporters of an inherent mass approach would say that grinding and portioning are the lack or presence of a dividing head (see Borer 2005, pp. 101–109). Because all nouns are nonatomic by nature, mass and count readings are equally available for all nouns. Grinding, then, is not the result of any special mechanism but rather the "regular" method for ending up with a mass reading, i.e. not dividing up a substance. Portioning is the addition of a (sometimes nonovert) dividing head, which is the "regular" method for forming count nouns. Any feeling of oddness would come from context and world knowledge, not the alteration of any inherent lexical specification. Considering the Mandarin data presented so far, this may seem intuitive. However, we will now see that the free availability of a mass or count reading for any noun will overgenerate in practice.

2.3.1.2 Lexical specification approach

An alternative view is that nouns are not inherently mass but actually lexically specified for atomicity (Cheng et al., 2008; Krifka, 1989; F. Landman, 2011; Rothstein, 2017). Grinding and portioning are particularly good cases to consider here. These situations where the interpretation of nouns can vary in countability value will give insight into the flexibility of nouns to take on different (non)atomic forms, and ultimately whether a ground or portioned noun has been formed under the same seamless structure that "regular" mass and count nouns do, or whether there is some semantic, coercion-driven operation transferring a noun from one countability value to another (among others Cheng et al. 2008; Falkum 2010; Kiss, Pelletier, and Husić 2021; Pickering, McElree, and Traxler 2005). I will now present the lexical specification argument.

Cheng et al. (2008) use grinding to argue that nouns are locked in for their atomicity value. In their view, grinding is coercion, and languages just have different ways to trigger this coercion. In inflecting languages like English, this coercion is triggered by the lack of count marking – one is forced into a mass reading as a "last resort" because in English, count marking (in the form of overt determiners) are obligatory for countable units. The lack of count marking therefore triggers coercion to a mass reading. Mandarin, due to the lack of mass-to-count markers (i.e. articles and plural markers), depends on context to determine whether a noun has a mass or count interpretation:

(40) 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.'

(Mandarin; Cheng et al. 2008, p. 53)

What is interesting is that in Mandarin, bare nouns that are intuitively count cannot be ground. The noun *gǒu* 'dog' should be able to be ground in (41a), using no dividing head, just like *shuǐ* 'water' in (41c). To express that the entity is a dog-related substance (here interpreted as meat), Mandarin resorts to forming a compound *gǒu-ròu* 'dog-flesh/meat':

(41) a. *qiáng-shang dōu shì gǒu.*
wall-TOP all COP dog
'There are dogs all over the wall.'
NOT: 'There is dog all over the wall.'

b. *qiáng-shang dōu shì gǒu-ròu.*
wall-TOP all COP dog-flesh/meat
'There is dog(meat) all over the wall.'

c. *dì-shang dōu shì shuǐ.*
floor-TOP all COP water
'There is water all over the floor.'
(Mandarin Chinese; Cheng et al. 2008, p. 50)

If grinding was simply the lack of a dividing head, (41a) should be perfectly fine with the ground interpretation, but this is not the case. We see the same facts in other languages that do not require count marking to receive a count interpretation, namely that they are locked into one atomicity value. Below are examples from some such languages, Brazilian Portuguese, Gungbe (Kwa), Modern Hebrew, Russian and North Sámi, respectively.

(42) *Tem cachorro espalhado por toda a cidade*
has dog spread for all the city
'There were dogs all over the city.'
NOT: 'There was dog all over the city.'
(Brazilian Portuguese; J. Nunes, p.c., reported by Cheng et al. 2008, p. 54)

(43) a. *Avun to ado lo ji gbon fi le kpo*
dog at wall D on pass place num all
Lit: 'There were dogs on all parts of the wall.'
'There were dogs all over the wall.'
NOT: 'There is dog all over the wall.'

b. *Adide to ado lo ji gbon fi le kpo*
ant at wall D on pass place num all
'Ants were all over the wall.'
(Gungbe; E. Aboh, p.c., reported by Cheng et al. 2008, p. 54)

(44) *axarey ha-te'una, haya kelev al ha-šulxan.*
after DEF-accident was.MASC dog.MASC on DEF-table
'After the accident, there was a dog on the table (only an individual reading).'
(Modern Hebrew; Rothstein 2017, p. 189)

(45) *Teper' my dobavim apel'sin.*
now we add orange.SG.ACC
'Now we are going to add an orange.'
(Russian; private informants)

(46) *Dál mii lasihit maniid.*
now we.PL add egg.PL.ACC
'Now we're going to add (the) plural egg units.'
NOT: 'Now we're going to add (the) egg (substance).'
(North Sámi; private informant)

Pickering et al. (2005), Falkum (2010) and Kiss et al. (2021) argue that mass/-count "alterations" are cases of polysemy. There are several pieces of data that are especially compelling. The first is that grinding or portioning will result in a different sense and not necessarily the same material (Jackendoff, 1991; Kiss et al., 2021; Pickering et al., 2005). For example, *two waters* in English is not simply a division of water substance into units: the denotation of *water* will need to include the container that the substance comes in (e.g. *glass*, *bottle*).

Secondly comes the fact that world knowledge affects the naturalness of the ground or portioned noun.

(47) Wolves eat lambs/?lamb.
(Falkum, 2010, p. 7)

If the ground interpretation of the count noun *lamb* had been a neutral mass version made of the same material, the example above should sound natu-

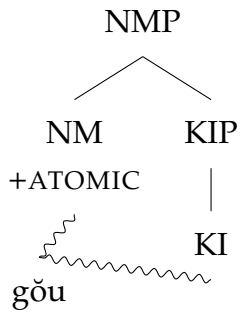
ral. But the mass use of *lamb* specifically refers to the meat, not the entire lamb animal in a ground-up state. This means that portioning and grinding are not purely logical atomicity-flipping operations.

Finally, F. Landman (1991) and Rothstein (2017) point out that there is an asymmetry between cases where mass nouns are turned into count and then turned back into mass, and cases where count nouns are turned into mass and then back to count. If a mass like water is portioned into e.g. glasses of water and is then returned to its substance-denoting nature, the result is unexceptionally that *water* refers to the same thing it originally did. In contrast, if a countable entity like *apple* is ground into e.g. mashed apples, one can portion that mass, but the unit one ends up with is not necessarily the same: while *an apple* originally denotes one, naturally-formed apple unit, it could principally denote an apple mass contained as some contextually-divided unit, e.g. a barrel of apples. This also shows that entities are not equally able to end up with count or a mass interpretation.

2.3.2 Taking stock

The lexical specification approach looks like the following in the syntax. I established in the previous section that when gender is lexically specified in a noun, this feature is located in NM, and NM and KI form a span together. Let us hypothesize the same to be true for the ±ATOMIC feature in cases where the atomicity value of the nominal denotation is fixed and non-coercible. Below is an example of the span forming the word *gǒu* 'dog' in Mandarin, following an NM analysis. Remember that the +ATOMIC value of *gǒu* 'dog' cannot be changed:

(48)



This section has gone through the ways that the mass-count distinction has been dealt with in the past, and ultimately I find that the hypothesis that all nouns are universally born as mass is untenable. For the data presented so far, it makes more sense that atomicity is part of the noun's lexical entry. Based on how I have defined lexical content to be treated in the syntax, I have suggested that NM can contain an ±ATOMIC feature, the value of which depends on the individual noun.

However, while the lexical specification approach fits the data presented so far, there is other data to suggest that sometimes nouns are *not* lexically specified for atomicity, but rather underspecified, as the inherent mass approach suggests. In these cases, it might make sense to assume that the mass/count interpretation comes from the application of a semantic grinding or portioning operation triggered by contextual information, or by the presence or absence of a superordinate "count" head, but not mediated by a formal feature in the syntax. Norwegian is a language that has some nouns that behave like English, and others that behave like Mandarin Chinese in being specified for a count or mass interpretation. If we follow an exoskeletal view of the lexicon, where lexical information is introduced syntactically, we end up with the possibility that atomicity as a feature can be introduced to the lexical entry via syntactic structure, but does not have to be.

2.4 Norwegian countability and gender

Looking at some nouns, the Norwegian data supports the lexical specification analysis, but for some nouns it suggests the lack of an atomicity value altogether – depending on the noun. I will suggest in this chapter not only that ±ATOMIC, when present, is located in NM, but that ±ATOMIC is in complementary distribution with the gender feature ±FEM in Norwegian. This leads to the novel conclusion that some nouns are genderless in Norwegian. Instead of having a ±FEM feature, they have an ±ATOMIC feature. Norwegian neuter agreement has in the past been observed to show up in situations where there is no clear, discernible noun phrase to which gender can be assigned, such as infinitive clauses and bare singular nouns (see subsection 2.4.2). According to my analysis, the appearance of the neuter form is a natural result of there being no gender feature present in these cases.

Specifically, I will argue that the lack of gender in NM is what results in what is traditionally named "neuter gender". One important empirical observation to back this up with is that, similar to what we see for bare nouns in Mandarin, Brazilian Portuguese, Gungbe, Modern Hebrew and North Sámi, neuter nouns in Norwegian are rigid in their atomicity value. For example, while gendered nouns can undergo grinding and portioning, neuter nouns cannot. Below is an example of an attempt at grinding in the definite form, which is perfectly acceptable for gendered nouns but unacceptable for neuter nouns:

(49) *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.'

(50) *#No tilset me epl-et.*
now add we apple.NEUT-DEF.NEUT
Intended: 'Now we're going to add the apple mass.'[6]

[6]Norwegian native speakers may react to the choice of the noun *eplet* 'the apple' here, since the definite form does not sound different from the unmarked form. I chose *eplet* because it forms a semantically neat minimal pair with *appelsinen* 'the orange' and *plomma* 'the plum', but the reader will find that my generalization holds for neuter nouns if one

I will return to this data in more detail in subsection 2.4.3.

There are four data details to go through to show how the Norwegian data is relevant: 1) the basics of how Norwegian overtly shows countability, gender and agreement; 2) the neuter as a default or escape hatch form; 3) the neuter's commitment to one atomicity value; 4) the flexibility of bare singular nouns, regardless of gender. This section will be dedicated to the Norwegian data, which will be the basis of the analysis in section 2.5.

2.4.1 Morphosyntax

2.4.1.1 Countability

Norwegian displays countability in the same way as the other Germanic languages. First of all, countable nouns can be counted with a numeral:

(51) *Myrte har to katt-ar / *te.*
Myrte have.PRES two cat-PL / tea
'Myrte has two cats/*tea.'

Secondly, the definite suffix is equally able to head count and mass nouns, but the indefinite article can only head count nouns.

(52) a. *Myrte har ein katt / katt-en.*
Myrte have.PRES a cat / cat-DEF
'Myrte has a cat/the cat.'

b. *Myrte har ∅ te / te-en.*
Myrte have.PRES ∅ tea / tea-DEF
'Myrte has tea/the tea.'

Thirdly there are the quantity word restrictions. Count nouns can be measured by quantity words like *mange* 'many' and *fleire* 'more.COUNT', while mass nouns can be measured by quantity words like *mykje* 'much' and *meir* 'more.MASS':

(53) a. *mange / *mykje katt-ar*
many / much cat-PL

considers a noun like *egget* 'the egg'.

'many/*much cats'

b. **mange / mykje te*
many / much tea
'*many/much tea'

Finally, mass nouns cannot be pluralized (assuming these are not cases of portioning or sorting).

(54) *katt-ar, *te-ar*
cat-PL tea-PL
'cats, *teas'

Whether a noun should be interpreted as mass or count can therefore be derived from the morphosyntax in Norwegian.

2.4.1.2 Gender

Norwegian has consistently been reported to have three genders: masculine, feminine and neuter. The indefinite article and the definite suffix agree with the noun in number and gender. Below are all combinations of gender, number and definiteness.

(55) 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'

(56) a. *gut-ar, jent-er,*
boy.MASC-indef.PL.MASC girl.FEM-indef.PL.FEM
hus-∅
house.NEUT-indef.PL.NEUT
'boys, girls, houses'

b. *gut-ane, jent-ene,*
boy.MASC-DEF.PL.MASC girl.FEM-DEF.PL.FEM
hus-a
house.NEUT-DEF.PL.NEUT

'the boys, the girls, the houses'

It however seems fair to add that there is dialectal sociolectal variation to the three-gender generalization. For example, the dialects of Bergen and most of Oslo have lost the feminine gender and only operate with masculine and neuter. This trend is spreading to other parts of the country, especially in and around the major towns. In the written standard of Bokmål, the use of the feminine gender is optional.

2.4.1.3 Agreement

In the singular number, determiners agree with nouns in gender and number, and adjectives agree with nouns in number and to some extent with gender: adjectives inflected in the indefinite singular neuter form take a *-t* suffix, while masculine and feminine nouns do not.

(57) a. *ein stor-∅ gut, ei stor-∅ jente, eit stor-t hus*
a big-∅ boy.MASC-∅ a big-∅ girl.FEM a big-t house
'a big boy, a big girl, a big house'

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

In the plural number, adjectives take the *-e* suffix regardless of definiteness or gender value. This holds for both attributive and predicate adjectives, respectively (58) and (59):

(58) a. *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'

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

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

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

Table 2.2 summarizes these suffixes:

Table 2.2: Adjective suffixes in Norwegian.

	SG	PL
INDEF	GEN: -∅	GEN: -e
	NEUT: -t	NEUT: -e
DEF	GEN: -e	GEN: -e
	NEUT: -e	NEUT: -e

2.4.1.4 Bare singular nouns

Norwegian (and the other Mainland Scandinavian languages) use bare singular nouns more freely than e.g. English does. The properties of bare singular nouns are important to decide what the internal structure is, which I will do in subsection 2.5.1.2. In a copular sentence like the one below, a bare noun is used to signal that the subject ("Christian") has a property that can be described by the kind denoted by that noun ("chemist"):

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

English cannot use bare nouns for this purpose:[7]

[7]There are exceptions, like *Obama is President*, but these are fixed terms, and I do not believe there to be a firm semantic rule for when nouns are bare in these constructions

(61) *Christian is chemist.

Bare singulars can take the role of subject, but only if they denote kinds. Below are two examples, one kind-denoting and one individual-denoting one. *Buss* 'bus' in example (62) refers to the kind of thing that is a bus, while in example (63), it refers to a specific bus:

(62) *Buss er et naturvennlig kjøretøy.*
bus be.PRES a nature-friendly vehicle
'A bus is a non-polluting vehicle.'
(Borthen, 2003, p. 60)

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

The same can be said for objects. In example (64), because *kjærast* 'romantic partner' is used without a determiner, we end up with a noun phrase that denotes the kind of thing that is a romantic partner. When an article is present, the speaker must refer to a person in the world who has the trait of being a romantic partner to someone, rather than merely the concept of a romantic partner:

(64) a. *Bente leiter etter kjærast.*
Bente look.PRES after romantic.partner
'Bente is looking for someone who wishes to be her romantic partner.'

b. *Bente leiter etter ein kjærast.*
Bente look.PRES after a romantic.partner
'Bente is looking for someone who is in a romantic relationship (likely with someone other than her).'

Bare singular count nouns are ambiguous between a mass and count reading, and the relevant reading comes from context. This is the case regardless of gender. In the sentence below, *appelsin* 'orange' (which is masculine),

in English. See Castella (2014) for a crosslinguistic comparison regarding this use of bare nouns in Indo-European.

plomme 'plum' (which is feminine) and *eple* 'apple' (which is neuter).

(65) *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?'

See Faarlund (1977), Borthen (2003), Rosén and Borthen (2017) and Grønn (2006) for more data and discussion.

2.4.2 Neuter as the "default" gender

It has been found that, in Norwegian, it is specifically the *singular neuter* agreement that shows up in contexts where there is nothing for a gender to be assigned to. Some examples are: infinitive clauses, complement clauses, proper nouns, indefinite mass nouns, general descriptions of situations, VP ellipsis (see especially Anderssen and Bentzen 2011, 2012; Bentzen and Anderssen 2019; Bentzen, Merchant, and Svenonius 2013), contextual nonovert events[8] and quotes, but this list is not exhaustive.

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

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

(68) *San Francisco er *fin-∅ / fin-t.*
San Francisco be.PRES nice-SG.MASC / nice-SG.NEUT
'San Francisco (as a city) is nice.'

[8]Some of these examples are called "pancake sentences" in the literature, and I will return to them in Chapter 4. See, among others, Faarlund (1977), Hellan (1986), Enger (2004, 2013), Josefsson (2014) and Martin, Carvalho, and Alexiadou (2020).

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

(70) *Eg held på å koka graut, brygga kaffi og steika egg, men eg må på do. Kan du passa på det?*
I hold on to boil porridge brew coffee and fry egg but I must on toilet can you watch on it
'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)?'

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

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

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

This observation has led some to conclude that neuter is the exceptional, default and/or featureless gender in Norwegian.[9] This exceptional gender is, according to this interpretation, what comes out when there is no gender feature to agree with.

Before continuing, I should specify what I mean by "default gender". Some readers may protest this statement by claiming that masculine is in fact the default gender in Norwegian. One piece of data in support of this is that when Norwegian takes in English loanwords, these words are over-

[9]See Adamson and Šereikaitė 2019; Fraser and Corbett 1997, 2000; Ritter 1993 for treatments of default gender in general; see Enger 2004, 2013; Haugen and Enger 2019 for a specific discussion about Norwegian.

whelmingly assigned masculine gender. Based on a wide array of sources reporting on data from all the way from before World War Two to current day, Graedler (1998) finds that out of the English loanwords Norwegian has, 80-90% of them are assigned masculine gender, a very low amount feminine and 10-20% neuter (see also Johansson and Graedler 2002). Even nouns that are given the fairest chance at being assigned feminine or neuter gender, such as *chick* (as in girl/woman) or *kid* (the equivalent of which, *barn*, is neuter), take the masculine form:

(74) *browni-en, kid-en, chick-en*
brownie-DEF.MASC kid-DEF.MASC chick-DEF.MASC
burger-en, pub-en, segway-en
burger-DEF.MASC pub-DEF.MASC segway-DEF.MASC
'the brownie, the kid, the chick (as in girl/woman), the burger, the pub, the segway'

More support for the view that masculine is the default gender comes from first language acquisition (Rodina & Westergaard, 2013, 2015). Rodina and Westergaard (2015) generalize that the production of child data involves an overgeneralization of masculine gender. Both neuter and feminine nouns are merged into masculine, in these cases. Looking at corpora of two monolingual native Norwegian speaking children and two bilingual Norwegian-English children, Rodina and Westergaard (2013) find that the feminine and neuter indefinite articles are replaced by the masculine indefinite article 63% and 71% of the time, respectively (see also Anderssen 2006; Bentzen 2000; Busterud, Lohndal, Rodina, and Westergaard 2019; Rodina and Westergaard 2017). Finally, we see that more and more dialects have changed the *indefinite article* from feminine to masculine form, but not the *definite suffix*.[10] This is largely associated with younger generations. For example:

(75) a. *ein stol, ein*
a.INDEF.SG.MASC chair.SG.MASC a.INDEF.SG.MASC

[10]For speakers of Norwegian: see van Baal, Solbakken, Eik, and Lohndal (2023) for results from a large-scale study from Bodø, Mo i Rana, Trondheim, Stavanger, Eigersund, Lyngdal and Kristiansund.

artikkel, *ein* *hest*
article.SG.MASC a.INDEF.SG.MASC horse.SG.MASC
'a chair, an article, a horse'

b. *ein* *sol*, *ein* *klokke*,
a.INDEF.SG.MASC sun.SG.FEM a.INDEF.SG.MASC clock.SG.FEM
ein *flette*
a.INDEF.SG.MASC braid.SG.FEM
'a sun, a clock, a braid'

(76) a. *stol-en*, *artikkel-en*,
chair.SG.MASC-DEF.SG.MASC article.SG.MASC-DEF.SG.MASC
hest-en
horse.SG.MASC-DEF.SG.MASC
'the chair, the article, the horse'

b. *sol-a* / **sol-en*,
sun.SG.FEM-DEF.SG.FEM / sun.SG.FEM-DEF.SG.MASC
klokk-a / **klokk-en*,
clock.SG.MASC-DEF.SG.FEM / clock.SG.MASC-DEF.SG.MASC
flett-a / **flett-en*
braid.SG.MASC-DEF.SG.FEM / braid.SG.MASC-DEF.SG.MASC
'the sun, the clock, the braid'

This could all be taken as evidence for the belief that masculine is the default gender in Norwegian.

This is where it becomes useful to distinguish between *default assignment gender* and *default agreement gender* (Corbett & Fraser, 1999; Enger, 2009; Lohndal & Westergaard, 2021). According to Lohndal and Westergaard (2021), masculine gender is the default gender that appears when there is an unassigned gender feature, while neuter shows up when there is no gender feature at all.[11] This is shown by the fact that new nouns are given masculine gender, and non-nouns, such as infinitive clauses, trigger neuter agreement. I will provide support for this claim in this chapter.

[11]The same has been argued to be the case for Lithuanian (Adamson & Šereikaitė, 2019). I obviously mention this without making the claim that the Mainland Scandinavian and Lithuanian gender systems mirror each other one-to-one.

2.4.3 Neuter nouns are atomically fixed

What makes Mainland Scandinavian[12] stand out in the Indo-European context is that atomic flexibility, i.e. the ability to "grind" and "portion", depends on the gender of the noun. It is specifically neuter nouns that are stuck with one atomicity value, while masculine and feminine nouns do not share such a restriction. To my knowledge, this inflexibility in Norwegian neuter nouns has not been observed before. If we assume a traditional three-gender system for Norwegian, nothing predicts neuter to behave differently from masculine and feminine. In the following, I show what grinding and portioning look like in Norwegian, and how masculine and feminine nouns are different from neuter nouns. Before concluding, I briefly comment on the phenomenon of sorting, which looks different from portioning morphosyntactically (similar to what is the case in Icelandic and German, cf. Wiese and Maling 2005).

2.4.3.1 Grinding

When the noun is definite, nouns that have an intuitive count reading can be interpreted as mass if they are gendered, but not if they are neuter. For example, in a context where one is being trained to work in a cake factory, and the person training one instructs one to add a mass of mashed oranges or plums to a cake, *appelsin* 'orange' and *plomme* 'plum' being masculine and feminine nouns, respectively, it is possible to express this simply by using the definite form of the noun (77). This is impossible with the neuter noun *eple* 'apple' (78).

(77) *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.'

(78) *#No tilset me epl-et.*
now add we apple.NEUT-DEF.NEUT

[12]From now on, I will refer to Norwegian specifically, but to my knowledge the judgments are the same across Mainland Scandinavian, though Swedish seems to have some variation, possibly across speakers.

Intended: 'Now we're going to add the apple mass.'

Eplet 'the apple' can never have the mass reading; the sentence in (78) can only be interpreted if a single entire apple is about to be added to the cake.

To add to the Mainland Scandinavian data: Danish shows the same distinction as Norwegian (between common and neuter gender). For Swedish, according to the 12 native speakers asked, the judgments were a little more scattered, but overall the percentage of answers are more negative when the noun is in the definite neuter form, as opposed to common.

(79) *Nu tilsætter vi appelsin-en /*
now add we orange.COMMON-DEF.COMMON /
#æbl-et.
apple.NEUT-DEF.NEUT
'Now we're going to add the orange/apple mass.'
(Danish)

(80) *Nu lägger vi till ?apelsinen /*
now add we to orange.COMMON-DEF.COMMON /
#äpplet.
apple.NEUT-DEF.NEUT
'Now we're going to add the orange/apple mass.'
(Swedish)

According to my informants, Island Scandinavian does not appear to be able to grind at all, regardless of whether the noun is unmarked or definite. (81) shows the fact that even in the indefinite form, grinding is not possible.

(81) *Nú bætum við við appelsínu / plómu / egg.*
now add we to orange / plum / egg
'Now we are adding a single orange/plum/egg.'
NOT: 'Now we are adding orange/plum/egg mass.'
(Icelandic; private informants)

One may speculate that, since Icelandic does not have the indefinite article, and there is no syntactic distinction between indefinite count nouns and mass nouns, speakers may automatically be locked into the intuition that

oranges, plums or eggs are countable units. This may relate to the inability to grind and portion in bare singular languages such as Mandarin Chinese, which I discussed in subsection 2.3.1.2.

When referring to a ground mass, it is possible to use the plural form:

(82) *Nú bætum við við appelsínum / plómum / eggjum.*
now add we to oranges / plums / eggs
'Now we add oranges/plums/eggs (i.e., several divisible ones).'
(Icelandic; private informants)

In the definite form, it is also the case that only the count reading is available:

(83) *Nú bætum við banana / plómu / egginu*
now add we banana.MASC.DEF / plum.FEM.DEF / egg.NEUT.DEF
við.
to
'Now we're going to add the single banana/plum/egg.'
NOT: 'Now we're going to add the banana/plum/egg mass.'
(Icelandic; private informants)

To get the correct reading, Icelandic needs to lexically specify that e.g. the eggs are mixed:

(84) *Nú setjum við eggjahræruna við.*
now add we scrambled.eggs to
'Now we're going to add the scrambled eggs.'
(Icelandic; private informants)

Bear in mind that the data from Icelandic is only based on a few native speaker informants, so more data would need to be collected to make a definitive statement. Based on this, however, it seems that the gender distinction in the ability to grind is a Mainland Scandinavian-specific phenomenon, in the Indo-European context.

I add that Dutch and French can both grind nouns regardless of the gender of the noun:

(85) *Nu gaan we de appel / het ei*
now go we the.COMMON apple.COMMON / the.NEUT egg.NEUT
toevoegen.
add
'Now we're going to add the apple/egg (mass).'
(Dutch)

(86) *Nous allons maintenant ajouter la pomme / le*
we will now add the.FEM apple.FEM / the.MASC
citron.
lemon.MASC
'We will now add the apple/lemon (mass).'
(French)

A successful analysis must be able to explain this uniqueness of neuter nouns in Mainland Scandinavian.

2.4.3.2 Portioning

Norwegian neuter nouns that are intuitively mass cannot receive a count reading. Compare below the portioning of a masculine and a feminine noun, and the inability to do so with a neuter noun:

(87) 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?'

Mainland Scandinavian is again unique in having this gender-based restriction. In Icelandic, neuter nouns are just as capable of being portioned:

(88) a. *Gæti ég fengið bjór / kaffi?*
could I get beer.MASC / coffee.NEUT

'Could I get a (e.g. glass or cup of) beer/coffee?'

b. *Gæti ég fengið bjór-inn / kaff-ið?*
could I get beer-DEF.SG.MASC / coffee-DEF.SG.NEUT
'Could I get the (e.g. glass or cup of) beer/coffee?'

Since Icelandic does not have indefinite articles, it is hard with this data specifically to tell whether *kaffi* 'coffee' in (88a) is indeed portioned. A more convincing piece of data is that numerals can be used to count the contextually relevant units:

(89) *tvo viskí*
two.MASC whiskey.NEUT
'two whiskeys'
(Wiese & Maling, 2005, p. 23)

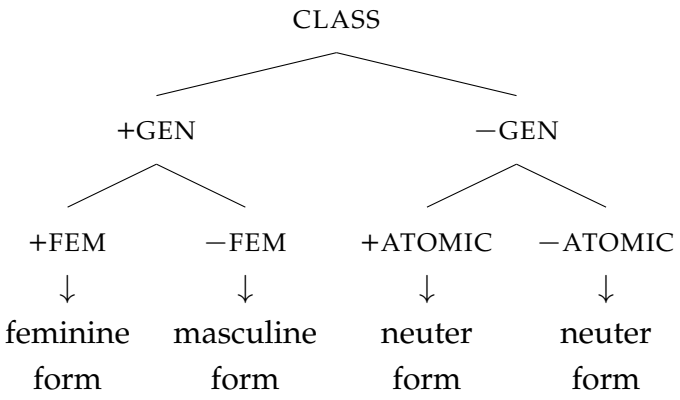
The gender mismatch between the numeral and the noun is a clue to what I will argue also matters for my analysis of Norwegian portioning, in subsection 2.5.2.1. Regardless of the indefinite form, the definite nouns in (88b) show that there is no gender restriction on portioning in Icelandic.

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

2.4.4 Feature hierarchy and agreement

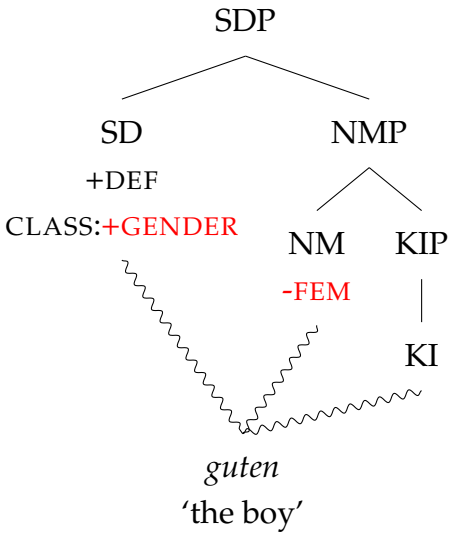
The inability to grind and portion neuter nouns backs up an analysis in which ±ATOMIC is in NM. This cannot be the case for gendered nouns, which are flexible in their atomicity value, but fixed in their gender value. What we end up with is an analysis in which, in Norwegian, 1) NM is a part of the lexical features of a noun; 2) NM can contain *either* ±ATOMIC *or* ±FEM, but never both. The tree structure below shows a hierarchy of features in NM, and which forms the noun may end up having:

(90)



This hierarchy unites ±FEM and ±ATOMIC as features that *classify* a noun. Any head that needs to agree with a noun, such as an adjective, is a probe for a class feature, not specifically gender or atomicity. When the class feature in NM is ±GEN, the adjective agrees with the gender value that is located in NM. When the class feature is ±ATOMIC, it agrees with the atomicity feature, resulting in the "neuter" form. For example, in a masculine noun phrase like *guten* 'the boy', the determiner suffix *-en* takes the masculine form because the noun *gut* 'boy' is masculine. This is because SD copies and agrees with the class feature of the NM in its complement. Because the class feature that is located in NM is gender, SD copies the −FEM value in NM:

(91)



This feature hierarchy will prove useful to explain agreement and how gender and atomicity function separately but still under the same general umbrella category of a classifying feature.

2.4.5 Summary

My theoretical argument is somewhat different from the binary question of whether nouns are inherently mass or inherently assigned one atomicity value, in that the neuter noun data supports a lexical specification approach but gendered nouns do not. In my view, the final interpretation of whether a gendered noun is atomic or not comes from context, not structure. There should in principle be no problem with a view by which all interpretations can be achieved, within and across languages, and where pragmatics plays in when the syntax-semantics formally does not (cf. Ramchand and Svenonius 2008). For gendered nouns, whether we think of a grinding operator à la Rothstein's (2017) GRIND as a syntactic head or as a purely semantic-pragmatic operator, the data does not support a Borerian (2005) inherent mass approach. However, as I will show, there are cases where a noun phrase only consists of a truncated KIP structure, without an NM head. In these cases, the denotation with respect to mass and count can truly be underspecified even for neuter nouns.

2.5 Proposal

At this point, I have laid out the puzzle pieces needed to explain the Norwegian data. In section 2.2, I showed why it had to be the case that ±FEM, when present in the structure, is located in NM. In section 2.3, I showed why it had to be the case that NM, when there is an ±ATOMIC feature in the nominal structure, is the location of the atomicity feature. In section 2.4, I showed how ±FEM and ±ATOMIC are in complementary distribution in NM, where gendered nouns involve a fixed ±FEM value and neuter nouns involve a fixed ±ATOMIC value. The next step is to combine these findings to successfully explain the oddity of the Norwegian split in atomic rigidity

between masculine and feminine on one end and neuter on the other.

Specifically, I make the conclusions that ±ATOMIC is in NM if there is no ±FEM there, and that what we know as "neuter gender" is actually the result of the *lack of* gender. Because these genderless nouns have an ±ATOMIC feature in their NM, the nouns are atomically fixed. First, I base my claim on the facts about "grinding", i.e. the treatment of intuitively countable nouns in mass noun settings. The definite form of ground nouns shows that, unlike gendered nouns, neuter countable nouns cannot receive a mass reading because their NM contains +ATOMIC. I further argue that when the noun is unmarked, the noun phrase structure only makes up a kind phrase, so there is no NM in the nominal projection at all. This means that there is no +ATOMIC value to ban grinding.

Second comes "portioning", i.e. the treatment of intuitively mass nouns in count noun settings. In the indefinite form, neuter mass nouns cannot have a count reading because their NM must carry a −ATOMIC value. When the noun is in the definite form, it may initially look like a mass noun can be portioned, but I show that the "portioned" reading one ends up with is due to a presupposition accommodation resulting from the definiteness on the mass noun.

Finally, I make use of these findings to explain the appearance of neuter as a default agreement form that appears when there is no gender feature to agree with, e.g. on modifiers and/or pronouns for infinitive clauses. Whenever there is no obvious ±FEM value to assign to an argument, "neuter" is what we find. The conclusion becomes that neuter agreement shows up in contexts where there is no ±FEM present.

The section is structured as follows. In subsection 2.5.1, I explain why grinding is possible in gendered nouns but not neuter nouns. In subsection 2.5.2, I explain why portioning is possible for gendered nouns but not neuter nouns (and I comment briefly on sorting). Subsection 2.5.4 is a summary of the section.

2.5.1 Grinding

2.5.1.1 Definite form

To repeat the data from earlier, definite neuter nouns cannot be ground in Norwegian:

(92) *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.'

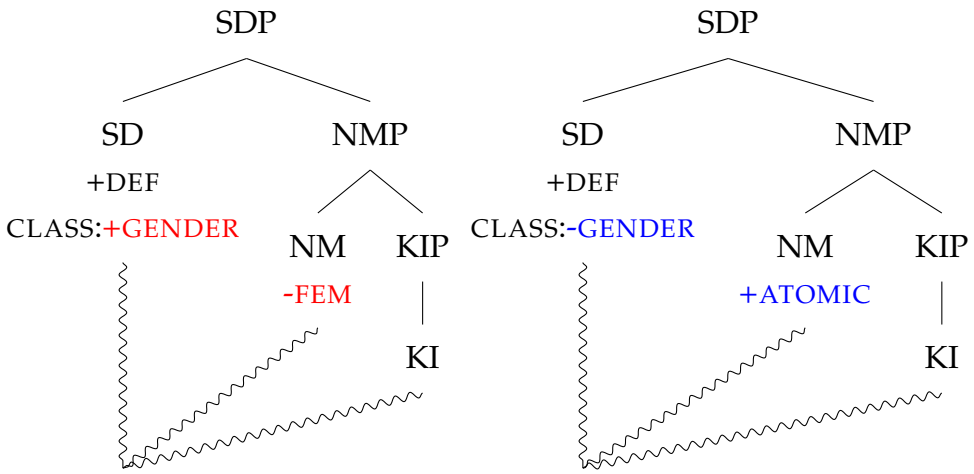
This is to be expected if an atomicity value is part of the lexical entry of only neuter nouns. Because the NM in *eplet* 'the apple' carries a +ATOMIC value, this value is fixed and there is no way for it to be overridden. We then cannot get a mass reading for the noun phrase. This goes in opposition to a grinding operator like Rothstein's (2017) GRIND: a grinding operator cannot be the inherent mechanism that languages have at their disposal to convert count denotations to mass denotations. If this were the case, the grinder should be freely able to apply to *eplet* 'the apple' and change it as required. The only way to describe the difference between *eplet* 'the apple' on one end and *appelsinen* 'the orange' or *plomma* 'the plum' on the other is to say that in the gendered case, the noun is truly underspecified for atomicity and the "Universal Packager/Grinder" is not a morphing function, but a specifying functor that precisifies underspecified things. This is independent of whether we put this in the syntax or not.

For gendered count nouns like *appelsinen* 'the orange' and *plomma* 'the plum', atomicity is underspecified in the lexicon, so mass and count readings are equally available depending on context and syntactic cues.[13] Be-

[13]Kiss et al. (2021) and Kiss et al. (2021) use corpus data to argue for a polysemy-based account of grinding and portioning, quantitatively showing that some nouns have a "dual" interpretation, i.e. they are evenly acceptable with a mass or a count reading, e.g. *bread* or *lightning* (at least in many languages). I agree that context largely matters for the final reading, and that atomicity cannot be a pure, clear-cut binary, but rather a spectrum (see also Allan 1980). My context-based explanation for gendered nouns will reflect this. As for neuter nouns, I think another explanation will be needed when these nouns are in between the outermost parts of the spectrum. However, it is important to underscore that when

low are tree diagrams showing the difference in structure between gendered nouns and neuter nouns.

(93)



The definite SD head searches for a class feature, and in the case of *appelsinen* 'the orange', it finds a gender feature whose −FEM value it can agree with. In the case of *eplet* 'the apple', it does not find a gender feature and instead agrees with +ATOMIC. Grinding, according to this analysis, is not in the structure at all: the masculine *appelsinen* 'the orange' and the feminine *plomma* 'the plum' have the same syntactic structure regardless of whether they receive a count or mass reading; *eplet* 'the apple' is locked into a count reading because NM always contains +ATOMIC. This counters a Borerian (2005) explanation of grinding as simply the lack of a dividing head, since that would wrongfully predict the availability of a mass interpretation for *eplet* 'the apple'. The inability to grind neuter count nouns goes hand in hand with a lexical specification approach like that of Cheng et al. (2008).

2.5.1.2 Unmarked form

When the noun is unmarked, there is no distinction between gendered and neuter nouns with regard to whether they can be used with mass-associated

neuter nouns are clearly count or mass, these values cannot be changed.

syntax:

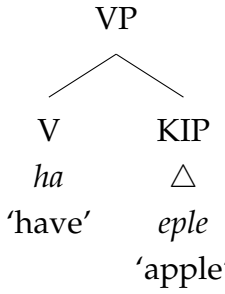
(94) *No tilset me appelsin / plomme / eple.*
now add we orange.MASC / plum.FEM / apple.NEUT
'Now we're going to add orange/plum/apple mass.'

The acceptability of *eple* 'apple' in the sentence above can be attributed to the minimal size of the nominal phrase.[14] The noun phrase does not even contain NM, meaning that neuter nouns like *eple* 'apple' are not valued +ATOMIC, and so they are free to receive an atomic or nonatomic reading depending on context. Another reason for positing a lack of NM is that bare singulars also do not display the ±FEM feature, since gender features are visible on the indefinite article or definite suffix, or adjective agreement.

Without an ±ATOMIC feature, we correctly predict that when nouns are bare, they are ambiguous between a count and mass reading. Because the rest of the structure is also missing, the noun is also ambiguous between a singular and a plural reading. I repeat example (65) from subsection 2.4.1.4:

(95) *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?'

KIP is the internal argument of V:

(96)


[14] See Espinal and McNally (2011) for a similar small-structure view of bare nouns (with data from Catalan and Spanish).

This observation is comparable to the bare singular nouns that appear in cases of pseudo-incorporation in other languages (Dayal, 2011; Espinal & McNally, 2011; Schwarz, 2014; van Geenhoven, 2005). I further build upon my opinion on this verb-bare noun combination in Chapter 3.

The examples above serve as data points to underscore that bare nouns in Norwegian do not project higher than at the KIP level.[15] The ability to grind bare singulars, then, does not relate to the featural content of an NM, but to the fact that there is no NM at all. The goal here has been to show that the "definiteness contrast", as it has been presented so far, is not really about *definiteness*, but about whether there is any structure on top of KIP to assign ±FEM or ±ATOMIC. If there is no ±ATOMIC, nothing stands in the way of a mass interpretation of *eple* 'apple'.

2.5.2 Portioning

2.5.2.1 Indefinite form

Remember that neuter "mass" nouns cannot be portioned. I repeat example (87) here:

(97) 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?'

The inability to portion neuter nouns using the agreeing indefinite article supports my proposal that nouns like *vatn* 'water', which show up as neuter, are lexicalized with an NM that must contain a −ATOMIC value. *Eit*

[15] Though I do not make any claims about other languages; see Chierchia (1998a, 1998b) or Ramchand and Svenonius (2008) for more discussion with data from Mandarin, Italian and Russian.

vatn 'a.NEUT water.NEUT' is then unacceptable for the same reason that the grinding of definite neuter nouns is: neuter nouns are locked to one atomicity value.

Some data may seem to challenge a clean-cut analysis like this, but ultimately this data is deceptive. First, when we try to portion neuter nouns, such as *vatn* 'water', *salt* 'salt' or *pepar* 'pepper', the neuter indefinite article does not work, but the portioned reading is available with a masculine indefinite noun, though it is heavily context dependent:

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

The sentence below can only work if the container noun is clearly established, for example if one asks for little sachets of salt or pepper at a fast food restaurant:

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

This kind of gender mismatch between the indefinite article and the noun is found in German as well (Wiese & Maling, 2005), an observation that has led some to suggest the existence of a nonovert "classifying" head that is obligatorily atomic, forcing a substance into a countable unit, like CLs do according to Borer (2005). I have already argued against a Borerian view of atomicity, and within my analysis, atomicity is either lexically fixed or formally unspecifiable. Under this view, it is impossible to add an external classifying head to the nominal functional sequence in order to achieve a quantized interpretation.

Still, there is reason to believe that there is *something* nonovert in the structure when mass nouns receive a count reading. One compelling piece of evidence is that when a plural numeral is used, there is no plural suffix

on the noun. For Norwegian, I find that this is the case both for gendered and for neuter nouns:[16]

(100) a. *to vin-∅ / #vin-ar, to vodka-∅ /*
two wine.MASC-∅ / wine.MASC-PL.MASC two vodka.MASC-∅ /
#vodka-ar, to pasta-∅ /
vodka.MASC-PL.MASC two pasta.MASC-∅ /
#pasta-ar
pasta.MASC-PL.MASC
'two wines, two vodkas, two pastas'

b. *to suppe-∅ / #supp-er, to mjølk-∅ /*
two soup.FEM-∅ / soup.FEM-PL.FEM two milk.FEM-∅ /
#mjølk-er
milk.FEM-PL.FEM
'two soups, two milks'

c. *to garn-∅, to gjær-∅, to vatn-∅*
two yarn.NEUT-∅ two yeast.NEUT-∅ two water.NEUT-∅
'two yarns, two yeasts, two waters'

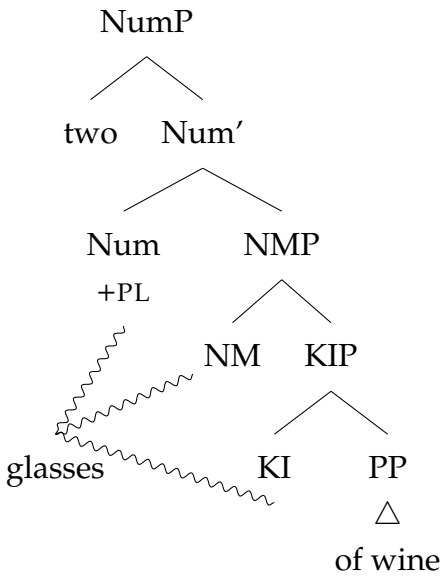
The lack of plural marking has been argued to mean that numerals like *to* 'two' do not actually count the visible noun, e.g. *vin* 'wine' or *mjølk* 'milk'. Instead, the numeral counts the number of nonovert units of the relevant kind. The underlying form of *to vin* 'two wine' could then be two (non-descript) containers/units of wine. I will show that, in the case of *ein vatn* 'a.SG.MASC water.NEUT', *ein* agrees with this nonovert unit, and it is the masculine form that shows up because masculine is the default gender in Norwegian (see 2.4.2).

Borer (2005) includes e.g. *glass of* as an example of a classifier in English, but based on the syntactic structure of *two glasses of beer*, it seems misleading to say that *glasses of* is a single CL head. Instead, it looks more like *glasses* is the head of a noun phrase and *of beer* is a PP complement to the nominal

[16]In most dialects, the indefinite plural form of neuter nouns is already null, so this is unfortunately not a foolproof test. However, there exist dialects that use masculine suffixes for the definite form of (many) neuter nouns, and these dialects cannot use plural morphology when neuter mass nouns have been portioned. This fact on its own hopefully supports the argument that neuter portioned nouns are in the singular form when counted.

head, forming a partitive construction.[17] Below is an illustration:[18]

(101)



The addition of *glasses* to the structure is then a case of recursion by forming a functional sequence on top of the functional sequence of *wine*.

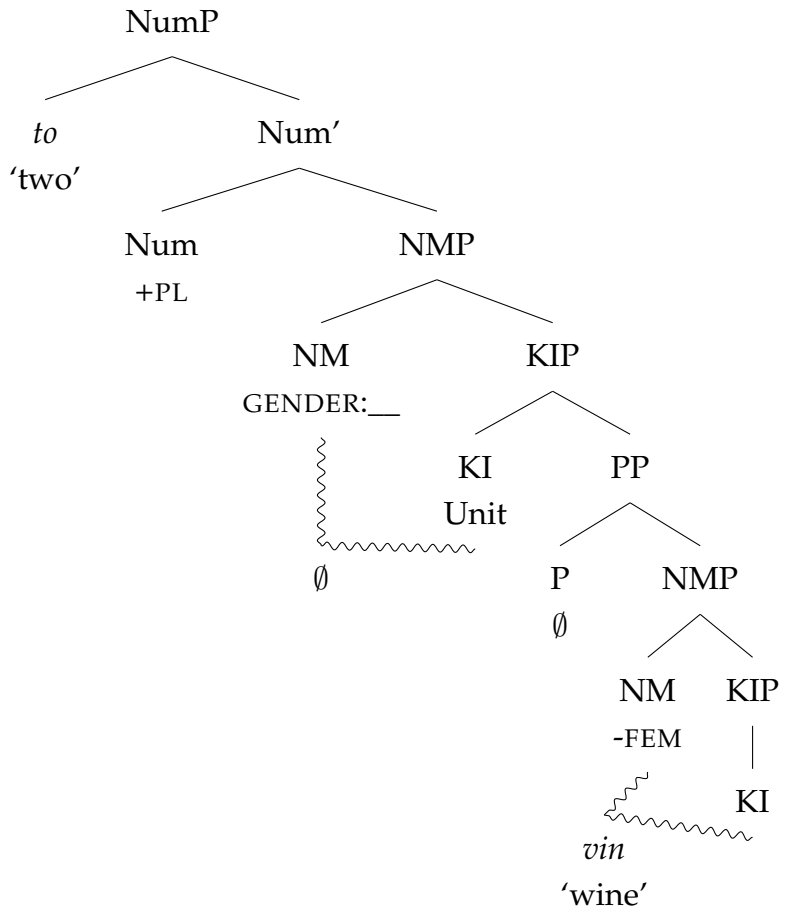
I argue that this biphrasal structure is what we find in the case of *to vin* 'two wine' in Norwegian. A nonovert head, which I will label Unit, is the head of a partitive construction, taking a PP complement containing the mass noun *vin*. Although *to vin* 'two wine' does not overtly show a preposition, it is possible to use *med* 'with' in phrases that overtly mark this Unit, e.g. *to glas med vin* 'two glasses of wine' (lit. 'two glass with wine'). This implies that there *is* a preposition there, like *of* in English. For this reason, I believe the complement of the Unit head to be a PP in Norwegian

[17]The presence or absence of a nonovert head is controversial, and I do not claim a universal solution for the structure of portioning. Wiese and Maling (2005) claim that there is crosslinguistic variation with regard to how languages solve the problem, which we can even see by the fact that English *does* show plural marking on the noun, e.g. *two wines*.

[18]I have chosen to place numerals in Spec,NumP in my investigation. I am aware that there is disagreement in the literature about whether numerals are in Spec,NumP or in the Num head itself, and even whether all languages are the same in this regard. In my structures, Num contains the ±PL feature and thus contributes with a potential plural suffix, while Spec,NumP is the location of the phrase that counts objects.

as well. This is then the full structure of a noun phrase like *to vin* 'two wine':

(102)



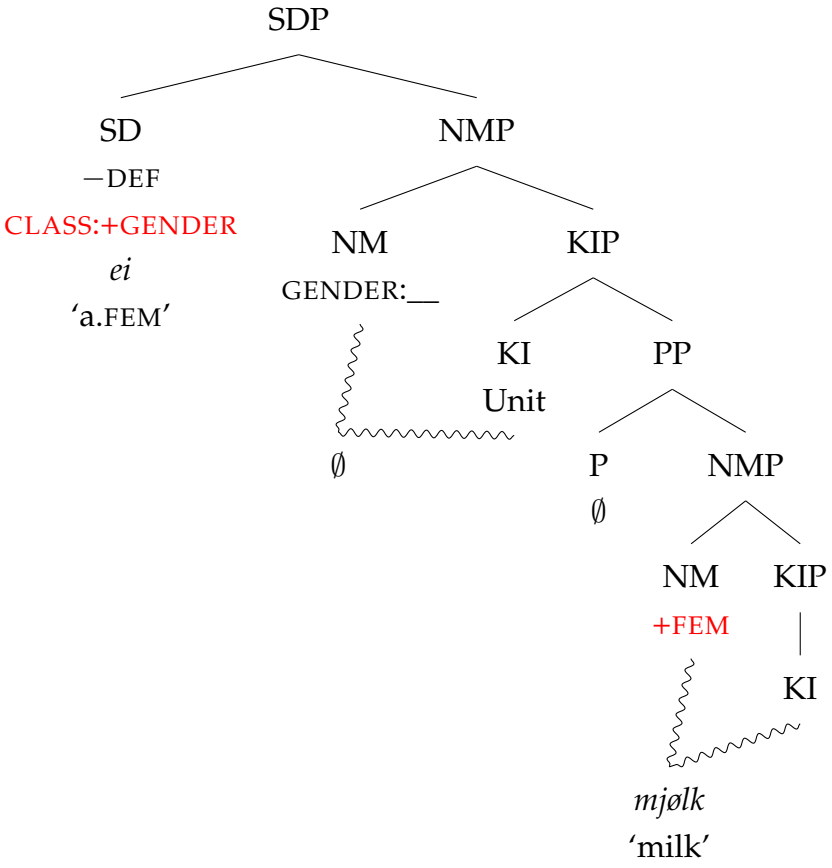
Note that the NM of Unit does not have its own gender feature – as Unit does not have any overt nominal equivalent, there is no noun to associate with a gender.

This has consequences for agreement. Remember that when portioning is attempted, masculine and feminine nouns show agreement in gender between the indefinite article and the gender of the visible noun (e.g. *vin* 'wine', *mjølk* 'milk'). For neuter nouns, portioning does not work when the indefinite article takes the neuter form, but it is marginally possible if the article takes the masculine form (e.g. *ein vatn* 'a.MASC water.NEUT'). Portioning is not at all possible when the article takes the neuter form (e.g. *eit vatn* 'a.NEUT water.NEUT'). This makes sense if we accept the view that the

NMs of gendered nouns contain ±FEM and the NMs of neuter nouns contain ±ATOMIC. Let me now go through how gendered nouns and neuter nouns end up with the forms and judgments that they do when Unit is present.

For a portioned phrase like *ei mjølk* 'a.FEM milk.FEM', the indefinite article agrees with the gender of the lower NM, because the NM of Unit is unvalued. To find a class feature to agree with, SD needs to probe down further, into the lower noun phrase, and make use of the one ±FEM value that is available in the SDP structure. This is how the structure ends up looking:

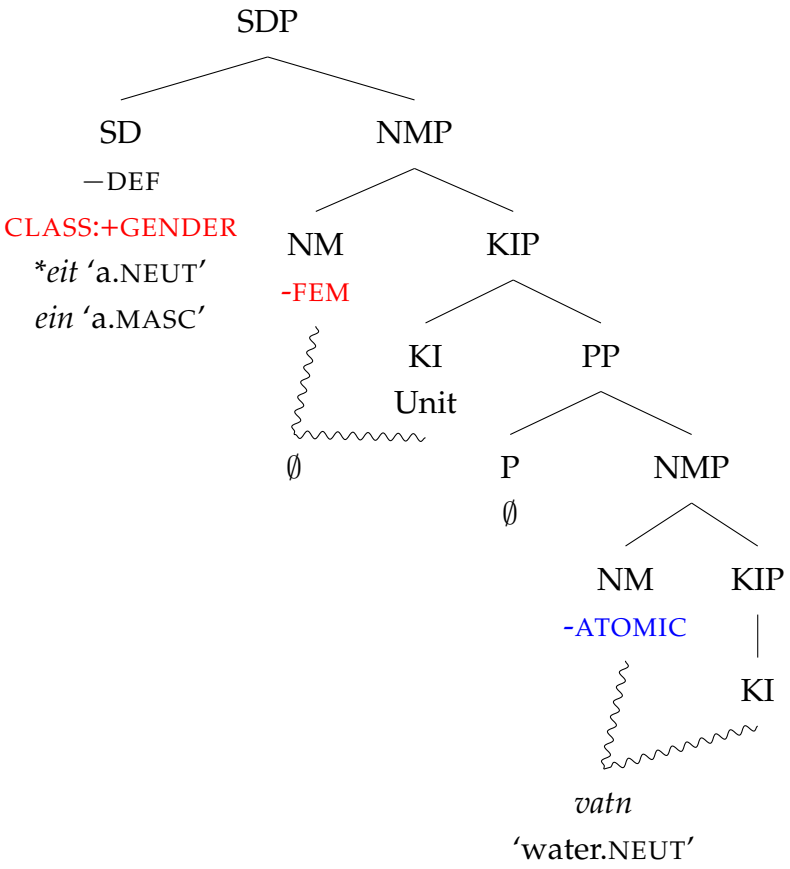
(103)



The indefinite article then ends up with the feminine agreement form *ei* because of the +FEM feature attached to the NM of *mjølk* 'milk', not the one that is attached to Unit.

The reason that a "portioned" version of a neuter noun like *vatn* 'water' involves the masculine indefinite article *ein* relates back to the use of masculine as the default gender in Norwegian. Essentially, −FEM is placed on Unit's NM because SD requires a gender feature to agree with. SD, as an agreeing head, needs a noun class feature to agree with, whether this be a gender or an atomicity feature. Agreeing heads, when there is no class feature immediately available, default to needing to agree with a gender feature specifically. In the case of *ei mjølk* 'a.FEM milk.FEM', the SD is able to find its desired gender feature in the lower NM head. When this lower head is occupied by an ±ATOMIC feature, however, the last resort is to assign masculine gender to Unit's NM.

(104)



It is specifically the −FEM gender value that shows up on Unit's NM head because, as I showed in subsection 2.4.2, the masculine gender is the default

assignment gender in Norwegian: *ein* 'a.MASC' shows agreement with the default masculine gender that is assigned to the Unit head.

This subsection has shown that neuter nouns with the −ATOMIC value are in fact unable to change this value to +ATOMIC. When it looks possible in phrases like *ein vatn* 'a.MASC water.NEUT', this is because of the presence of a nonovert Unit head, not the use of *vatn* 'water' with a count reading. I believe that portioning, in the sense of an invisible transformation from "mass" to "count", always involves recursion around a nonovert Unit head, regardless of whether the noun is gendered or neuter. The difference between gendered and non-gendered nouns in this respect is that the former gives rise to agreement between SD and the lowest noun, whereas the latter involves the assigning of default gender to Unit.

2.5.2.2 Definite form

Portioning neuter "mass" nouns in the definite form is not possible either, but here the data may seem even more fine-grained. The neuter form can indeed appear in contexts such as sentence (105) below:

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

However, the definiteness marking we see here is unlikely to be an actual sign that portioning has taken place. The definite form can instead be seen to establish some "contextually identifiable medium" (Jackendoff, 1991). Consider the example below:

(106) I dropped my glass of water. *The water* spilled everywhere.

The sense of *the water* is here different from that we have seen in other portioning cases: it no longer refers to a mass of water restrained within a contextually dependent container. *The* establishes familiarity and uniqueness, but does not portion. If definite mass nouns had always been portioned, we would expect it to be impossible for these noun phrases to be the subjects

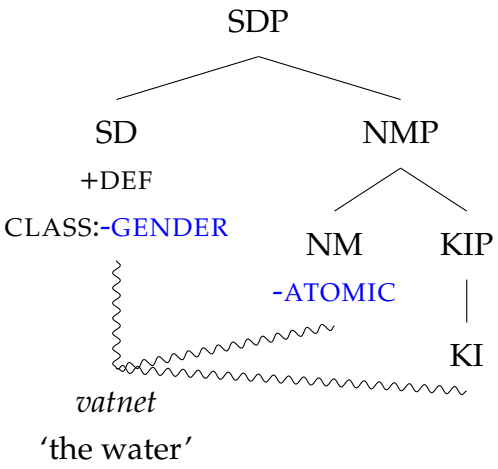
of mass-specific words like *accumulate*. But this is acceptable:

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

A definite mass noun then does not need to entail a portioned reading. In the case of Norwegian neuter nouns, I argue that there is no Unit head here: the "portioned" reading comes from context, and the definite suffix will force the accommodation of a previously established amount of the substance, which may or may not have actually been overtly portioned in some way. The atomicity value is then still −ATOMIC for the noun phrase.

Since the definite determiner head shows up as a suffix, it must be the case that it is part of a span together with NM and N. It agrees with the ±ATOMIC feature in NM:

(108)



2.5.2.3 A note on sorting

A topic so far untouched is sorting. Based on English data, sorting has often been conflated with portioning as mass-to-count derivation. English does not show signs that these are different phenomena, based on morphosyntax:

(109) We ordered a beer.
"a beer" = a (e.g. bottle or glass of) beer (PORTIONING)

(110) We have a beer on tap that's especially hoppy.

"a beer" = a type of beer (SORTING)

The listener would depend solely on context or other parts of the sentence, rather than nominal morphosyntax, to figure out whether it was a case of sorting or portioning. I suggest that grouping them together is misleading to the discussion of countability coercion as a whole. Specifically, I believe sorting to be a case of polysemy. Portioning and sorting are morphosyntactically different in that, both in the definite and the indefinite forms, there is gender and number agreement for sorting but not portioning. This is the case for Mainland Scandinavian, but also German and Icelandic (cf. Wiese and Maling 2005). This is even the case for neuter nouns in Norwegian.

Below are all combinations of number, definiteness and gender in a sorting environment: singular indefinite (111); singular definite (112); plural indefinite (113); plural definite (114). The sub-examples include masculine, feminine and neuter nouns, respectively.

(111) 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 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.'

c. *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.'

(112) a. *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.'

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

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

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

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

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

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

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

Note that when sorted nouns are counted in the plural number (like above), they are marked with a plural suffix. There are then two notable differences between sorting and portioning, the first being that portioning, unlike sorting, does not show plural marking on the noun when a numeral like *to* 'two' is used. I here repeat example (100):

(115) a. *to vin-∅ / #vin-ar, to vodka-∅ /*
two wine.MASC-∅ / wine.MASC-PL.MASC two vodka.MASC-∅ /
#vodka-ar, to pasta-∅ /
vodka.MASC-PL.MASC two pasta.MASC-∅ /
#pasta-ar
pasta.MASC-PL.MASC
'two wines, two vodkas, two pastas'

b. *to suppe-∅ / #supp-er, to mjølk-∅ /*
two soup.FEM-∅ / soup.FEM-PL.FEM two milk.FEM-∅ /
#mjølk-er
milk.FEM-PL.FEM
'two soups, two milks'

c. *to garn-∅, to gjær-∅, vatn-∅*
two yarn.NEUT-∅ two yeas.NEUT-∅ two water.NEUT-∅
'two yarns, two yeasts, two waters'

I argued in subsection 2.5.2.1 that there is no plural marking here because the numeral counts a nonovert Unit head, not the mass noun itself. Based on this detail, it does not seem to be the case that there is a Unit head present in the case of sorting.

A second difference between sorting and portioning is that neuter nouns can be sorted, but not portioned. I will contrast the sorting repeated from example (111c) to the attempted portioning in (117):

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

(117) *#Me har eit vatn på bordet som er ekstra*
we have a.NEUT water.WATER on table.DEF that be.PRES extra

stort.
big.NEUT
Intended: 'We have a (e.g. glass/bottle of) water on the table that is extra big.'

There is more Germanic data to show a distinction between portioning and sorting, one example being Icelandic. For *kaffi* 'coffee', which is neuter, neuter agreement shows up when the noun is sorted (118a), but not when it is portioned (118b):

(118) a. *Get ég fengið annað kaffi?*
may I have another.NEUT coffee.NEUT
'Could I have another (kind of) coffee?'
(Icelandic; Wiese and Maling 2005, p. 24)

b. *Get ég fengið annan kaffi?*
may I have another.MASC coffee.NEUT
'Could I have another (cup of) coffee?'
(Wiese & Maling, 2005, pp. 22)

Again it is the case that sorted nouns are the ones that show "normal" inflection and agreement.

In German, we see that if the noun *Bier* 'beer' is portioned, it will not receive plural marking, but if it is sorted, it will get regular plural marking:

(119) a. *zwei Bier-e*
two beer-PL
'two types of beer'

b. *zwei Bier-∅*
two beer-∅
'two (glasses of) beer'
(German; Wiese and Maling 2005, p. 29)

As we can see, sorting behaves differently from portioning, despite some superficial similarities. Because of this (crosslinguistically robust) difference between portioned and sorted nouns, it is likely that sorting does not involve a Unit head at all. Instead, it can be treated as a case of polysemy. A sortal meaning for a noun N ("sort of N") is count, not mass.

Portioning, however, cannot be seen as polysemy. One reason to deny this claim is that, at least in Norwegian, polysemous neuter nouns will never take a masculine or feminine form. That is, polysemous nouns keep their "gender" across their related meanings. Below are some examples of neuter nouns that are polysemous and must show neuter agreement. Below are some examples:

(120) *lys-et*, *glas-et*,
light.NEUT-DEF.NEUT glass.NEUT-DEF.NEUT
kontor-et, *blod-et*
office.NEUT-DEF.NEUT blood.NEUT-DEF.NEUT
'the light (generally or in a ceiling or lamp); the glass (the material or the drinking container); the office (the work location or e.g. the people in it); the blood (the substance or family lineage)'

To my knowledge, there is no exception to this generalization. This again supports a lexical specification approach to gender assignment, and we are able to treat sorting as polysemy, leaving the interpretation to pragmatics rather than positing a Unit head to push us to the relevant reading.

2.5.3 A comment on semantics: 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). In section 2.3, I presented operators that 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 (as formally defined in section 2.3). This would be different from a grinder or packager, as NM is directly adjacent to KIP 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 Chierchia 2010; Krifka 1989; Pelletier 1975; Rothstein 2017). If such operators existed, they should be able to alter the atomicity value lexically specified by the noun, contrary to fact. 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.

2.5.4 Summary

In this section I have presented an analysis of mass and count nouns in Norwegian, making special use of grinding and portioning as grounds for discussion. These operations are important to consider to unveil whether atomicity is part of the lexicon, or whether these "alterations" of atomicity have to come from special operators at the formal logical level. I have argued that there is a particular relationship between atomicity and gender in Norwegian: they are both considered noun classes whose features are located on a noun marking head, but they are in complementary distribution with each other. If a noun has gender as part of its lexical entry, it will show masculine or feminine inflection, and trigger masculine or feminine agreement. If it does not, it will appear as neuter. This is backed up by the fact that neuter nouns cannot be ground or portioned, which I argue is because the identity criteria features under NM for these nouns do not involve gender, but rather atomicity. Gendered nouns *are* able to receive a ground or portioned interpretation, but I believe that this is a pragmatic operation rather than a syntactic-semantic one.

2.6 Conclusion

My analysis has some theoretical implications. In any case, there is no data in Norwegian to support an inherent mass approach. Instead, the analysis leads to a system that makes lexical specification of atomicity possible, without it being a requirement. The analysis supports lexical specification as an explanation for the inability to grind bare singular nouns in languages like Mandarin, without postulating the presence of $\pm$ATOMIC in all nominal structures. My approach raises the question of how gender and atomicity interact, such that atomicity is not in the lexicon when gender is. The distinction between classifiers and gender is blurry in the literature, and the

two have previously been argued to essentially be the same system. Existing descriptions of various gender systems that are (or seem) semantics-based do not always make it clear *why* these categories are genders and not classifiers.

However, there is one notable difference between gender and atomicity, namely that gender is often largely *not* semantics-based, though there are remnants of semantics such as the tendency for masculine and feminine gender to correlate with biological sex. Atomicity is always based on semantics, regardless of language. This distinction becomes clear when we consider the fact that the gender of a noun is fixed and cannot be changed to alter the meaning of the noun, while this can be done with atomicity (in nouns where atomicity is derived from context rather than a feature on NM). For example, in Norwegian, one cannot add the feminine definite suffix *-a* to the masculine noun *student* 'student' to signal that the student is female. But for atomicity, we see that grinding and portioning *do* change the final interpretation of the noun phrase. With what we have uncovered in this chapter, it is not unreasonable to think that classification and genders are originally from the same source but have developed differently. Atomicity may be a kind of category that is both semantically and (in many languages) grammatically encoded, while gender has strayed from semantics and is now left as a strategic way to grammatically divide up nouns.

What does this mean for the question of whether atomicity is lexically specified? My analysis essentially concludes that nouns are lexically specified for *some* category, whether that be atomicity or grammatical gender. Remember that I only make this claim for Norwegian, which showed a distinction between gendered and neuter nouns in their (in)ability to grind and portion. It is also not fruitful to make a one-size-fits-all claim about gender. Languages are clearly different in how "gender" is split up, how it behaves, to what extent it is or is not associated with semantics and how or whether nouns in these languages can grind and portion. In any case, my analysis supports the core claim of the lexical specification approach, i.e. that there is a spot in the lexicon for atomicity to be given a positive or negative value.

I rejected the hypothesis that there are operators such as grinders or por-

tioners in the semantics, at least in Norwegian. However, considering how a masculine noun like *appelsin* 'orange' still "feels" countable, one could consider it to be coercion to use it in a mass setting, with mass morphosyntax, but in my view that can only be a pragmatic effect. My next step is to consider another kind of coercion in natural language whereby noun phrases can be interpreted as events, without any overt transformation taking place. The question becomes whether this is also just a pragmatic effect, or if there is evidence that there is underlying syntactic-semantic content driving the coercion.

Chapter 3

Stages and events: frequency adjectives

3.1 Introduction

In the previous chapter, I argued that some nouns have atomicity in their lexicon while others do not. Since ±ATOMIC can be viewed as a heavily semantics-related feature, we may ask which other semantic properties are present in the syntax and, if they are present, what the specifics of that would look like. In the following I will center on another property that is semantics-related but which I will argue is part of the syntax, namely kinds and tokens, and the relationship between entities and events.

I will address the two-way distinction that is often made between kinds, simply put the general idea of an entity, and individuals, which can be described as members of the total set that the kind represents. For example, *the dog* can be seen as a single individual member of the totality of dogs that exist in the world. Once we have identified a unique dog, we can ascribe properties to that dog, such as "being brown", and this property will be stored in our memory of the individual. In the framework I follow, this distinction is captured in the syntax: when *dog* refers to the kind of thing that is a dog, it makes up a kind phrase (KIP) in the nominal projection. When an entity of this kind is singled out, a head exists immediately above

the kind, with the role of *realizing* the kind. Zamparelli (2000) calls the type-shifter that transforms the kind to an individual a kind-to-object operator (KO):

(1) ZAMPARELLI'S (2000) KIND-TO-OBJECT TYPE-SHIFTER
KO($||\text{KIP}||^{M,g,w}$) = $\lambda x^{o}(^{\vee}\mathbf{R}(x, ||\text{KIP}||^{M,g,w})]$
(Zamparelli, 2000, p. 175)

The result of the realization is an individual entity, and the property of "being brown" can then be attributed to a predicate, not to the dog kind.

However, there is other literature that casts doubt on whether the sentences in (2a) and (2b) below involve exactly the same kind of denotation for the nominal *the dog*. The first sentence describes the dog as being a fast runner, ascribing it a constant trait. The second sentence only describes the dog at a temporary moment in time, i.e. last week:

(2) a. The dog runs fast.
b. The dog ran fast last week.

If "ran fast last week" does not attach a general property to the dog, does it really describe an individual, whose identity endures across many different spatiotemporal situations? To separate these two types of descriptions, a third category has been identified in the literature, namely *stages* (see especially Carlson 1977). While individuals are permanently stored, consistent objects in the mind, stages are better described as "slices" of an entity. A stage description can change and does not permanently add information about an entity. Ultimately, I argue that stages of individuals are inherently events, in that there cannot be a "slice" of an individual without the event through which the individual exists at that moment in time and/or space (a sentiment shared by Carlson 1977 and Kratzer 1995). The difference between individuals and stages seems inconsequential, or more of a philosophical exercise than a linguistic one, but I will present data that speaks for a *formal* distinction between individuals and stages.

The empirical basis for this investigation is frequency adjectives (FAs),[1] some of which appear to have larger scope than one would typically expect from an adjective. These frequency adjectives seem to contribute information related to the events that the modified entities participate in. Sentences containing the FAs *occasional*, *odd* and *rare* pose a seeming paradox between syntactic hierarchy and semantic interpretation (see especially Bücking 2012; Gehrke 2021; Gehrke and McNally 2011, 2015; Morzycki 2016; Sant and Ramchand 2022; Schäfer 2007; Stump 1981; Sæbø 2016; Zimmermann 2003). Namely, in sentences like the ones below, it "feels like" the FA should actually be an adverb such as *every now and then* or *rarely*:

(3) The/An occasional sailor strolled by.
$\sim$ 'Occasionally, a sailor strolled by.'
(first introduced by Bolinger 1967)

(4) The odd train still travelled along the track – occasionally a train would come out from Lauder ...[2]
$\sim$ 'Sometimes, a train still traveled along the track ...'

(5) The rare car would barrel past[3]
$\sim$ 'Rarely, a car would barrel past'

I name these three adjectives *occasional-type FAs*.[4] Looking at this case study is fruitful because it intersects various topics that are not always intersected. At a first glance, the problem is scope-related: how can the FA end up asserting something about the eventualities expressed by the verb, and why does it not just take the form of an adverb?

Just as important, however, is the fact that sentences containing these

[1] I will show in the chapter that "frequency adjective" may be misleading, as the situations they spread out may be *spatially* sparse, as well. Still, I will continue to call them frequency adjectives to maintain continuity in the literature.

[2] `https://vantagepoints.ca/stories/blue-flea/`, last accessed 3 June 2024.

[3] `https://www.magzter.com/stories/Lifestyle/The-Oprah-US/WHATS-Beautiful-TO-YOU`, last accessed 5 June 2024.

[4] Other FAs than *occasional*, *odd* and *rare* exist, such as *daily*, *frequent* or *regular*. My focus will be on the *occasional* type.

adjectives implicate a range of meanings traditionally discussed within research on event semantics. As modifiers of *frequency*, these FAs necessarily involve a multiplicity of events, with additional constraints on the nature of the pluralized situations. The event requirement seems puzzling when we consider how these adjectives can appear next to an entity noun phrase like *glass of wine* without there being a sense that the verb contributes to the "plural event" information:

(6) The occasional glass of wine is good for you.
$\sim$ 'Drinking a glass of wine every now and then is good for you.'
$\not\sim$ 'Drinking a glass of wine is sometimes good for you.'

The big puzzle in the literature has been how we end up with the reading that we do in (3). I am however equally interested in how the subject in sentence (6) can denote an event, without any overt sign of this event existing. Since *occasional* must intuitively modify an event, the question is whether an operator is *formally* inserted to "fix" the mismatch we see, or whether the event-related reading is purely pragmatic. I will show that *occasional* does in fact modify a (nonovert) event in the semantics (following, e.g., N. Asher 2011; Pustejovsky 1995), and that this event makes up a head in the syntax. As such, one of my main points in the chapter is that the pragmatic wish to make an entity denote an event forces the introduction of content in the syntax-semantics interface.

These are the questions I am concerned with in the chapter:

1. In the sentence *The occasional sailor strolled by*, how do we end up with the intuition that the verbal event of strolling-by is pluralized?

2. How do we unify all cases of modification by *occasional*-type FAs? That is, what kind of analysis of *occasional*-type FAs can also cover sentences like *The odd glass of wine is good for you* just as well as *The odd downdraft is nice on a hot summer day*?

3. What do *occasional*-type FAs modify, and what is their semantic contribution?

4. Why do these sentences always involve a stage component?

The chapter is structured as follows. In section 3.2, I present the essential data that any satisfying analysis needs to account for, including a discussion of the notion of "stage" or instantiation of an individual, which turns out to be relevant for characterizing the meaning of these constructions. In section 3.3, I present earlier work done on the "scope" question and point out some ways that the approaches can be improved. In section 3.4, I study the ways that the formation of stages has been argued to work, eventually arguing that stages and individuals are actually different in that stages are inherently bound to events. In section 3.5, I propose the existence of a nonovert event that is integral to stage interpretation. In section 3.6, I present the final analysis of sentences containing *occasional*-type FAs. Section 3.7 concludes.

3.2 Data

The data relating to these FAs is complex, nuanced and context-dependent. For this reason, it is difficult to get a full picture of the relevant pieces, and it seems that each contribution to the literature has focused on its own selection of data. My goal is to strip the data down to its essentials: which properties do sentences containing *occasional*, *odd* or *rare* have? I find that these sentences have three obligatory traits: 1) an event requirement; 2) the pluralization of this event; 3) a stage reading. Any successful analysis of *occasional*-type FAs should be able to explain these essential facts, and to my knowledge, no earlier work has satisfied all three points on the list.

3.2.1 Scope and event requirement

I will elaborate on the first "paradox". When used in English, there is an intuition that *occasional*-type FAs in some sense modify the verb.[5] The data

[5]English is not completely unique crosslinguistically. Speakers of Turkish report some level of acceptability using *ender* 'rare' though they describe it as "iffy" or "poetry language" (Deniz Özyıldız, p.c.). Some of the Russian speakers I consulted allowed the relevant read-

has been particularly eye-catching because it sometimes seems like the FA modifies a *verbal* event outside of the confines of the noun phrase it is located in.

(7) The occasional sailor strolled by.
∼ 'There are multiple situations of a sailor strolling by, and this happens rarely.'

The sentence above sparked an interest because it is not immediately clear how the use of *occasional* results in a plurality of strolling-by events. This "adverbial" reading of *occasional* is equally possible when it is located in an object noun phrase:

(8) I still drink the occasional cup of strong coffee and consider all types of teas milder than it.[6]
∼ 'There are still multiple, but few, situations where I drink a cup of strong coffee ...'

These frequency adjectives, intuitively, tell us something about the frequency and distribution of "events" of a certain kind, even though they syntactically combine with a noun. There are a number of different possible sources for the event that gets "counted" in this way. One direct and straightforward way is when the sister noun denote an event, such as the nouns *meeting*, *trip* or *meal* (see especially Gehrke and McNally 2011, 2015 for more details). Below is an example:

(9) An occasional trip into the past can rekindle fond memories.[7]

ing with *redkij* 'rare'. Italian shows similar behavior with *solito* 'usual', and Spanish with *infrequente* 'infrequent'. Norwegian may (at least marginally) be able to get the relevant reading with *tilfeldig* 'random'. This chapter is only minimally comparative, but a larger investigation into the nuances in various languages may prove fruitful. See Zimmermann (2003), Schäfer (2007) and Gehrke and McNally (2011, 2015) for discussions about *gelegentlich* 'occasional'.

[6] `https://www.teaforum.org/viewtopic.php?p=618`, last accessed 24 May 2024.

[7] `https://www.nytimes.com/1986/05/09/sports/vilas-doesn-t-feel-nostalgic.html#:~:text=An%20occasional%20trip%20into%20the%20past%20can%20rekindle%`

∼ 'The act of participating in these situations of taking trips into the past can rekindle fond memories.'

In other cases, an event may be located inside an agentive noun, such as *dancer*, *guitarist* or *earner*:[8]

(10) Alain is an occasional bird-watcher.
∼ 'Alain sometimes watches birds.'

Finally, a noneventive noun phrase can be coerced into a contextually-dependent event relating to the entity represented by that noun phrase.[9] In the sentence below, the noun phrase *the occasional glass of wine* can, from context, be interpreted as a rare occurrence of *drinking* a glass of wine:

(11) As they say, the occasional glass of wine is good for you, making yoga and wine the perfect pairing.[10]
∼ 'As they say, it is good for you if you participate in multiple, but few, situations of drinking (or doing something else with) a glass of

20fond%20memories.%20, last accessed 24 May 2024.

[8]This is called the "internal reading" by Gehrke and McNally (2011, 2015) and Morzycki (2016), and it corresponds to the so-called "subsective" reading identified with manner adjectives (Larson, 1995; Maienborn, 2020), which I mentioned in the introduction chapter. I repeat the classic example sentence here:

(i) Olga is a beautiful dancer.
∼ 'Olga dances beautifully.'

The internal reading itself inevitably leads to a larger discussion of hierarchy, word formation and the relationship between semantics and pragmatics. It touches upon topics that are interesting but outside the scope of this chapter.

[9]This is often labeled the "generic reading" in the literature (Bücking, 2012; Gehrke, 2021; Gehrke & McNally, 2011, 2015; Schäfer, 2007; Stump, 1981), while other work does not acknowledge a separate "contextual event" reading (e.g. Sæbø 2016; Zimmermann 2003). I will not focus on the distinction but merely the event requirement of *occasional*-type FAs. My proposal will provide a perspective where this reading is not fundamentally different from the "adverbial" reading, in terms of the behavior of *occasional*-type FAs.

[10]https://www.visitwestside.com/lakeside-fun-for-locals-and-visitors-alike/, last accessed 24 May 2024.

wine.'

Occasional-type FAs thus require an event description. What do they do to these events?

3.2.2 Pluractionality

It is intuitive that an adjective that expresses *frequency* should repeat events in some way, and this is also what the data shows. The use of *occasional*-type FAs forces the event to be plural (*pluractional*[11]), and this force is so strong that the pluractional reading is required regardless of the number on the noun.[12]

[11]See especially Lasersohn (1995).

[12]There is disagreement about whether *occasional*, *odd* and *rare* have the same semantics as other frequency adjectives, such as *daily*, *monthly*, *frequent* and *sporadic*. Gehrke and McNally (2011, 2015) claim that FAs other than the *occasional* type cannot provide a plurality of a verbal event without a plural number on the noun, e.g., *She wrote frequent letters to her mother* can result in a pluractional reading while *She wrote a frequent letter to her mother* cannot. This would suggest that the plurality of the event is expressed via the plural number, and that it does not come from the meaning of *frequent*. On the other end, Stump (1981) uses the singular form in his examples to show that an FA like *sporadic* can have the same reading as *occasional*. I ran an informal acceptability survey to test whether number influenced acceptability in the FAs *yearly*, *sporadic*, *periodic*, *frequent* and *occasional*. I tested 101 native speakers of English, who I acquired through Prolific. The results are variable: on a 1-5 Likert scale, *sporadic* showed a notable increase in acceptability when the noun was plural (72.2% of participants gave the rating 4 or 5 for the plural form; 56.5% did so for the singular form). However, for *periodic*, the increase was only slightly better, and for *frequent*, *yearly* and *occasional*, the difference was close to nonexistent. More information about the survey is available upon request.

The survey cannot be used as a definitive report on native speakers' judgments, as there may be limitations on the design used. When asking native speakers personally, there is a consensus among the ones asked that the plural number facilitates the desired reading, while the singular number does not. However, as it stands, we have no conclusive data. I have chosen not to comment much on FAs other than the *occasional* type because it opens a discussion of FAs that may or may not behave the same, or that are different in ways that warrant more, possibly unrelated investigations. If other FAs are found to have the same meaning and behavior, this does not disprove my argument. The goal in this chapter is to focus on *occasional*-type FAs, which do have this pluractional force clearly with singular

Under the special reading of the sentence *The occasional sailor strolled by*, there is no context where only one strolling-by event takes place. Below, we see that without the *occasional*-type FA, there is no reading in which the event happened multiple times, but this reading is in fact the only possible reading when the FA is added:

(12) A sailor strolled by. #Every time it happened, the sailor would greet me.
→ only singular event reading available

(13) The/A(n) occasional/odd/rare sailor strolled by. Every time it happened, the sailor would greet me.
→ plural event reading available

This is made especially clear when we add an adverb like *once*, since it forces the singular event reading:

(14) #The/A(n) occasional/odd/rare sailor strolled by once.

Occasional-type FAs must be connected to a multiplicity of events that they can distribute sparsely.

3.2.3 Stages and events

Finally, there is the peculiarity of *occasional*-type FAs that, when they are used, the sentence expresses the splitting-up and distribution of entities into (spatio)temporally restricted subpieces of that entity. In other words, we are specifically counting and distributing *stages* of entities.

This observation is best preceded by a classic example of this phenomenon, relating to numerals. Krifka (1990) observes that the sentence below is ambiguous:

(15) Four thousand ships passed through the lock last year.
(Krifka, 1990, p. 487)

complements. If other FAs turn out to have the same behaviour, they can be given the same analysis as the one I will propose for the "occasional" case.

On one reading, *four thousand* counts each individual ship that each performed one event of passing through the lock last year. However, the sentence could also mean that there were four thousand passing-through events, each performed by *some ship or other*. Under the latter reading, the individually picked out ships are not the things that are being counted here – in principle, the same ship could participate in multiple passing-through events, like in a scenario where border patrol must register each ship-passing-through-the-lock situation, regardless of whether they have registered a given ship before. Barker (1999) argues that the numeral is in these cases counting *stages* (see also Doetjes and Honcoop 1997).

Unlike numerals, *occasional*-type FAs are restricted to only counting stages. Imagine a scenario in which the speaker is sitting indoors trying to focus on their homework by a window:

(16) The occasional seagull flew past the window squawking, but otherwise my silence was not disturbed.

The sentence can be used even in cases where only one seagull flies past the window, as long as the "some seagull flying past" situation happens multiple times. If *occasional*-type FAs simply counted the number of individual seagulls, we would expect the sentence to be false if there were not multiple (though few) seagulls involved in flying past the window. The fact is that the identity of the seagull is not at issue: *seagull* here somehow denotes an instantiation of the type of thing that is a seagull rather than specific individual seagulls.

Even in cases where it is clear that there is only one referent in the noun phrase, *occasional* is allowed and does not pluralize the nominal referent. In the sentence below, *Mara's occasional glass of wine* refers to a single glass of wine, and what *occasional* does is express that Mara performs *few* drinking events of glasses of wine over a stretch of time.

(17) Mara's occasional glass of wine spilled all over the table.
→ one particular glass of wine (in a series of few glasses of wine drunk by Mara, along a certain timespan)

The *glass of wine* entity can also be pluralized, as participants of both Mara's drinking of them and of their ending up on the tablecloth:

(18) Mara's occasional glass of wine always ends up all over the tablecloth.
∼ 'Of those few glasses of wine that Mara allows herself, all of them end up all over the tablecloth.'

As we can see, even when the entity is tied to a unique individual, it is still the case that *occasional*-type FAs require a repetition of stages of glasses of wine through a contextually-relevant event such as drinking. The stage interpretation of these entities has been noted before (see Schäfer 2007; Stump 1981), but it will play a bigger role in my analysis than it did in these previous contributions. I have not seen earlier work that points out a strict *requirement* for stages as opposed to using somewhat vague terms like "realization", "instantiation" or "token" (Gehrke & McNally, 2011, 2015; Schäfer, 2007; Stump, 1981). But the data in this subsection shows that *occasional*-type FAs do in fact distribute stages specifically, and because of this I believe that the implementation of stages should be at the heart of the analysis.

3.2.4 Taking stock

I have now identified the four pillars that will lead my analysis of *occasional*, *odd* and *rare*: event modification, pluractionality and stages. There is of course other data that needs to be addressed, but this section serves as a baseline. In the following, I will discuss the "scope problem" and how it has been approached in the past.

3.3 Scope

The core puzzle in the literature relating to *occasional*-type FAs is how we end up with a reading in which the FA "feels like" an adverb. The opinions can be divided into two camps: the first is that *occasional*-type FAs are part

of a complex quantifier and in this way get scope over the verbal event (Larson, 1998, 1999; Morzycki, 2016, 2021; Stump, 1981); the second is that they are adjectives that modify the noun next to them, but with the special property that they distribute instantiations of entities (Bücking, 2012; Gehrke & McNally, 2011, 2015). Both approaches have notable benefits, but they also have drawbacks. In what follows, I will show that the best approach is one in which they are adjectives but still need to somehow be compositionally connected to the verbal event.

3.3.1 Quantificational approach

In the quantificational analysis, *occasional* is part of a span with the article in SD[13], forming a complex quantifier [*the* + *occasional*] (Larson, 1998, 1999; Morzycki, 2016, 2021; Stump, 1981; Zimmermann, 2003).[14] Stump (1981) and Zimmermann (2003) point out that no adjective can come between the article and *occasional*, when the reading is "adverbial":

(19) The welldressed, occasional sailor strolled by.
$\not\sim$ 'It was sometimes the case that a welldressed sailor strolled by.'

The conclusion under this approach is that *occasional* can be part of a syntactic span together with SD, and that the word is spelled out in the SD head instead of the A head. In a movement-based theory, this means that A has moved to SD and is incorporated into the determiner. A quantification approach predicts that nothing can come in between the determiner and *occasional* in these sentences.

[13] I remind the reader that "SD" stands for "strong determiner", which is part of the three-layer noun phrase structure of Zamparelli (2000) that I generally follow. When I use the term "SD" in this subsection, I refer to a (quantificational) determiner. See subsection the introduction for my motivation for a layered, semantics-friendly nominal projection.

[14] A quantificational analysis touches upon other adjectives that overlap or interact with quantifiers in distribution or behavior. Some examples are *heile* 'whole' or *same* 'same' in Norwegian (Svenonius, 1994), *die ganzen* 'whole, entire, intact' in German (Haspelmath, 1995) or *many*, *much*, *few* or *little* (Hackl, 2000; Rett, 2018; Romero, 1998; Solt, 2009, 2015). I will unfortunately not be able to approach these phenomena in more detail.

Another piece of data used in the quantificational approach is that, under the "adverbial" reading, the FA-containing noun phrase must be headed by an article and never a numeral, quantificational determiner or quantity word. Consider the minimal comparisons below:

(20) a. Antonio watched an/the occasional horror movie.
$\sim$ 'Occasionally, Antonio watched a (single) horror movie.'
b. Antonio watched one/two/three occasional horror movie(s).
$\not\sim$ 'Occasionally, Antonio watched one/two/three horror movie(s).'
c. Antonio watched every/some/many occasional horror movie(s).
$\not\sim$ 'Occasionally, Antonio watched every/some/many horror movie(s).'

Stump (1981) argues that the article is "semantically null". The idea is that there would be a clash if there are two quantifiers with the same scope, in the same sense that **some every man* is unacceptable.

I have not seen the following point made, but I wish to add that *occasional* can in fact appear before a numeral, with the result being the desired reading:

(21) Antonio watched the/an occasional two or three horror movies.
$\sim$ 'Every once in a while, Antonio watched two or three horror movies.'

I will return to this example in subsection 3.6.3.1.

Below is Zimmermann's (2003) denotation for the Infrequency Operator INFREQ that is represented by the complex quantifier [*the* + *occasional*]. INFREQ specifies the repetition of pairs of events and individuals $\langle$e,x$\rangle$, and this repetition is spaced out without temporal overlap. The event *e* is part of a contextually specified event *e**. This *e** is an event placeholder that is presupposed to exist, and whose details are filled in when the quantifier

selects the verbal set.

(22) ZIMMERMANN'S (2003) INFREQUENCY OPERATOR

a. There are some pairs ⟨e,x⟩, [part-of(e,e*) ∧ sailor′(x)]: (stroll_by′(x,e) ∧ ∀⟨e′,x′⟩, ⟨e″,x″⟩ [stroll-by′(e′,x′) ∧ stroll-by′(e″,x″) ∧ sailor′(x′) ∧ sailor′(x″)]: ((e′=e″) ∨ (e′≠e″ ∧ ∃t [between′ (t,(τ(e′), τ(e″))]))

b. There are some pairs ⟨e,x⟩, with e part of a (contextually given) event e*, and x a sailor, such that e is a strolling-by of x, and any two strolling-by events of a sailor occur at separate points in time.
(Zimmermann, 2003, p. 273)

Zimmermann (2003) makes it especially clear that there can be no temporal overlap between each event, but he does not specify that the distance between each event must be large, i.e., that the events are sparsely distributed.

The quantificational approach has clear merits, but also some issues. I will present the arguments below.

3.3.1.1 Benefits

The intuitive attractiveness of a quantificational approach is that it offers a straightforward explanation for the importance of the verbal event in the sentences that show "strange" scopal properties. The approach could possibly explain why *occasional*-type FAs cannot be used predicatively (pointed out by Gehrke and McNally 2015, p. 849):

(23) a. The check-up was weekly/infrequent/frequent/periodic/sporadic.

b. #The mosquito was occasional/odd.

This would be unacceptable in the same way that **The sailor is every* is unacceptable.

Finally, assuming the view that the indefinite and definite articles are not themselves quantifiers, the quantificational approach may be able to explain

the restriction to articles and the ban on quantifiers and numerals under the desired reading, shown in example (20).[15]

3.3.1.2 Downsides

There are however a number of downsides to a complex quantifier approach, some of which I will lay out here. First, the explanation that the adjective forms a span with a determiner does not have enough syntactic support. We can begin by refuting the "adjective ordering" argument: if we believe that *occasional* is spelled out with SD at the SD level to get scope over a verb, then the prediction is that the head *occasional* is located lower in the adjectival extended projection. If the FA is already base-generated at the top of the projection, then adjective ordering is not proof of an adjective-determiner span formation.

Adjective ordering tends to be rigid in natural language, and we near-universally find that "objective" adjectives, such as *Italian* or *brown*, are located closer to the noun than "subjective" ones, like *pretty* or *large* (see especially Cinque 1994). For example, *big brown bear* sounds natural, while ??*brown big bear* does not. Since *occasional*-type FAs can be characterized as contingent rather than essential, it should be high in the hierarchy. There are then not many possible adjectives we can test for adjective placement, but we see below that *occasional* cannot appear below *bad*, even though *bad* is considered to be high:

(24) a. I think I'm entitled to the occasional bad day.[16]
∼ 'I think I'm entitled to occasionally having a bad day.'
b. #I think I'm entitled to the bad occasional day.

Occasional here does not affect the *be entitled* property, meaning that accord-

[15]Gehrke and McNally (2015) and Gehrke (2021) respond to the "semantically bleached" argument that this wrongfully predicts that we should see examples where the article is left out, e.g. **occasional sailor strolled by*. It is not clear how this is a logical result of Stump's (1981) comment: in the syntax, English automatically disallows this option because of its determiner requirement.

[16]TV series *The Office* (2005-2013); season 8, episode 13.

ing to the quantificational approach, it has not formed a span with SD. But even in these cases, *occasional* is higher in the adjectival hierarchy than *bad* is. This point is not a counterargument to the quantificational approach, but it nullifies the use of adjective ordering as a diagnostic for quantifierhood.

Another syntactic problem is that we *are* in fact able to separate the determiner and the FA. For example, degree intensifiers such as *very* can intervene (though perhaps marginally):

(25) And the very occasional dog gets so anxious if they are separated from their pet parent that they panic ...
∼ 'And very occasionally, a dog gets so anxious if they are separated from their pet parent that they panic.'[17]

This is a particularly strong sign that an A head *occasional* is not part of a complex determiner that is spelled out in the SD head. The only explanation for a complex quantifier analysis would be that an entire AP *(very) occasional* has formed a span with SD, but this is impossible, since spans are a relationship between *heads* in the projection, not phrases.

A second problem is that the complex quantifier approach only addresses cases where the *occasional*-type FA clearly influences the interpretation of the verbal event. It does not cover cases where the event is more obviously present in the noun phrase itself:

(26) An occasional meeting won't ruin your schedule.
∼ 'Having meetings every once in a while won't ruin your schedule.'

(27) The occasional bird-watcher handed over his binoculars.
∼ 'The person who sometimes watches birds handed over his binoculars.'

The quantificational approach cannot account for cases where it is not the VP that provides the second argument for a quantifier. Because of this, the

[17] `https://www.petmd.com/dog/behavior/4-reasons-your-dog-follows-you-everywhere`, last accessed 30 July 2024.

approach cannot provide a unified denotation of *occasional*-type FAs.

The final problem is that quantifiers and numerals are not wholly banned in sentences containing *occasional*-type FAs. Below, I repeat the sentences in (20), which were argued to be unacceptable, but with the readings that are in fact available with the expected surface scope interpretation. Imagine a scenario in which the film club did not always show movies to Antonio's taste. For example, it very rarely showed horror movies in its prime weekend slots. Still, Antonio watched every horror movie that sometimes showed up on the schedule:

(28) a. Antonio watched one/two/three occasional horror movie(s).
∼ 'When the group would sometimes meet to watch horror movies, Antonio joined them two or three times.'

b. Antonio watched every/some/many occasional horror movie(s).
∼ 'Antonio watched every/some/many horror movie(s) that he sometimes watches (e.g. specifically his favorite horror movies).'

This goes back to the previous point that the quantificational approach is so focused on the verbal event that it misses readings in which nonovert, contextual events (such as meeting or showing) are involved. This is a convincing argument that the complex quantifier that has been proposed does not actually behave like a quantifier. For all the reasons listed here, it does not seem like quantification is the correct explanation.

3.3.2 Adjectival approach

An alternative solution is to maintain the view of *occasional*-type FAs as adjectives. Usually, the proponents of the adjectival position argue that what makes *occasional*-type FAs special is that they distribute the manifestation of an entity kind (Bücking 2012; Gehrke and McNally 2015; Schäfer 2007; see

also Morzycki 2021), a detail that I will discuss further in section 3.4.[18] According to their view, *occasional*-type FAs are compositionally speaking adjectives, but they contain a distribution function that modifies a realization relation R, in the style of Carlson (1977), at an index *i*, and this distribution is low:

(29) $[\![\text{ occasional sailor }]\!] = \lambda x_k \, [\text{sailor}(x_k) \wedge \text{occasional}(x_k)]$
$\rightarrow \lambda x_k [\text{sailor}(x_k) \wedge \text{distribution}(\{x : \text{R}(x, x_k) \text{ at } i\}) = \textit{low}]$

The details of realization will be explained in section 3.4. For now, the main point is that *occasional*-type FAs are argued to directly affect the nouns next to them, and that they do not have any quantificational power.

If we follow the adjectival analysis as laid out here, we would predict that the verb is not always needed to provide a spatiotemporal dimension along which this distribution takes place. Gehrke and McNally (2015) use the following data to argue that this is the case (all from p. 839):

(30) a. The occasional sailor is 6 six feet tall.
b. After a long trek, you and your band of friends arrive at a grey-brown wasteland, a plain filled with nothing but the occasional hill, a large plateau, and a ruined castle ...

(31) a. It's in a room crowded with gauged and microscopes, along with the odd bicycle and Congo drum, on a leafy campus surrounded by Washington, D.C.'s Rock Creek Park.
b. In the middle of all this life is featureless landscape: the occasional two- or three-story apartment building, put up in the twenties, when it was thought that people in this city would wish to live in apartments; a glimpse of commerce – the odd office, barbershop, or Vietnamese strip mall; some abandoned developments.

(32) In 1959 and 1960 it was a different world than it is now. There was

[18] Though Stump (1981) argues for a quantificational analysis, it is worth noting that he also makes use of manifestation in his analysis.

> the rare female engineer, but we weren't really guided or encouraged to go into other careers.

According to Gehrke and McNally (2011, 2015), *occasional*-type FAs are different from other FAs in their independence from temporality. They label *occasional*-type FAs "nontemporal FAs", while all other FAs are "temporal", meaning that they distribute an event rather than an entity. Gehrke and McNally (2015) show that other FAs cannot combine with noneventive nouns, like in the example below (juxtaposed with the acceptability of *occasional* in (31b)):

(33) #a glimpse of commerce – the hourly/frequent/infrequent/periodic/sporadic office, barbershop, or Vietnamese strip mall ...
(Gehrke & McNally, 2015, p. 840)

Combining with eventive nouns is fine for these FAs, e.g. *weekly meeting* or *sporadic party*. Gehrke and McNally (2011, 2015) treat temporal and nontemporal FAs as essentially the same: the only difference is whether the FA selects an entity kind or an event kind.[19]

(34) $[\![\text{infrequent meeting}]\!] = \lambda e_k\ [\text{meeting}(e_k) \wedge \text{infrequent}(e_k)]$
$\rightarrow \lambda e_k[\text{meeting}(e_k) \wedge \text{distribution}(\{x : \text{R}(e, e_k) \text{ at } i\}) = \textit{low}]$

After seeing the problems with the quantificational approach, it is tempting to assume the simple answer that these FAs are *adjectives* through and through. I will show some upsides to this view, but ultimately, I urge an adjusted version of the adjectival approach. I will review the analysis of Gehrke and McNally (2011, 2015) specifically, for the main reason that they single out *occasional*-type FAs as a type separate from the rest, as an FA type that does not require temporality. Still, my main counterargument to their approach applies to Schäfer (2007) and Bücking (2012) as well.

[19] I will address the concept of "event kind" in the proposal section. See especially Gehrke (2019) and M. Landman and Morzycki (2003) for arguments for this concept.

3.3.2.1 Benefits

One positive aspect of the adjectival approach, as proposed by Gehrke and McNally (2011, 2015), is the affirmation of what should be the null hypothesis, namely that these are *adjectives* that interact with other parts of the noun phrase without being the initiator of any special or unusual mechanisms. In their view, no event is formally distributed by nontemporal FAs, but the verbal event fills in the means by which the entity is realized, through inference. If a sailor kind is realized at a low interval, and the sailors are involved in a strolling-by event, then one can assume that it was the strolling by that made the observer notice the sailors (also pointed out by Bücking 2012). Adopting the adjectival view entails compositionally reconciling the behavior of *occasional*-type FAs regardless of whether the verbal predicate is *strolling by* or *being good for you*.

This inference approach is tempting due to its simplicity, but unfortunately it cannot account for all the data, which I will show now.

3.3.2.2 Downsides

The main problem with an adjectival approach is that it leaves the connection to the verbal event completely contextual. If we follow this view, we would predict that these FAs are able to pluralize any event that is available in the discourse. But this prediction is not borne out (also pointed out by Gehrke 2021): for example, when *occasional* is found inside an embedded declarative clause, the FA cannot be associated with a verb outside that clause (*hope*):

(35) I hope [the occasional insect crawls up the stone obelisk that marks the grave of Charles Valentine Riley].[20]
$\sim$ 'I hope that an insect occasionally crawls up the stone obelisk ...'
$\not\sim$ 'I occasionally hope that an insect crawls up ...'

[20] `https://www.washingtonpost.com/local/americas-greatest-bug-expert--charles-v-riley--is-buried-in-washington/2020/04/21/6783b95e-83e7-11ea-a3eb-e9fc93160703_story.html`, last accessed 27 May 2024.

This restriction is not only found to be the case for embedded declarative clauses, but also relative clauses. When *occasional*-type FAs modify the nominal head of a relative clause, the FA is not able to reach into the relative clause and modify its main verb. It can only pluralize the main clause verb, because it does not have access to the relative clause verb from outside of it:

(36) You've probably come across the occasional barista [who tries out his cappuccino artwork on your order][21]
$\sim$ 'You've probably occasionally come across a barista who tries out his cappuccino artwork on your order'
$\not\sim$ 'You've probably come across a barista who occasionally tried out his cappuccino artwork on your order'

According to an adjectival analysis, either reading should be available, but this is not the case. Without some compositional connection between the *occasional*-type FA and the verbal event, there should be nothing forcing the barista individual to be realized specifically through the coming-across event, but this force is there nonetheless.

One final undesirable consequence of the analysis is also that *occasional* would need to be ambiguous between a temporal and a nontemporal reading. This is not a fatal problem, though it does make for a somewhat inelegant solution in which *occasional* has two separate lexical entries.

3.3.3 Taking stock

Based on the work done on *occasional*-type FAs so far, the adjectival approach is the only one that has the potential to unify the behavior of *occasional* in both the adverbial readings and the contextual event readings. However, the adjectival approach predicts that there is never a formal tie between the adjective and the verbal event, which I showed cannot be the case. The goal should now be to keep the elegant solution that these FAs are adjectives while explaining how, in a sentence like *The occasional sailor strolled by*, the sailors are instantiated specifically via strolling-by events. I

[21] `https://www.feeldesain.com/tag/coffee-art`, last accessed 28 May 2024.

will present my solution to this problem in section 3.6.

3.4 Stages

I showed in subsection 3.2.3 that sentences containing *occasional*-type FAs involve a stage interpretation. What does this mean, and how are stages formed? To find the answer to this question, we must explore the relationship between kinds and tokens.

The standard view that I will assume is that nouns are inherently "born" as kinds and that additional content must be added for the noun to refer to a particular that is anchored in the world (Borer, 2005; Carlson, 1977; Gehrke & McNally, 2011, 2015; Zamparelli, 1995, 2000). With this in mind, there are two main approaches to how this anchoring takes place. The first approach is that the verbal event, which is connected to the noun phrase via predication, is responsible for providing information about tokenization (Barker, 1999; Carlson, 1977; Kratzer, 1995). Verbal predicates that need to end up with an episodic reading inherently introduce a way to *realize* the entity, resulting in a stage. The second approach is that entity stages are formed via an element within the syntactic representation of the nominal extended projection itself. The addition of this element provides a natural extension of the internal nominal meaning (see especially Borer 2005; Zamparelli 2000). I have named these approaches the "VP approach" and the "NP[22] approach", respectively. I will now summarize these approaches and follow up with some new perspectives in an attempt to unify the two views.

3.4.1 VP approach

Much earlier work is based on the idea that it is the verb that provides the entailment that the entity participant is realized as an individual. Whether a nominal projection is interpreted as individual-denoting or stage-denoting, for example, is dependent on the kind of predicate it is thematically linked

[22]Remember that I use the term "noun phrase" as a general, neutral term, to avoid making a statement about a specific kind of determiner phrase.

to. Carlson (1977) is one of the most influential supporters of this view. He identifies three levels for entities, namely kinds, individuals and stages:

(37) a. Dogs run. KIND
b. Dogs run into my garden every morning. INDIVIDUAL
c. Dogs are running into my garden. STAGE

An entity kind is meant to describe the generality of the concept *dog*, and individuals are separated, cognitively recognizable units of such a general concept. Stages have been described in different ways in the literature, but traditionally they are seen as individuals at a certain time interval, or "temporal slices" (Krifka et al., 1995, p. 20).

Note that the subjects of all three sentences above take the form of bare plurals. Although they ultimately end up with different readings, Carlson (1977) shows that bare plurals are in fact not ambiguous between an existential and a generic reading. For example, an ambiguity analysis of bare plurals would predict that a referent and its co-referring anaphora cannot differ in this respect, but they do not show this restriction:

(38) Anya ordered *espresso martinis*$_{\exists}$ at the bar because *they*$_{GEN}$ are delicious.

(39) Although *children*$_{GEN}$ are not interested in linguistics, *they*$_{\exists}$ are often present at linguistics conferences.
(Schubert & Pelletier, 1987, p. 389)

Below are examples that show a mismatch between the generic reading and the existential reading while the two combined VPs share the same bare plural subject:

(40) a. Snakes, which [are reptiles]$_{GEN}$, [are in my garden]$_{\exists}$.
b. Snow [is white]$_{GEN}$ and [is falling throughout Alberta]$_{\exists}$.
c. Dogs [are noisy animals]$_{GEN}$ and [are barking outside right now]$_{\exists}$.
(Schubert & Pelletier, 1987, p. 389)

Considering this set of data, it looks like it is not the noun phrase itself that determines whether it has a generic or existential reading. Instead, the relevant reading is the result of the entailments that arise from the predication relation between the noun phrase and the particular event that is asserted to exist. In other words, if the instantiation of a particular eventuality depends on the existential realization of the thematically connected noun phrase, then an existential reading arises by logical entailment. For Carlson (1977), crucially, bare plurals are underspecified for the generic versus existential interpretation, not ambiguous, and the particular specification arises from the nature of its involvement with the asserted event, not directly from the nominal syntax. The underspecification of the bare plural *dogs* lets the interpretation vary depending on whether it is involved with the verbal predicate *run* or *are running*:

(41) a. Dogs run into my garden every morning.
∼ 'There exist individuals of the category *dog* such that they participate in regular, repeated events of running into my garden every morning.'

b. Dogs are running into my garden.
∼ 'There exist more than one instantiation of entities of the *dog* category, and these entities are the agents of a running event, and this event takes place once, and this event takes place simultaneously as the time of utterance.'

How do we end up with a stage reading of a sentence, in which the entity has gone from referring to a type to now existing in the world within the relevant time frame? Carlson (1977) proposes that some verbs give rise to the interpretation of instantiation as individual or stage by introducing a realization relation R. Some properties, such as "being intelligent", are constant properties of an individual, e.g. Jake, while others, such as "being sick", are temporary states that Jake can be in. Properties like "be sick" introduce the R relation, resulting in an instantiation of Jake when he is in a state of being sick:

(42) [[Jake is sick]] = ∃y [R(y,j) & sick'(y)]

The relation takes a free variable as its first argument and an entity as its second argument. This first variable is the output of the realization. Under the R relation analysis, the variable *j* (for *Jake*) and the predicate *sick* are connected because *y* is both a realization of *Jake* and it is the argument of *sick*. *Jake* is then an instantiated argument of *sick*.

Carlson (1977) describes stages as not "simply things that *are*" but actually "much more closely related to events than to objects" (p. 448). Kratzer (1995) takes this notion to the extent that stage-level predicates must take a Davidsonian (1967) event argument, while others do not. In essence, this is not too different of a view from that of Carlson (1977), and it captures the importance of events in the creation of a stage.

One final piece of work that emphasizes the role of events is Barker's (1999) ordered pair proposal (see also Doetjes and Honcoop 1997). I repeat his case example below:

(43) Four thousand ships passed through the lock last year.
∼ INDIVIDUAL READING: 'Four thousand individual ships performed the event of passing through the lock last year.'
OR:
∼ STAGE READING: 'Four thousand passing-through events took place last year, each performed by *some* nondescript ship.'
(Krifka, 1990, p. 487)

The sentence is ambiguous between an individual reading and a stage reading. Barker (1999) takes seriously the fact that when one paraphrases stage-level interpretations, the event is crucial, and he tries to capture the eventive intuition by formally combining the entity and the event in an ordered pair ⟨e,x⟩. Ordered pairs are specifically used because *4,000* behaves like a symmetrical quantifier (unlike "standard" generalized quantifiers, cf. Barwise and Cooper 1981). Doetjes and Honcoop (1997) provide careful argumentation for an ordered pair approach to these sentences, and they also tentatively suggest that these ordered pairs may be a way to represent stages.

The sentence above is ambiguous because the numeral can, at least in this setting, count *either* individuals *or* stages. Separate stages can involve the same individual but will always necessarily involve a new event:

(44) $S_1 = \langle x_1, e_1 \rangle$
$S_2 = \langle x_1, e_2 \rangle$

These pairs are stages of the individuals, and the meaning of the event is filled in by the verb but refers to specific events. Events e_1 and e_2 are unique nonoverlapping events of passing through the lock. The event supplies the set of relevant nominal stages. Barker (1999) only refers to individuals and does not concern himself with kinds.

What would the VP approach mean for our understanding of frequency adjectives? The main take-away from the VP perspective is that stages are formed from the intersection of entities and the situations they participate in. When we consider the fact that these FAs presuppose an event, and the proposal that stages are triggered by events, it might make sense to say that these FAs specifically modify *stages*. One problem with a verb-centered claim, however, is that it does not explain cases where it is clear that it is not the *verb* that supplies the event modified by the *occasional*-type FA. I repeat example (9) to illustrate this:

(45) An occasional trip into the past can rekindle fond memories.
$\sim$ 'The act of participating in these situations of taking trips into the past can rekindle fond memories.'

Occasional spreads out the stages of trips into the past, not the rekindling of fond memories. The VP approach would require that the verbal event *rekindle* triggered instantiations of the noun *trip*. But there are two issues with this: 1) The rekindling is not the means by which the trip is instantiated; 2) The sentence itself is not stage-level, but generic. The stage interpretation seems to be contained within the NP itself. This is the basis for the following alternative approach.

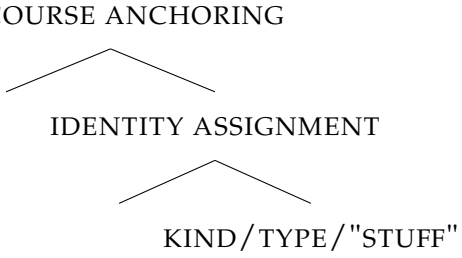
3.4.2 NP approach

A competing approach is that, within the nominal spine, there is a head that selects a kind phrase (KIP) and instantiates the entity kind. Zamparelli's (2000) version of this head contains a type-shifter that selects a kind and turns it into an "object" (i.e. an individual):

(46) ZAMPARELLI'S (2000) KIND-TO-OBJECT TYPE-SHIFTER
KO($||\text{KIP}||^{M,g,w}$) = $\lambda x^{o}(^{\cup}\mathbf{R}(x, ||\text{KIP}||^{M,g,w})]$
(Zamparelli, 2000, p. 175)

The KO operator should in principle be equivalent to Carlson's (1977) R relation. After the implementation of KO, we have a property of an individual that can be selected by a potential SD.[23] Remember that, in the introduction chapter, I presented the broad idea of a nominal projection that consists of three zones, which are tightly connected to their semantic role:

(47)



Zamparelli's (2000) KO operator would be located in the "identity assignment" zone, where it turns a kind into a referent. Remember also that this view of the noun phrase assumes that semantic content is provided by elements added to the *syntactic* projection. Do we have proof of the hierarchical distinction between a kind zone and an individual zone? McNally

[23]Those who believe in a noun phrase with only the layers NP and DP may think that this job can be performed by D, assuming the view that D attaches a reference- or uniqueness-establishing property to the entity. Others have argued that Num is the head that does it (Espinal, 2010; Farkas & de Swart, 2003; Gehrke & McNally, 2011, 2015; McNally & Boleda, 2004). Longobardi (1994) considers the positioning of grammatical number in D to show the interplay between them, in a sense also showing some support for the Num approach.

and Boleda (2004) observe that some adjectives provide properties of kinds rather than tokens. For example, while *male architect* entails that the person is male, *technical architect* does not entail that the person "is technical":

(48) *El Martí és arquitecte tècnic.*
D Martí is architect technical
'Martí is a technical architect.'
|= Martí is an architect.
#Martí is technical.
(Catalan; McNally and Boleda 2004, p. 179)

(49) Martí is a male architect.
|= Martí is an architect.
|= Martí is male.
(McNally & Boleda, 2004, p. 179)

McNally and Boleda's (2004) argue that adjectives like *technical* modify kinds, not tokens. They do not address the three-layer approach, but McNally (2017) shows how it would work, for *legal adviser* versus *clever adviser*, and finally the two of them combined:

(50) a. adviser: λx_k [adviser(x_k)]
b. legal: $\lambda P_k \lambda x_k$ [$P_k(x_k) \wedge$ legal(x_k)]
c. [$_{KIP}$ legal adviser]: λx_k [adviser(x_k) $\wedge$ legal(x_k)]
d. KO': $\lambda P_k \lambda x_o$ [R(x_o,x_k) $\wedge$ $P_k(y_{k_i})$] KO'([$_{KIP}$ legal adviser]):
λx_o [R(x_o,x_k) $\wedge$ adviser$_k$(y_{k_i}) $\wedge$ legal(x_k)(y_{k_i})]
= λx_o [R(x_o,y_{k_i}) $\wedge$ adviser$_k$(y_{k_i}) $\wedge$ legal(y_{k_i})]
e. clever: $\lambda P_o \lambda x_o$ [$P_o(x_o) \wedge$ clever(x_o)]
f. clever legal adviser:
λx_o [R(x_o,y_{k_i}) $\wedge$ adviser(y_{k_i}) $\wedge$ legal(y_{k_i}) $\wedge$ clever(x_o)]
(McNally, 2017, p. 44)

Legal and *clever* thus modify different elements, and they attach at different heights in the nominal projection. This analysis correctly predicts that *clever* must linearly come before *legal*, since *legal* is structurally closer to the noun:

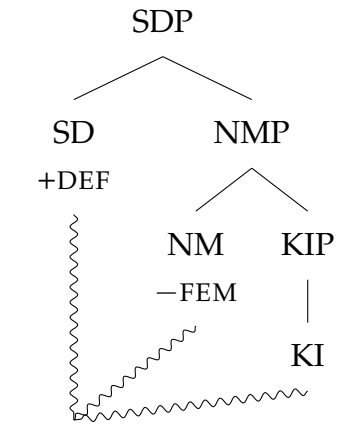
(51) a. a clever legal adviser
b. *a legal clever adviser

In the noun phrase *a clever legal adviser*, *legal* is added in the kind zone and thus creates a subkind from *adviser*. *Clever* ascribes a property to an instantiated "legal adviser". The fact that interpretation differs depending on the level of attachment may speak in favor of an analysis in which the transition from kind to token does take place within the noun phrase structure.

I depart from Zamparelli's (2000) specific analysis in that I believe that the work done by PD in his framework is actually done by a Noun Marker (NM) head, the concept of which I introduced in subsection 2.2.2.4. I have shown that NM is a noun-categorizing head, comparable to *n* in DM, which can carry noun-related features such as gender and atomicity. Some readers may consider this a trivial labeling issue, but from my perspective, with the specific problems approached in this thesis, it makes more sense to unify PD and NM. When we consider the traits of NM, this becomes a natural consequence. We have seen that NM 1) is located right above KIP; 2) gives the noun its identity and reference; 3) contains features that are required for agreement, some of which are semantically interpretable. The fact that it can even in some cases carry atomicity information, which I showed is the case in Chapter 2, makes it an even more attractive option. From now on, I will work under the following assumption: according to the "NP approach" to stage formation, stages are the result of the use of NM.

Using NM instead of PD predicts that individuation can never be avoided in the process of building an SDP, which makes it different from Zamparelli's (2000) modular view of PD and SD. An NM requirement in the SDP was my implicit argument in Chapter 2, as well, though I did not address PD or individuation. Remember that KIP can stand alone as a noun phrase, in the case of bare singular nouns in Norwegian. If more structure is needed, like a determiner, the noun categorizer must be added immediately above KIP to provide the featural content that other elements needs to agree with. Below is an example from Chapter 2 showing the structure behind the Norwegian noun phrase *appelsinen* 'the orange':

(52)



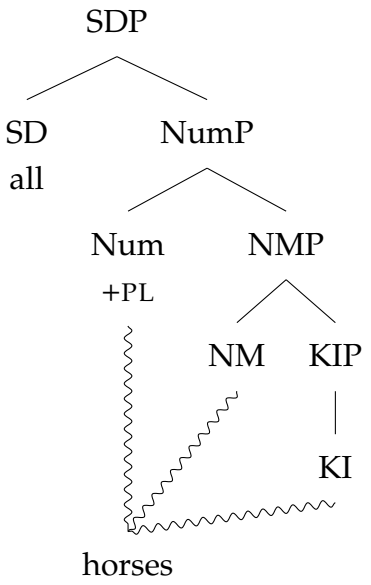
appelsinen
'the orange'

Simply put, NM serves as the noun's gateway from concept to syntax. In Zamparelli's (2000) view, SDP and PDP do not depend on each other, and KIP allows any combination of the two of them. However, the presence of NM in SDPs is suggested by the fact that, in Norwegian, grammatical gender must be exponed in SDPs:

(53) *alle snille gutar, alle snille jenter*
all kind.MASC.PL boy.PL.MASC all kind.FEM.PL girl.PL.FEM
'all kind boys, all kind girls'

If realization takes place in NM, however, realization must always take place when an SDP is formed, since NM is a necessary part of syntactic word formation. The necessity for individuation in SDPs implies that a strong quantifier can never head a noun phrase without NM also being in the structure. In an example like the noun phrase *all horses*, I would therefore predict that the horse kind has been realized:

(54)



Intuitively, we can gather that, for *all* to select the set of horses in the world, the horses need to be a plurality of atomic particulars and exist in the world. We again see that NM must be immediately next to KIP so that the noun can be realized before it is made plural by Num. It is then not unreasonable to identify the kind-to-object PD head in Zamparelli (2000) with the NM, which I argued in Chapter 2 contributes defining and identifying syntactic features to KIP. With my point of view, we can depart from Zamparelli's (2000) modular approach to the noun phrase layers.

Since NM takes over PD's job, NM now has both a syntactic and a semantic role, the two of which are related. Syntactically, it introduces features that may or may not be interpretable, but these features form part of the noun's lexical entry. Semantically, it provides the criteria of identity for the noun and in that way realizes the noun as an individual. Separating what I believe to be one role into two different heads seems excessive, and it feels more natural to unite them under one head with the essential role of providing an identity for the kind. To summarize, the formation of an individual is a natural part of categorizing a noun to prepare it for interaction with larger syntax. Moving forward, my reshaping of the role of NM has the outcome that there is no separate PD with a KO function – when

we see an SDP, the functional heads in the sequence are SD, NM and KI, with NM taking over the semantic function of effecting the transition from type-to-token denotation.

I will now return to the discussion of whether a noun phrase approach to stage formation is the optimal one. In speaking of transformations from kind to object, or type to token, we flatten out the distinction between individuals and stages, which are both instantiations of the kind in some sense, although only stages are spatiotemporally circumscribed. How then is the distinction between object particular and stage to be represented in a nominal approach? Is it the case that the process of individuating an entity is the same as providing a spatiotemporal domain in which an individual can exist or perform an action? I argue that this cannot be the case.

An NP approach to stage formation could help us explain why *occasional*, *odd* and *rare* show up as adjectives rather than as their adverbial equivalents. As these FAs modify stages, it would make an elegant solution to keep stages within the noun phrase and immediately available to the FA. This would further support the adjectival approach as well (Bücking, 2012; Gehrke & McNally, 2011, 2015; Schäfer, 2007), some version of which I think would be correct. There are however some unresolved issues. If stages were formed by the same process as NM's manifestation of the kind, then the individual would matter more for the interpretation of these sentences. As we saw in subsection 3.2.3, *occasional*-type FAs specifically need stages and are not satisfied with "just" an individual. I repeat examples (17) and (16) below: in the former, we are referring to one unique, identifiable glass of wine, but it is the drinking event that takes place occasionally; in the latter, we are clearly referring to several cases of events involving a seagull.

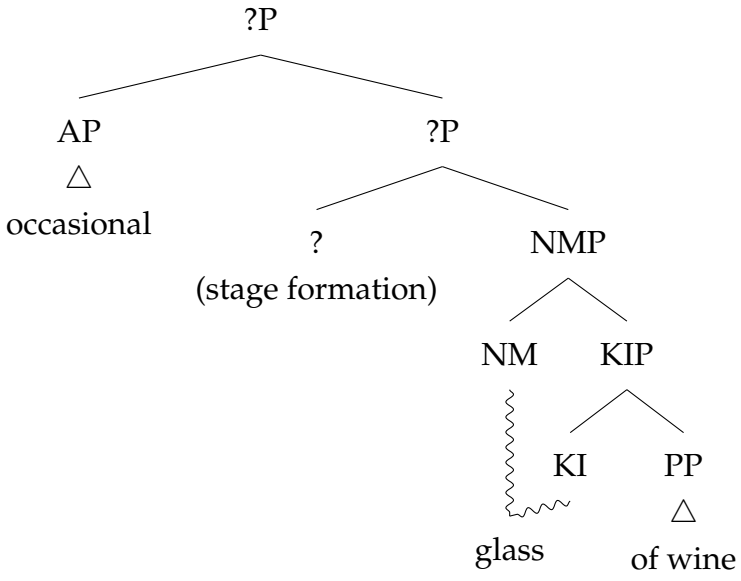
(55) Mara's occasional glass of wine spilled all over the table.
→ one particular glass of wine (in a series of few, single glasses of wine drunk by Mara, along a certain timespan)

(56) The occasional seagull flew past the window squawking, but otherwise my silence was not disturbed.
→ few flying-past-the-window events, each involving a seagull

In the first sentence, if *occasional* had counted individuals, we would expect there to be more than one glass of wine spilling, but the role of *occasional* is instead to express how often Mara participates in an event of drinking a glass of wine. With regard to the second sentence, if *occasional* had only referred to a low number of individual seagulls, speakers should only be satisfied with the sentence if there were more than one seagull, but since it *is* acceptable with only one seagull performing all the flying-past-the-window events, it cannot be the case that only NM is providing the stage that is counted by the FA.

Since it is not the *individual* that is counted by *occasional*-type FAs, there needs to be a separate mechanism by which stages are formed. We can then say that in both noun phrases containing *occasional*-type FAs above, a stage-forming head is present. We can imagine that *occasional* is above the stage-forming head, which in turn is above NM. Below is a simple, temporary illustration of the hierarchy. I have labeled the stage-forming phrase ?P, but this phrase's nature will be determined in the next section:

(57)



With *occasional* as a modifier of the stage-forming phrase, it is able to modify the *stages* of the individual(s), rather than the individual(s) themselves. The one glass of wine that spilled has been individuated, but *occasional* modifies

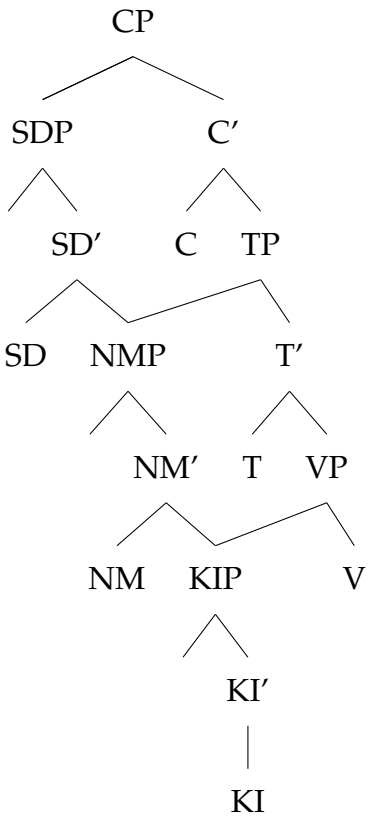
something else. It therefore makes more sense to view stage formation as an operation that is separate from individuation.

3.4.3 Uniting the VP and NP: a multidominant perspective

I argue that the event-based view of the "VP approach" and the nominal focus of the "NP approach" can be unified if we accept a syntactic system in which the nominal and the verbal spines mirror each other and unite at each level of the projection. For the mechanics of this argument, I will make use of a multidominance approach to syntactic hierarchy (see de Vries 2013; Sportiche 2005).

The general idea is that the three main layers of the nominal projection, i.e. KIP, NMP and SDP, have direct equivalents in the verbal projection. We can see the VP as the birthplace of an event, equivalent to KIP in the nominal domain. The event kind could then be converted to properties of event particulars by Asp or T (Carlson, 2003; Gehrke, 2015), which serves to form a situation (see Ramchand and Svenonius 2014 for the layout of the C, T and V zones). Situations are defined as elaborations of eventualities that have time and world parameters as well as topics (J. Austin, 1950; Giorgi & Pianesi, 1997; Kratzer, 2008; Lewis, 1986). This is comparable to individuals, in that situations can be seen as the concretization of an event, or the placement of an event in the world, giving us reason to think that T is compositionally connected to. Finally, the equivalent of SDP would be CP, as a layer through which the situation becomes referentially and discoursally anchored. Below is a tree illustration showing the connections:

(58)



The multidominance view that I follow shows the relationships between the parts of the nominal projection that provide kinds, individuation and conversational anchoring to their verbal equivalents. KIP is in the specifier position of V (or *v*/Voice), and this is where KIP is assigned a argument role ("theta role"). NMP is the specifier of T: at this level, the noun is realized simultaneously with the verb being given an identity. Finally, the SDP and CP levels are connected in that, at the uppermost projection, both the noun phrase and the verb phrase are linked to the discourse.

I will now go into more detail to justify especially the connection between VP/*v*P and KIP.

3.4.3.1 Event kinds

The first step is to show that the VP, i.e. the lowest level in the verbal projection, denotes an event kind at all, or that there is such a thing as an "event

kind" to begin with. There is in fact a promising line of research that suggests that events also have a kind-token distinction. The hierarchy shows parallels with Zamparelli's (2000) nominal framework: events start out as kinds, and more structure is added to turn the event kind into a token. A variety of phenomena have been considered to argue that events start out as kinds: incorporation and weak referentiality (Carlson, 2003), pseudo-incorporation (Dayal, 2011; Espinal & McNally, 2011; Schwarz, 2014; van Geenhoven, 2005), weak indefinites (Carlson, 2003; Schwarz, 2014), kind anaphora and manner modification (Anderson & Morzycki, 2015; M. Landman, 2006; M. Landman & Morzycki, 2003), adjectival passives (Gehrke, 2015), factual imperfectives (Grønn, 2004; Mehlig, 2001; Mueller-Reichau, 2013, 2015), as well as FAs (Gehrke & McNally, 2011, 2015).[24] I will now present the data relating to manner modification pseudo-incorporation and weak definites.

M. Landman and Morzycki (2003) show data from Indo-European that supports the existence of event kinds. They point out that, in several languages, the word for 'such' can be used either as a manner adverb in the verbal domain, or as a kind-expressing determiner in the nominal domain. In both cases, its use results in a token reading. M. Landman and Morzycki (2003) consider the Polish and Russian word *tak*, *so* in German and *zo* in Dutch. In both the manner adverbial case and the adnominal case, the word selects for a kind and transforms it into a token.

(59) TAK, SO AND ZO AS MANNER ADVERBS

a. *On tańczył tak.*
he danced thus
'He danced like that.' (Polish)

b. *On tantseval tak.*
he danced thus
'He danced like that.' (Russian)

c. *Er hat so getanzt.*
he has thus danced

[24]See Gehrke (2019) for an overview of these phenomena and how they feed into an event kind argument.

'He danced like that.' (German)

d. *Hij danst zo.*
he dances thus
'He dances like that.'
(M. Landman & Morzycki, 2003, pp. 1-2) (Dutch)

(60) TAK, SO AND ZO AS ADNOMINAL MODIFIERS

a. *Taki pies uciekł wczoraj w nocy.*
such.MASC.SG.NOM dog.NOM ran.away yesterday in night
'Such a dog ran away last night.' (Polish)

b. *Takuju sobaku my videli.*
such.MASC.SG.ACC dog.SG.ACC we saw
'We saw such a dog.' (Russian)

c. *Wir haben so einen Hund gesehen.*
we have such a dog seen
'We saw such a dog.' (German)

d. *Ik zou zo 'n hond willen hebben.*
I would such a dog want have.INF
'I would like to have such a dog.' (Dutch)
(M. Landman & Morzycki, 2003, p. 2)

The denotations for the adverbial and the adnominal uses only differ in whether the word selects an entity or an event argument:

(61) a. [[taki/so/zo$_i$]] = λx . x realizes k$_i$ 'SUCH', ADNOMINAL
b. [[tak/so/zo$_i$]] = λe . e realizes k$_i$ 'SUCH', ADVERBIAL

The fact that there is overlap between token-expressing words ('such') and manner adverbs forms a compelling argument for the existence of event kinds.

Pseudo-incorporation has also been used to support this argument (Dayal, 2011; Espinal & McNally, 2011; Schwarz, 2014; van Geenhoven, 2005). As opposed to standard incorporation, pseudo-incorporation is semantic in nature rather than syntactic. In the Hungarian example in (63), the internal argument *bélyeget* 'stamp' is more morphosyntactically reduced than the fully-fledged noun phrase that we would expect, like we see in (62):

(62) *A gyerekek néztek egy filmet.*
the child.PL watch.PAST.PL a movie.ACC
'The children were watching a movie.'
(Hungarian; Farkas and de Swart 2003, p. 13)

(63) *Mari bélyeget gyüjt.*
Mari stamp.ACC collect
'Mari collects stamps.'
(Hungarian; Farkas and de Swart 2003, p. 13)

Norwegian exhibits comparable data. When the internal argument is in the bare singular form, it denotes a type, and when there is more structure present, the argument has referential status. I here repeat an example from subsection 2.4.1.4:

(64) a. *Bente leiter etter kjærast.*
Bente look.PRES after romantic.partner
'Bente is looking for someone who wishes to be her romantic partner.'

b. *Bente leiter etter ein kjærast.*
Bente look.PRES after a romantic.partner
'Bente is looking for someone who is in a romantic relationship (likely with someone other than her).'
(Norwegian)

Borthen (2003) observes that, in the case of Norwegian, the V-N combinations refer to "conventional situation types", meaning that the verb phrase refers to a "property, state, or activity that occurs frequently or standardly in a given contextual frame (e.g. in the macro social frame) and has particular importance or relevance in this frame as a recurring property-, state-, or activity type" (p. 319). For this reason, it is easier to use a verb-noun combination like *kasta tomat* 'throw tomato' than *kasta skål* 'throw bowl', shown in example (65). This contrast does not exist when the object is an indefinite noun phrase, shown in both the singular and the plural forms in (66):

(65) *Har du kasta tomat / #skål før?*
have you thrown tomato / bowl before
'Have you ever thrown a tomato/#bowl?'
(Norwegian)

(66) a. *Har du kasta ein tomat / ei skål før?*
have you thrown a.MASC tomato / a.FEM bowl before
'Have you ever thrown a tomato/bowl?'

b. *Har du kasta tomatar / skåler før?*
have you thrown tomatoes / bowls before
'Have you thrown tomatoes/bowls before?'
(Norwegian)

Espinal and McNally (2011) argue that bare nouns in Catalan and Spanish modify verbs, rather than being their arguments. Below is an example of a bare noun in Catalan:

(67) *Busco pis.*
look.for.1SG apartment
'I'm looking for an apartment.' (i.e., I am apartment-hunting.)
(Catalan; Espinal and McNally 2011, p. 88)

These bare singular nouns have a number of traits that suggest that they are not "regular" noun phrases, such as their (general) inability to serve as antecedents for personal pronouns (69), or their unacceptability in token-modifying non-restrictive relative clauses (68):

(68) a. **Per fi hem trobat pis, que començarem a*
for final have.1SG found apartment that begin.FUT.1PL to
reformar molt aviat.
renovate very soon

b. *Per fi hem trobat un pis, que començarem a*
for final have.1SG found an apartment that begin.FUT.1PL to
reformar molt aviat.
renovate very soon
'At last we have found an apartment, which we'll begin to renovate very soon.'

c. *Per fi hem trobat pisos, que començarem a*
for final have.1SG found apartments that begin.FUT.1PL to
reformar molt aviat.
renovate very soon
'At last we have found apartments, which we'll begin to renovate very soon.'
(Catalan; Espinal and McNally 2011, p. 96)

(69) a. *Avui porta faldilla. #La hi vam regalar*
today wear.3SG skirt it.ACC her.DAT PAST.1PL give.present
l'any passat.
the.year last
'Today she is wearing a skirt. We gave it to her as a present last year.'

b. *Avui porta una faldilla. La hi vam*
today wear.3SG a skirt it.ACC her.DAT PAST.1PL
regalar l'any passat.
give.present the.year last
'Today she is wearing a skirt. We gave it to her as a present last year.'

c. *Avui porta bracelets. Els hi vam*
today wear.3SG bracelets them.ACC her.DAT PAST.1PL
regalar l'any passat.
give.present the.year last
'Today she is wearing bracelets. We gave them to her as a present last year.'
(Catalan; Espinal and McNally 2011, p. 94–95)

These facts, among others, support Espinal and McNally (2011) argument that the V+N sequences we see in these constructions are complex predicates describing the subject.

Lastly, weak definites are used by especially Schwarz (2014) to argue for event kinds. In the sentence below, *the doctor* surprisingly does not refer to one unique doctor: John and Mary may have gone to different doctors.

(70) John and Mary went to see the doctor.
(John went to a doctor named Larry; Mary went to a doctor named

Wendy)

Schwarz (2014) argues that in these cases, the verb refers to an event kind of seeing (in this case meaning *consulting*). Below is the resulting denotation for the kind-level event *read*:

(71) [[read_{kind}]] =
$\lambda P \lambda s$. ι*{e | read(e) & $\exists$x [P(x)(e) & Theme(e) = x] & e $\leq$ s}
(Schwarz, 2014, p. 224)

The kind interpretation of *read* matches that of the argument noun phrase, and in (70), it is now the entire verb-noun phrase combination that refers to the kind of thing that is a *seeing the doctor* event. From now on, I will assume that events have a kind layer, that this kind layer is the lowest portion of the extended verbal projection and that events are born as kinds in VP.

3.4.3.2 A multidominance, split-phrase perspective of NP and VP structure

I believe the data presented above supports my proposal that the nominal and verbal phrases do not only combine via the root of their extended projections, but interweave, with smaller nominal phrases combining lower down in the verbal spine, and larger extensions of those same nominal phrases attaching higher. This creates a multidominance tree, as found in Sportiche (2005), Svenonius (2005) and Citko (2011). Using this attachment style, noun phrases can provide a simple property of entities and compose as required and expected with the verbal thematic spine, while the larger coerced nominal denotation is adjoined to the verbal spine. This means that we are departing from the "nesting" view of set membership that is necessary for Merge and Move (see Chomsky 1999, 2001), in which a set can only be immediately dominated by one other set.

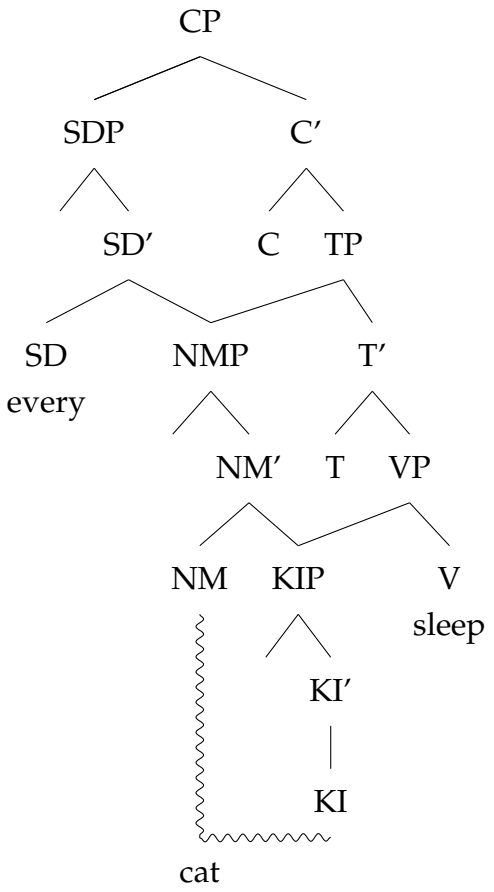
One major motivation for a multidominance approach to our problem is reconstruction. Sportiche (2005) considers the interaction between A-movement dependencies and predicate argument structure and shows how predicate argument structure seems largely blind to movement. Making the

standard assumption that arguments are established before movement, we can view reconstruction as just an interpretation of copies, with no other mechanism involved. If there is no relevant reconstruction, there is no relevant movement. This aids Sportiche's (2005) proposal that: 1) arguments of predicates are KIPs, not NMPs or SDPs (using Zamparelli's (2000) terms); 2) NMPs or SDPs are not underlyingly constituents, but rather derived constituents.

Because "theta role" assignment, or argument selection, takes place down at the KIP level, quantifiers are no longer part of the constituent that is the argument of the verb at the lowest level. Quantificational determiners take scope over the fully formed thematic set-up established by the KIP and VP. In a sentence like *Every cat slept*, *every* selects the whole proposition [cat sleep]. Below is the kind of structure that Sportiche (2005) argues for:

(72) a. Every cat slept.

b.



One consequence of this view of quantifiers is that it creates a close parallel between quantificational determiners and quantificational adverbs (Lewis, 1975; van Geenhoven, 2005), since they both end up selecting a proposition. The main difference between the two would then be their ranging domains or restrictions: events or situations for adverbs, and entities for determiners.

This version of multidominance can neatly explain event kinds. In the case of weak definites, the relevant reading comes from the KIP being selected by V before additional structure has been added to the noun phrase. The definite determiner then does not interfere with the kind reading of the V-N sequence. As for bare singulars, which I argued in Chapter 2 only consist of KIP, we gain the benefit that KIP is *only* attached to V, which explains why bare singulars are not restricted by T and C. Once T connects with an NM, individuation takes place, and we know that the entities in

bare singular noun phrases do not denote individuals. I welcome future investigations into whether the multidominance model can explain other data that has been used to argue for event kinds.

I initially started this section with a discussion of whether a VP *or* an NP approach made the most sense for explaining stage formation, but I have now established that the functional sequences for nouns and verbs are matched or related to each other in parallel. This relieves us of the question of whether the verb *or* the noun introduces the instantiation of kinds – instead, the source of the realization may be systematic licensing relations linking the two. For my purposes, I believe multidominance to be the simplest way to represent how the heads in the nominal projection connect at multiple points in parallel with those in the verbal projection, but I do not outright dismiss the possibility that other frameworks can explain the curiosity of the data presented in this chapter.

3.4.4 Taking stock

The two approaches summarized here have different focuses, and both of them have notable benefits. The VP approach emphasizes the strong intuition that stages are intrinsically associated with events. However, the data relating to *occasional*-type FAs shows that stages cannot depend on the *verb*. The ideal way to explain stages may instead be to involve another kind of event. The NP approach is appealing, but something other than NM needs to be the catalyst for stage formation.

With the new assumption that KIP, NMP and SDP each attach to the verbal spine at different levels, we can continue to investigate where *stages* are formed within this system. Since stages are not formed by NM, the question is what is located in the nominal structure such that the noun phrase denotes a slice of spacetime through which an entity can be observed, and through which new information can be gathered about the entity. In the following, I will argue that what we call a "stage" interpretation is the outcome of the insertion of a (nonovert) eventive element in the noun phrase structure. This head/operator selects an individual entity and provides a

way for it to be inserted in time and space.

3.5 Introducing vehicle events

I will show that most problems raised in sections 3.3 and 3.4 can be solved if we accept the possibility of adding a nonovert, contextually-determined event to the nominal structure. I will also show that such an event is what a "stage" essentially is. Individuals are instantiated and identified in such a way that a person can keep a mental representation of them, regardless of the entity's involvement with an event. Stages, on the other hand, are the situation that they are involved in at a point in time. To imagine a non-linguistic, perhaps more philosophical perspective: if I think of my friend Mara, without being in her proximity, I do not need to associate her with any event she has been involved in. Mara is realized as a unique individual with her own identity criteria. When observing Mara while she is dancing, however, I am observing only a slice of Mara's existence. Mara as an individual is constant, and Mara as a stage is directly observable.

Our knowledge of the world is mediated by our observation of it. To be able to observe an entity, there needs to be a situation for the entity to participate in. Based on these observations, we make assumptions of identity criteria and persistence through time.[25] Crucially, these situations that we observe are the ones that give us evidence for the existence of the entities we assume, and for this reason I will call them "vehicle events", since they are the concrete particulars through which entities are manifested.

I will propose a null coercion operator that systematically converts a property of individuals into a property of vehicle events for that individual. Adding the vehicle event to the discussion helps explain the problems encountered with regard to the nature of *occasional*-type FAs and with regard to stage formation: 1) *Occasional*-type FAs live up to the basic intuition that they modify the distribution of events; 2) Stages are formed via events, but

[25]See Geach (1962), Gupta (1980) and M. C. Baker (2003) for more about identity criteria as a feature of nouns.

these are not *verbal* events. This makes it possible to unite the VP approach and the NP approach.

What grounds do we have for positing an *event* as this vehicle, rather than a head in the extended nominal projection, similar to NM? The first, perhaps obvious response is that, as far as I know, there is no empirical evidence in natural language for a overt nominal morphology whose presence results in a stage reading. There is evidence for a distinction between kinds and individuals, but not another potential determiner that can be added to the noun phrase system. This is a strong indicator that stages are not simply an alteration of the interpretation of an *entity*, but rather something outside of the basic inventory of nominal syntax and semantics.

The empirical focus here will be on *occasional*-type FAs. It is easy to imagine a nonovert event in a sentence like the following. The throwing event in the paraphrase is taken from context:

(73) You shouldn't throw things at people, but for certain politicians *the odd tomato would be justifiable*.
$\sim$ '... throwing tomatoes at certain politicians every now and then would be justifiable.'

These noun phrases are often paraphrased using an *ing*-clause or an infinitive clause, which is a subtle signal that a nonovert event is inferred. As a context-dependent event with no fixed semantic meaning, it seems that the event just provides *some* salient situation through which the entity is manifested.

There are sentences where it may seem less intuitive that there is a nonovert event present, especially those that seem more "adverbial". One simple story for examples like *The occasional sailor strolled by* has been that *occasional* behaves like its adverbial equivalent *occasionally* and only modifies the frequency of the strolling-by event, which is only later identified with the event property denoted by the VP. However, I will show that these sentences are not counterexamples, and that even in these cases, *occasional* directly modifies a noun phrase-internal vehicle event. The meaning of the vehicle event is more elusive in these cases, which has made it difficult

to identify or integrate well into an analysis (but Stump 1981 takes it seriously).

One reason that *occasional*-type FAs can be said to modify the vehicle event rather than just the VP is that, while a frequency adverb affects the temporal nonoverlap of verbal events, FAs do not directly do so. Compare *occasionally* and *occasional* in the sentence below. The use of *occasionally* implies that the seeds had sprouted at different times, with a contextually large amount of time in between each sprouting event. When *occasional* is used, the seeds may well have sprouted simultaneously:

(74) She went through her dad's massive vegetable garden. *Occasionally, a seed had sprouted*, but the rest of them were somewhat disappointing.
→ seeds sprouted at different times leading up to the time of utterance, with a large amount of time between the seeds sprouting
→ not specified how the seeds were inspected

(75) She went through her dad's massive vegetable garden. *The occasional seed had sprouted*, but the rest of them were somewhat disappointing.
→ not specified whether the sprouting overlapped, but there is a large distance between each sprouted seed
→ infrequent finding of sprouted seeds upon inspection

Instead of modifying the sprouting events, *occasional* expresses how often the speaker finds a seed that has sprouted. The observing aspect of the meaning is crucial. We also see this in copular sentences:

(76) An occasional sailor is over six feet tall.

The sentence is not just a neutral statement about the number of sailors that have the property of being over six feet tall. An obligatory part of the meaning of the sentence is pragmatic: the over-six-feet-tall property of these sailors is determined by an implicitly determined *observer* of these sailors. The sentence is only true if there were sailors being checked or seen, one

by one, and every now and then a sailor turned out to be six feet tall. This inference can exist when the subject is, for example, *some sailors*, but the difference is that when *occasional* is used in these settings, the observation of the entities *must be* one of the truth conditions.

Now assuming the existence of Vehicle, we can investigate how it works. I will go through two options before proposing a solution that I believe is simpler and more applicable to the data.

3.5.1 Survey event

Stump (1981) presents two "survey" functions to explain this "metaphorical" temporality (p. 230). The survey of a property is a function from entities to time intervals, extending an entity property P at an instant i to the instants k or some arbitrary interval K such that $\cup k_n = K$. The Survey function is applied to the entity. In addition to the Survey function, Stump (1981) presents a Sub (subsurvey) function, which connects the domain of s to the extension of an event property Q. Schäfer (2007) provides some neat definitions of the functions:

(77) a. λs . Survey'(^P)(i)(s) is the set of surveys s of the property P at an instant i, a survey being a total function from the extension of P at i to the instants k of some arbitrary interval K such that $\cup$ k_n = K.

b. λx . Sub(s,^Q)(x) defines a sub-function of s from an individual x from the intersection of the domain of s with the extension of Q to some instant from a subset of the range of s.
(Schäfer, 2007, p. 6)

Using *An occasional sailor is over six feet tall* as an example, Survey selects *sailor* as its P, and Sub selects *over six feet tall* as its Q. The total set of surveys s establishes that there is a relevant time interval in which an entity and an event are in the domain of s.

While Stump's (1981) survey functions are a step in the right direction, his analysis has the problem that it would be uneconomical for a function

to exist whose only purpose is to provide a discoursal image of surveying; it would in principle imply that for each such implicit meaning, there needs to be a separate function. Instead of having an overflow of such similar functions, it would then be preferable to have an element that is semantically more abstract, or more underspecified, and whose content is filled in through context.

A perhaps larger problem is temporality. The purpose of the survey functions is in part to provide temporality in cases where there is no element to overtly provide it. In the case of sailors being over six feet tall, there is no overt temporality, so the survey functions express that there is a temporal splitting-up of (surveying) events. However, there are cases where the verbal events overlap in time *and* the observation of the entities. The sentence below can be produced in a context where one is looking up at the night sky, and *occasional* here expresses that there is a low number of stars in the sky:

(78) There was the occasional star in the night sky.

Since all the stars are visible to the observer simultaneously, it cannot be the case that the "surveying" situations are separated in time. We need an account of sparseness that is more abstract and can be interpreted situationally in the temporal *and/or spatial* domain.

So, although there is potential to the claim that a nonovert element can be added to facilitate the "special", observational element of many of these sentences, two details need to be adjusted: 1) These nonovert events cannot be restricted to only temporal separation; 2) These events need to always be present when *occasional*-type FAs are used, not just in cases where the verbal event does not provide a temporal dimension (like in the case of states).

3.5.2 Events with experiencers

One possibility that has been suggested for similar data is that there is a (contextually-derived) nonovert event in the noun phrase structure which takes the nominal entity (e.g., a cup of coffee) as its theme argument. The

eventive reading ultimately emerges when it also has an *experiencer* argument (à la Bylinina 2017). Martin et al. (2020) propose this solution for so-called "pancake sentences" (see also especially Enger 2004, 2013; Faarlund 1977; Josefsson 2014; Wechsler 2013). Consider the examples from French and Brazilian Portuguese below. The sentences display an apparent adjective agreement mismatch in that, although the subjects *enfants* and *crianças* 'children' are in the plural number, the predicative adjective is in the singular masculine form:

(79) *Les / des enfants, c'est chouette.*
the.PL / PA.PL child.PL.MASC DEM=be.3SG.PRES fun.SG.MASC
'Doing something with children (having them, playing with them, raising them, and so on) is cool/fun.'
(French; Martin et al. 2020, p. 2)

(80) *Crianças é divertido.*
child.PL.FEM be.3SG.PRES fun.SG.MASC
'Doing something with children (having them, playing with them, raising them, and so on) is cool/fun.'
(Brazilian Portuguese; Martin et al. 2020, p. 2)

Pancake sentences are relevant because their subjects also intuitively include a nonovert event (as indicated by the gloss).[26] Martin et al. (2020) argue that the relevant reading is the result of two things: 1) a nonovert event in the noun phrase structure; 2) an experiencer argument introduced by the predicative adjective. Their observation is that the adjectives in these sentences can only be evaluative experiencer adjectives: for example, *surprising*, *fascinating* and *depressing* work but not objective adjectives like *green* or non-experiencer evaluative adjectives like *lazy*, *faithful* or *smart*. The event being experienced is introduced via a "pancake operator" $\circledast$ to sentences like the two above. The operator provides a relation between a property N of entities, a property P of events and entities x and y:

[26]This generalization is not accurate for all pancake sentences in all languages. I will investigate this in the following chapter.

(81) MARTIN ET AL.'S (2020) GENERIC PANCAKE OPERATOR

a. $\circledast$ = λNλyλPλxλe [N(x) & theme(e,x) & agent(e,y)]

b. [[les étudiants $\circledast$]] = λyλPλxλe [students(x) & theme(e,x) & agent(e,y)]
(Martin et al., 2020, p. 17)

The result is a simple one: what overtly only takes the form of a noun phrase now refers to an event for which the nominal entity is the theme and the agent of which is not specified.

Experiencer adjectives such as *intéressant* 'interesting' can be applied to events and project an experiencer, here assumed to be **pro**.

(82) [[intéressant $_{2d-ord}$ **pro**$_5$]]^{c,g,w,t,Sp} =

a. defined iff Sp = g(5) (judge = experiencer)

b. λPλe [P(e) & experiencer(e,g(5)) & interesting(λe,P(e')) for *Sp* at *t* in *w*
(*Sp* = speaker)
(Martin et al., 2020, p. 20)

An experiencer adjective thus becomes crucial for the nonovert event in pancake subjects because it provides its agent.

There is however reason to doubt that experiencing is needed to activate the relevant reading, both in the case of pancake sentences and for sentences containing *occasional*-type FAs. I will address the pancake sentence phenomenon in Chapter 4, and for now I will focus on the data involving *occasional*-type FAs. We see that there is no experiencer adjective requirement for this data:

(83) The school I go to is so strict about smoking. *Even the occasional cigarette is disallowed*.
$\sim$ 'Even just occasionally smoking a cigarette is disallowed.'

One reason to steer away from experiencers, in the context of evaluative adjectives, is that sentences involving *occasional*-type FAs do not need a pred-

icative adjective at all, and they still end up with an eventive reading of the noun phrase. If the event had depended on an experiencer adjective, we would predict sentences like *The occasional sailor strolled by* to be unacceptable, but they sound perfectly natural.

The concept of speaker experience as the basis for stage formation is in some way appealing. Like the survey operators of Stump (1981), experiencing can be used as a way to express the personal observing that I have argued is the event being modified by *occasional*-type FAs. However, it is unclear what we gain from making the "experiencing" external to the nonovert event itself. Such a proposal has the unfortunate consequence that it makes the final reading of nonovert, noun phrase-internal events dependent on a provider of an experiencer. Since these readings are acceptable without experiencer adjectives, or predicative adjectives at all, it is more likely that the feeling of observation is part of the event itself. I will now explore a venue that I believe to be more promising, namely one in which Vehicle is viewed as a (semantically underspecified) type-shifter that can be added to an entity to make it denote an event.

3.5.3 Solution: coercive vehicle events

First, I will repeat some first principles. I showed in subsection 3.2.1 that sometimes *occasional*-type FAs are found to modify entities that visibly or invisibly contain an event. By this I mean that there is little to no uncertainty about what the meaning of the event is. I repeat examples (9) and (10) below:

(84) An occasional trip into the past can rekindle fond memories.
$\sim$ 'The act of participating in these situations of taking trips into the past can rekindle fond memories.'

(85) Alain is an occasional bird-watcher.
$\sim$ 'Alain sometimes watches birds.'

Trip clearly refers to the event of taking a trip, and *bird-watcher* clearly refers to someone who watches birds. When a noun denotes an entity, however,

there is an intuition that something is added behind the scenes to provide an event. The exact meaning of this event is left vague and must be derived from context. Example (73) showed this:

(86) You shouldn't throw things at people, but for certain politicians *the odd tomato would be justifiable*.
∼ '... throwing tomatoes at certain politicians every now and then would be justifiable.'

In order to pinpoint the meaning of a noun phrase like *the odd tomato* here, we need to consider the three main ingredients: the entity (*tomato*), the FA (*odd*) and, importantly, the element that makes us able to interpret *tomato* as if it were an eventive noun like *trip*, *party* or *meeting*. This event-forming element is the focus moving forward. In order to pinpoint the appearance and behavior of this eventive element, I will delve into work done on a certain kind of coercion.

3.5.3.1 Coercion

In sentences like the following, there is an inuition that the noun phrase *the movie* contains a nonovert event:

(87) Tor Håvard began the movie.
∼ 'Tor Håvard began watching (or some other event) the movie.'

The movie can here only refer to an event relating to a movie, while this would not be the case with a verb like *threw*, for example. I call this change in meaning "coercion", though others may use the term "metonymy". Metonymy can encompass a wide array of specific phenomena (e.g. how *Wall Street* can refer to a related concept, like the stock market), so "coercion" seems more neutral in this setting.

Extensive theoretical work has been done on whether this meaning is compositional or not (among others N. Asher 2011; N. Asher and Pustejovsky 2006; Egg 2003; Jackendoff 1997; Nunberg 1979; Pustejovsky 1995). There are essentially two options: 1) A nonovert event (or some other kind

of type-shifter) is added to the noun phrase structure, to accommodate the event requirement that verbs like *begin* have (e.g. N. Asher 2011; Jackendoff 1997; Levin 1993; Pustejovsky 1995); 2) Nouns have dual meanings in the lexicon, one that is entity-related and one that is related to events, and context fills in which one is most relevant (e.g. Egg 2003; in some sense Lascarides and Copestake 1998).

Whether an event has *compositionally* speaking been added to the noun phrase in these sentences has been the focus of much experimental work, as well. A number of experiments found a processing cost when participants were faced with this coercive construction.[27] For example, McElree et al. (2006) used the multiresponse signal speed-accuracy trade-off method (MR-SAT) and found that the test items containing coercion were interpreted less accurately and more slowly than the control sentences. In a self-paced reading task, McElree et al. (2001) concluded that reading times were longer when *the book* was the complement of a verb like *starting* than verbs like *writing* or *reading*. Pickering et al. (2005) found the same to be the case when using the eye tracking while reading method, specifically that reading times were longer when *the table* was preceded by *began* than when preceded by *built* or *sanded*. Traxler et al. (2002) and Traxler et al. (2005) attribute the extra processing cost to a shift in meaning from entity to event that comes from the selectional requirement of the verb *began* (in line with Pustejovsky 1995).

While it is controversial whether linguistic processing and compositional structure line up one-to-one, and while disputes have been made against these studies,[28] I take these results to indicate that there is a difference be-

[27]See especially the following series of studies: McElree, Pylkkänen, Pickering, and Traxler (2006); McElree, Traxler, Pickering, Seely, and Jackendoff (2001); Pickering et al. (2005); Traxler, McElree, Williams, and Pickering (2005); Traxler, Pickering, and McElree (2002).

[28]See here especially de Almeida's (2004) studies, the results from which he uses to argue for a purely contextual approach rather than one that requires "enriched composition". Part of de Almeida's (2004) goal is to make sure that enough context was provided to reduce the potential processing slowdown of *began the book*. In the studies, no extra processing cost was found.

tween certain kinds of coercion which seem to require extra processing, and certain other kinds of natural polysemy that are fairly costless for the speaker/hearer. I propose to model these more effortful coercions via syntactially represented semantic operators, and leave the resolution of natural polysemies to a non-syntactic module. The claim here is that the vehicle event "coercion" type is of the "begin the book" type of coercion, and should be modeled by means of an explicit operator. Specifically, I will use the idea that there is an event that selects the entity and thus makes the entire noun phrase denote an event, which means that it can behave similarly to situations like reading the book.

I will keep working with the assumption that noun phrases like *the book* can sometimes denote an event. The event must somehow be present without having the syntactic effect of forming a clause or phrase. Again I emphasize that we are not converting the nominal projection into a verbal one – the derived projection is still nominal, it just denotes an entity that is sortally speaking an event, not an object. For nouns that already denote entities of the sortal event type, like *meeting* or *trip*, no such coercion operator is necessary. Pustejovsky (1995) only applies the event to nouns that do not denote events, like *book* or *car*. When the noun is eventive, like *meeting* or *trip*, arguably nothing is added to the structure. This can be backed up by two studies by Traxler et al. (2002), who used eye tracking and self-paced reading to show that processing takes longer when verbs like *begin* are followed by entity nouns like *the book* than event nouns like *the fight*. In fact, verbs followed by event-denoting noun phrases did not cause any processing difficulty, similar to verb phrases like *write the book*. Traxler et al. (2002) take this to mean that, when the noun phrase denotes an entity, more structure is needed, and that it is this compositional enrichment that causes the processing delay.

Looking at this kind of coercion through the lens of a type-driven and context-sensitive model of lexical semantics, N. Asher (2011) provides a particularly satisfying explanation for the difference between entity and event nouns.[29] He finds a middle ground between the event/type-shifting ap-

[29]N. Asher (2011) uses a framework that is slightly different from mine, so I will translate

proach and the underspecified lexicon approach by positing two different kinds of nouns. Some nouns only have one lexical entry, and it is coercion, like the addition of a verb like *enjoy*, that shifts the meaning of the entity to something related to that entity, like an event of reading. N. Asher (2011) calls this the "polymorphic" or "dependent" type, and it usually applies to entity-denoting nouns, like *book*. Other nouns are so-called "dual aspect" nouns, which can refer to several things related to the concept. For example, *lunch* can refer to the food itself or to the event of eating it, and it does not need coercion to refer to one instead of the other. Once again, I will represent the switch to a dependent or polymorphic type in N. Asher's (2011) sense with an actual operator in the syntactic-semantic representation, while dual aspect nouns will require no such operator.

To account for the dual aspect type, N. Asher (2011) states that it is a complex type • which can be used for terms whose two aspects are freely available for the interpretation. The coercion of a polymorphic noun, on the other hand, takes place because of a type-conflict between the verb and its complement. A coercing verb like *enjoy* has some specific properties, such as requiring its internal argument to be of the event type. To fix this, the coercing predicate maps an entity onto some underspecified event. The value of the event depends on the kind of noun involved (see N. Asher 2011, pp. 222–223 for the formal denotation).

When looking at the data involving *occasional*-type FAs, we see that these FAs can combine with both dual aspect nouns and polymorphic nouns. I will now go through how polymorphic (i.e. entity-denoting) nouns in our particular data has been dealt with in the past.

3.5.3.2 Applying N. Asher's (2011) approach to our data

I am not the first to use N. Asher's (2011) type-shifter to account for the eventive reading of *the occasional cup of coffee*. Gehrke and McNally (2011, 2015) and Bücking (2012) insert a coercive event operator to take the entity

his formalism to a format that is more suitable for my purposes and a little bit simpler.

as its argument, and it is this event that *occasional* modifies.[30] This satisfies *occasional*'s event presupposition. For Gehrke and McNally (2015), this is a generic event e_k (p. 858).[31] For dual aspect nouns, the denotation is fairly straightforward: a noun like *inspection* denotes an event kind,[32] and it is this event kind that is sparsely realized via the R relation:

(88) [[The occasional inspection is important]] =
(**Gen** e_k : **inspection**(e_k) & **occasional**(e_k) & **R**(e,e_k))[**important**(e_k)]

When the noun is polymorphic, it needs the *E* operator to make the noun denote an event related to beer:

(89) [[The occasional beer is healthy]] =
(**Gen** e_k : **E**(**beer**)(e_k) & **occasional**(e_k) & **R**(e,e_k)[**healthy**(e_k)]

E is a semantic operator and is not meant to reflect a head in the syntax. The event picks an entity (*beer*) and an event kind e_k. *Occasional* modifies e_k, resulting in the distribution of realizations of event kinds. In Gehrke and McNally's (2015) account, the *E* event is however only present for this particular reading: for Schäfer (2007), the adjective always modifies an event property, but for the generic reading, the output is still an event, and for the adverbial reading, the output is an individual stage property. The difference is then only the result. Schäfer (2007) comments that *E* can also be present when adjectives like *quiet* or *quick* are used, as in *A quiet/quick donut restores Sheriff Truman's power*. As I have expressed throughout the section, I think it is on the right track to posit a nonovert operator, which has more purposes than just this case study, as a solution when the noun is unable to denote an event on its own. My vehicle event is not too different from *E*, though my analysis provides more insight into the significance of the nonovert event.

My goal may also be different from that of other work. I am mostly con-

[30] Schäfer (2007) also provides a similar solution, but his analysis came before N. Asher's (2011) proposal.

[31] I have changed their examples to include *occasional* instead of *periodic* and *daily*, since I am focused specifically on *occasional*, *odd* and *rare*. See 3.2.1 for a comment on this choice.

[32] See Krifka et al. (1995) for more about the genericity operator Gen.

cerned with making a distinction between the natural • type polysemies and the dependent types that arise from genuine coercion. With my particular view of the syntax-semantics interface, in which semantics is directly reflected in the syntactic projections, I represent this operator in the syntactic representation, but another kind of theory might achieve the same effect by doing the work in a semantic module and representation contrasting with a more pragmatic mechanism. And while experimental research has been done on the particular coercion in which *the book* is used with an eventive reading of *reading the book*, such experiments have not been run for *occasional*-type FAs (to my knowledge). Future work is needed in order to confirm whether a noun phrase like *the occasional sailor* does actually require effortful processing, and I encourage such an endeavor.

Bücking (2012) makes some adjustments to this type-shifter, overtly following N. Asher (2011). However, his analysis does not successfully capture the data, in a number of ways. In opposition to Gehrke and McNally (2011, 2015), who advocate that *occasional*-type FAs select event or entity kinds, Bücking (2012) makes the argument that these FAs can pick out entity particulars. He uses the following example to show that *occasional* picks out a single, unique cat, emphasizing that the focus sentence is in the progressive aspect and that *cat* can serve as a referent for the anaphor *it*:

(90) I stepped outside. The moon bathed the street in a pale light. *An occasional cat was passing by.* It seemed to become interested in me since it stopped and attentively looked at me.
(Bücking 2012, p. 97; to be disputed)

Supposedly, the referent of *cat* would refer to a single cat that performed a low number of passing-by events. I will dispute this piece of data soon.

Bücking (2012) claims that in the sentence *The occasional sailor strolled by*, there is a strolling-by event e performed by a sailor y, and that the event kind of strolling-by by sailors z happens occasionally. He thus separates the sailor entities and the strolling-by events in terms of specificity: the sailors are particulars, and the strolling-by events are kinds. See his denotation below. Some notation, taken from N. Asher (2011), should be explicated here:

π is a presuppositional base type that carries the type presupposition of terms; *o-elab* stands for Object Elaboration and is a relation that relates variables for complex types and the variables for their respective constituent types; K is a kind.

(91) [[The occasional sailor strolled by]] =
$\lambda\pi$. $\exists$e : STROLL BY & $\exists$y : SAILOR & $\exists$x : SAILOR • K_{SAILOR} & $\exists$z : K_{SAILOR}) . occasional(z,π) & stroll-by(z,x,π) & sailor(x,π) & o-elab(y,x,π) & e $<$ now]
(Bücking, 2012, p. 106)

"Sailor" is then actually a dual aspect noun that can refer to an actual sailor (SAILOR) *or* the kind of thing that is a sailor (K_{SAILOR}):

As for a generic meaning like in *The occasional beer tastes good*, Bücking (2012) takes *occasional beer* to mean the "set of beers that bear a complex type for particulars and kinds and for which there is a kind for drinking beer that is realized occasionally" (p. 105).

(92) [[The occasional beer tastes good]] =
$\lambda\pi$ Gen [y : BEVERAGE]($\exists$x : BEVERAGE • $K_{BEVERAGE}$) $\exists$z : $K_{DRINK_{AGENT \bullet K, AGENT, BEVERAGE \bullet K_{BEVERAGE}}}$) $\exists z_1$: AGENT • K_{AGENT} . occasional(z,π) & drink(z,z_1,x,π) & beer(x,π) & o-elab(y,x,π); tastes-good(y,π))
(Bücking, 2012, p. 105)

This reading is different in a few ways: although *the occasional beer* has neither an overt event nor agent, these are specified in the denotation. The agent is a dual aspect noun referring to an actual agent or an agent kind.[33] "Beer" refers to the physical beverage or a beverage kind, and the nonovert event is identified as a drinking event, for pragmatic reasons.

The first problem with Bücking's (2012) proposal is that he builds his denotation of the proposition around the noun phrase denoting a single particular. This means that he has a hard time deriving either pluractional or

[33]The agent could possibly be equivalent to *pro* in the syntax. Martin et al. (2020) believe this to be the case.

generic readings of the overall assertion. Moreover, while the noun phrase containing *occasional* sometimes does allow a simple referential interpretation, in many cases it does not. Example (90), which is supposed to counter a kind-based approach to these entities, is in fact judged to be unacceptable by all the native English speakers I have consulted. The sentence is described as sounding off because of the progressive aspect, the referent being one, individualized cat and the implication of the use of *it* to refer back to *cat*. This refutes the idea that sentences with the adverbial reading can have the *occasional*-containing noun phrase denote a single, specific individual.

A successful analysis should be able to explain why the generic reading sometimes generalizes over a series of nondescript events and sometimes particular episodes. Intuitively, in example (93a) below, it is the umbrella phenomenon, i.e. the fact of sometimes having glasses of wine, that is the subject of the VP predicate *be good for you*. In example (93b), the *occasional*-NP combination is a particular (which only shows up occasionally) which is the subject of the VP predicate *gives me a headache*. In each case, the nature of the VP predicate determines the most felicitous way to interpret the subject. But it seems that both kinds of readings for the *occasional*-NP combination should be available in principle.

(93) a. The occasional glass of wine is good for you.
X PARTICULAR: 'Out of a number of glasses of wine you have drunk, some of them are good for you.'
✓SERIES: 'It is good for you to sometimes drink a glass of wine.'

b. The occasional glass of wine gives me a headache.
✓PARTICULAR: 'Out of a number of glasses of wine I have drunk, some of them give me a headache.'
X SERIES: 'It gives me a headache every time I drink a glass of wine, which happens rarely.'

The fact that the events involved in the so-called "generic" reading can have an episodic reading, like (93b), is on its own a sign that the label is misleading, though that is not the focus here. The main point is that there is no restriction with regards to whether *occasional* needs a particular event or an

event kind to modify.

Another problem is that Bücking (2012) considers the type accommodation to take place lexically, inside KIP, meaning that its insertion does not have any syntactic effects. One counterexample to this is that, when an *occasional*-type FA is added to the nominal structure and as such signals that there is a nonovert event, the pluractional reading is invoked even when the noun is singular (shown in subsection 3.2.2). If the type-shifting event is only inserted at the lexical level, we cannot explain how the event is made plural by *occasional* regardless of whether the noun is singular or plural.

One final problem is that Bücking's (2012) proposal does not formally describe these sentences as *pluractional*. His denotation picks out a particular entity (e.g. a sailor) that is involved in a particular event (e.g. strolling by), but he is not able to capture the repetition that is crucial to the meaning of these FAs. Ultimately, I believe that the following traits need to be accurately captured: 1) the presence of the nonovert event in the syntax; 2) flexibility in whether the entity is a particular or a type; 3) obligatory pluractionality. In what follows, I will argue for an approach in which the event, which I label "Vehicle", is semantically underspecified but present in the syntactic-semantic computation in order to "fix" situations where *occasional* needs an event but cannot find one. My approach is unique in that it also has implications for the nature of "stage".

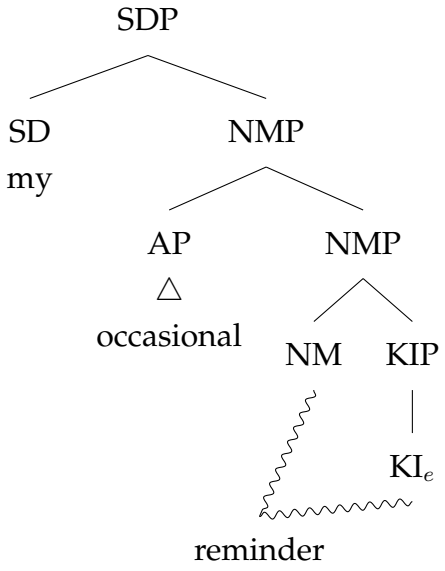
3.5.3.3 My suggestion: vehicle events

There is obvious merit to a perspective in which some nouns can be inherently event-related and others not, and where the eventive information can in the latter case come from the application of an operator. Since N. Asher (2011) introduces formalism that requires assumptions outside my own, I will translate his split between two noun types as follows: 1) When the noun denotes an entity, a nonovert event has been added to the nominal structure; 2) When the noun denotes an event, it is of argument type x_e, i.e., its eventive denotation is formally represented as an eventive subtype

of a noun (following the intuition of Davidson 1967).[34] *Occasional*-type FAs, which presuppose an event, are satisfied when the noun is dual aspect, since it is simply of the eventive type x_e. Below is an example of what the noun phrase looks like when the noun has an eventive interpretation:

(94) a. *My occasional reminder* that if you complain about how long it takes to review journal reviews AND you don't respond to review requests from journals, that you are the problem![35]
$\sim$ 'This is my reminder, the kind of which I give sometimes, that if you ...'

b.



When the noun is polymorphic, however, *occasional* can only be satisfied if an event is added, which in a way serves as an entity-to-event converter. My label for this event is "Vehicle". Below is an example using the polymorphic noun phrase *glass of Coke*:

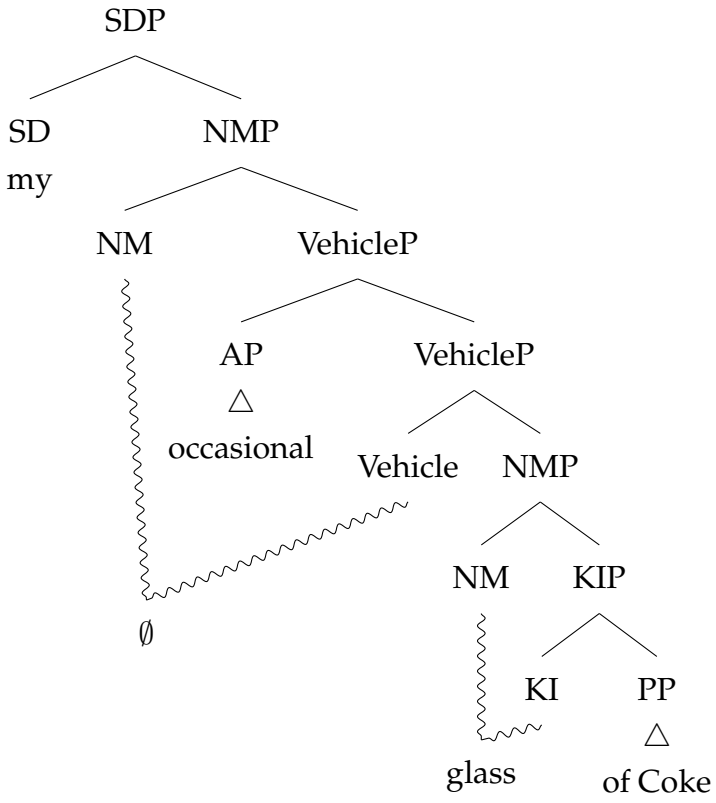
(95) a. Incidentally to answer your question, I'll take *my occasional glass*

[34] I will not discuss whether eventive nouns are of argument type e or x_e, since the difference does not affect my analysis.

[35] `https://x.com/tmiller_uq/status/1800057259948655023`, last accessed 30 July 2024.

of Coke ice cold, thank you![36]
∼ '... I'll take my glass of Coke, the kind of which I drink sometimes, ice cold ...'

b.



Occasional cannot be the direct modifier of the NMP *glass of Coke*, as there is no logical way for a glass of Coke to itself happen rarely. Inference needs to happen for the noun phrase to be interpretable as an event, and it is this inference that initiates Vehicle insertion. Vehicle is inserted to "fix" the semantics, so that there is now an event-denoting noun for *occasional* to modify. Syntactically, VehicleP is added to the nominal projection, below SD, and accompanies its own NM.

But putting aside inference, we may ask: what is the *semantic* meaning of the vehicle event? That is, when no context can fill in the event related to the entity, like how we can assume drinking for *the occasional glass of wine*,

[36] `https://www.nairaland.com/88326/water-coke`, last accessed 30 July 2024.

what exactly does Vehicle mean? I suggest an underspecification approach, though I will show that the presence of the event has some implications for how we view the entity. This is the basic meaning of the vehicle event: the x_e variable represents the vehicle event, the P is the nominal property that the Vehicle operator (head) merges with.

(96) DENOTATION OF VEHICLE EVENT
[[Vehicle]] = λx [P is a vehicle event for the nominal property x]

Vehicle can only select entity-denoting nouns, meaning that nouns of argument type x_e are excluded. I believe that, now that I have established the vehicle event, I can provide a satisfying denotation for the phrase *odd tomato* in example (97):

(97) You shouldn't throw things at people, but for certain politicians *the odd tomato would be justifiable*.
$\sim$ '... throwing tomatoes at certain politicians every now and then would be justifiable.'

(98) [[[odd [$\emptyset_{Veh}$ [tomato]]]]] = E [E is a plurality of events e, such that $\forall$e$\in$E, e is a vehicle event for 'tomato' & the elements e$\in$E are distributed sparsely within e*]

E represents the total set of events *e*, and *e** is a contextually relevant (spatiotemporal) dimension along which each member of *E* is sparsely distributed.

My *e** can be compared to that of Zimmermann (2003), who connected the (in his case verbal) event *e* to a contextual event *e** with a part-of relation. The event *e** can be seen as the restrictor of the proportional meaning of the semantics of these FAs – it is the background set of situations within which the [occasional+Vehicle] event is said to be sparse. While the background information is nonovert in *e** in example (97), it can be made explicit in the form of an adverbial clause attached to the whole sentence, like in the example below:

(99) When I drink a cup of coffee in the evening, the occasional one will actually keep me up all night.

The adverbial clause has now provided the context that the listener would otherwise need to infer to fill in the meaning of e^*. The background information can also take the form of a relative clause, as in the following example:

(100) The occasional cup of coffee that I drink keeps me up all night.

With these additions, we end up providing indirect content to the nature of the vehicle event as well, by directly specifying the background meaning of the restrictor set e^*.

But in which way is my vehicle event not just a simplified version of N. Asher's (2011) operator? The vehicle event operator serves the fundamental purpose as a derivation of a stage-creating observable situation from an object entity. As I showed in subsections 3.2.3 and 3.4.2, individuals and stages are different. Individuation is a noun phrase-internal semantic distinction which moves from an essential general description to the assertion of an actual entity in the world that possesses that property. The transition to stages, on the other hand, is crucially parasitic on an event that is external to the nominal's identity criteria. We cannot have a stage of an entity without an event to provide the temporal and/or spatial platform for the entity's appearance in the world. The purpose of Vehicle is to provide this platform. It is important to note that, although coercion is required, this coercion is not costly: Vehicle is quite cognitively natural, and it is readily accommodated within natural language (as we will see further in Chapter 4). With Vehicle now identified and described, we can integrate it into the final analysis, which I will now present.

3.6 Putting everything together

We now have the ingredients for a satisfying analysis. In the following, I present my proposal for *occasional*-type FAs. I will follow up with an explanation for the "adverbial" reading, in which the verb seems clearly con-

nected to the FA. My main argument is that *occasional*-type FAs are modifiers that assert a multiplicity of situations that are nevertheless distributed sparsely in the context. In cases where they find themselves attached to nouns that do not themselves denote events, they have to be coerced to a situational reading by Vehicle. My explanation for the adverbial reading is one of multidominance, in which the KIP of the FA-containing noun phrase is an argument of both VehicleP and the VP/*v*P. The proposal will be followed by implications for data beyond what has been considered here, especially relating to other adjectives labeled "strange" in earlier research.

3.6.1 The semantics of *occasional*-type frequency adjectives

We have learned that *occasional*-type FAs modify events, whether these be eventive "dual aspect" nouns or nonovert vehicle events. The question is now what these FAs do to the events they select and how this can be represented.

One of the core attributes of these adjectives is that they express the sparse distribution of events along some spatiotemporal dimension. Since the inclusion of *occasional*-type FAs always results in this pluractional reading, as we saw in subsection 3.2.2, I believe that it is the FA itself that encourages it. In terms of the lexical semantics of *occasional*, this seems obvious – the FA picks out "occasions", i.e. events that do not happen frequently, and specifies that there are multiple but still few of these occasions. *Occasional*-type FAs thus serve as pluractionality operators in that they express when singularities are multiplied to create a plural family of predications. Lasersohn (1995) gives the following bareboned denotation of pluractionality markers, and it gives a neat starting point to understanding what it means for an event to be pluractional:

(101) DENOTATION OF PLURACTIONALITY MARKERS
V-PA(X) $\leftrightarrow \forall e \in X$ [P(e)] & card $\geq n$
(Lasersohn, 1995, p. 256)

V is the verb, and *PA* is the pluractional marker. *X* marks the total set of

individual events e. For every individual event e in the set X, e is represented by the verb V and the total number of events in the set X is equal to or greater than n. The number behind the variable n is pragmatically determined, but in any case, it must be larger than or equal to 2. Lasersohn's (1995) description is based on the individual events being part of a total set of events, a concept that I will make use of in my analysis.

I will briefly comment on distributivity. It has been observed before that these adjectives force a one-to-one relationship between events and the entities involved in these events, even when the noun is in the singular form (cf. Gehrke and McNally 2015). If one only considers the sentence *The occasional sailor strolled by*, it is tempting to generalize that when *occasional* is used, a distributive reading is forced. This might lead one to believe that these are distributivity operators, rather than just operators of pluractionality.[37] This is implied by Bolinger (1967) and Zimmermann (2003), and in some sense Gehrke and McNally (2011, 2015), but I believe it to be misleading. The difference between distributivity and what we observe for these adjectives is however that the puzzle of distributivity is typically how plural-marked noun phrases, which in principle could have a group denotation and interact with its predicate cumulatively at a plural individual, instead gives rise to a predication in which each member of the plural set is said to satisfy the predicate individually. For example, *Bill and Bob are sick* entails that Bill is sick and Bob is sick, meaning that the sentence is distributive, but *Bill and Bob carried the piano up the stairs* does not entail that Bill carried the piano up the stairs and Bob carried the piano up the stairs.[38] In our case, we are starting with a singular nominal or atom, and the *occasional*-type FA creates a plurality of events by multiplying this atom. The event always ends up pluralized, and the pairing up of an event with an entity is the result of the pluractionality when the nominal is singular, not from a distributivity operator.

[37] For more about distributivity, see Bartsch (1973), Hausser (1974), Bennett (1974), Cusic (1981), Link (1987, 1991), Lasersohn (1995), Schwarzschild (1996), Sternefeld (1998), Winter (2001), Heycock and Zamparelli (2005), Nouwen (2016), Minor (2017) and Champollion (2019).

[38] See Nouwen (2016) for a clear overview and definition of distributivity.

In addition to establishing pluractionality, *occasional*-type FAs must specify that along the relevant spatial and/or temporal span, only few events take place. This needs to be added to the denotation. Other than that, the meaning is simple: the FA has access to a total set of (few) events and spreads out the set's members over a contextually relevant dimension. All of this is represented below:

(102) DENOTATION OF OCCASIONAL-TYPE FREQUENCY ADJECTIVES
[[occasional]] = λP_{x_e} . $\exists E$ [$P_{x_e}(E)$ & |E| is low on a contextually relevant spatiotemporal span]

It is then the sum of members of events *E* that is low. Pluractionality is covered in the analysis by the plurality of members in *E*.

An event-oriented perspective on *occasional*-type FAs makes it easy to compare them to their adverbial equivalents. One can imagine that adverbs like *occasionally* are in essence the same, or even that they have exactly the same denotation. It is not specified that *occasional*-type FAs specifically need a vehicle or nominal event, so it is in principle open to modifying verbal events. *Occasional* and *occasionally* would then be identical in that they both pick out an event predicate to describe the sparseness of. This would suggest that frequency adverbs are not quantifiers (contra Lewis 1975), and more work needs to go into whether this is a justifiable claim. The purpose of *-ly* has previously been argued to introduce a subject-predicate relationship (Corver, 2014). Wellwood (2019) presents the idea that adjectives like *quick* express a property of states and that *-ly* introduces a semantic relation between states and events (pp. 127–130). This work has not specifically focused on *occasional* and *occasionally*, however, and since *occasional* shows more "adverbial-like" behavior than other adjectives that more obviously modify frequency, it may be worth narrowing the scope in future investigations.

My denotation is fairly minimalist, and it gives more responsibility to pragmatics than some other approaches have done in the past. First, my approach to this spreading-out of events does not formally take into account how the events typically do not overlap in time and/or space. As described

in subsection 3.3.1, Zimmermann (2003) specifically includes a nonoverlap relation so that the events do not "clump together" in time (see also Schäfer 2007), and Krifka (1990) emphasizes the same need to specify nonoverlap in similar situations. The concern that some researchers may have with leaving out nonoverlap in the denotation is that it would predict that *The occasional sailor strolled by* could be true in a situation where all sailors strolled by simultaneously in a group. To this I will respond that the "nonoverlap" meaning of these sentences is in fact contextually derived, which we see by the fact that there are cases where the events overlap in time, and where the distribution is sparse in a spatial dimension. One example of this is *There was an occasional star in the night sky*, which I described in subsection 3.5.1. Bolinger (1967) uses the metaphor of a stroboscope to describe how these situations are distributed by *occasional* – the adjective makes situations appear in sudden, unexpected "flashes". This is an intuition that I have tried to maintain. Banning the option of temporal overlap in the formalism would make the wrong predictions.

In the vein of which parts of the meaning are contextually derived or not, we also see that, although the sentence below is not necessarily false if there is only one seagull involved, speakers may find it odd to phrase it in such a way:

(103) The occasional seagull flew past the window squawking, but otherwise my silence was not disturbed.

However, this oddness comes from world knowledge rather than the inherent meaning of the sentence itself.[39] We can also intuitively think that, because the *occasional*-type FA counts stages rather than individuals, it would be strange to utter such a sentence if the speaker knows that it was the same sailor strolling by each time – it defeats the purpose of using a construction that counts the strolling-by events instead of the one sailor individual. In sum, there are parts of the meaning that I do not include in the formal denotation of *occasional*, and while I agree that there are patterns when these

[39]See Barker (1999) for a similar argument.

sentences are uttered, these patterns are based on pragmatics and should not be an inherent part of the semantics of *occasional*.

One question not addressed so far is whether *occasional*, *odd* and *rare* constitute one FA class. Gehrke and McNally (2011, 2015) point out that *occasional* is more flexible and can be used with any kind of noun, and with any kind of event involved. *Occasional* can be used to distribute non-verbal events, while this is not the case for *odd* and *rare* without losing the pluractional reading: for example, *an occasional reader of the newspaper* is a person who reads the newspaper occasionally, but *a rare winner* is not a person who wins rarely (Gehrke & McNally, 2015, p. 841). Gehrke and McNally (2015) see this as evidence that *odd* and *rare* do not really distribute tokens across a temporal dimension, but that they instead spread out a low number of tokens in a more spatial sense. I do not think we need to separate *occasional* and *odd/rare*: the underspecified sparseness featured in my denotation in terms of some kind of event mereology would predict both temporal and spatial versions of these kinds of meanings. In my view, the "sparseness" that is initiated by the *occasional*-type FA should be expressed over situations and not specifically intervals, which allows for separation in more dimensions than one. Why *odd* and *rare* lean toward a spatial dimension than a temporal one relates to other factors, which I will explore now.

Gehrke and McNally (2015) report that *odd* and *rare* can only distribute events in time when accompanied by a definite article: *the odd glitch* is a glitch that happens rarely, while *an odd glitch* is a strange glitch; *the rare drink* can be the act of drinking a glass of wine rarely, and *a rare drink* is a drink of a kind of which there exist few. They explain the definiteness requirement of *odd* and *rare* as a result of the need for maximality in the distribution of entity tokens. The definite article is seen as a maximality operator that yields the "unique maximally general kind described by the nominal" (Gehrke & McNally, 2011, p. 192). They say that part of the process of establishing realization conditions for a noneventive kind is for the identity of that entity to be established, and that this requires the definite article.

Before continuing to discuss the definiteness problem, I think it is important to take into consideration the semantic drift that has taken place with

odd. Outside of its frequentative usage, *odd* is only used as a synonym of *strange*. One can imagine that one connection between the two meanings is that, if something is strange, it is because one does not see it often. But this is not itself an argument that the two uses of *odd* are the same. Instead, it is likely that, even though *odd* shifted its meaning to "strange", the original meaning remained for the specific usage of event modification. These are in reality two different words and not one word whose semantic denotation needs to cover all places where it appears. As for *rare*, it would result in a cohesive view of the word to simply say that it distributes the appearance of tokens in a relevant spatial domain. However, both *odd* and *rare* can count events that are spread out temporally, as well, and in fact temporality is more often than not part of the interpretation. There is then a separation between *rare* in its "regular" sense, which only refers to a spacing-out of entities in the world, and *rare* in its pluractional sense, where temporality can also be considered as a dimension along which the spacing-out can happen. So just as for *odd*, it may be the case that *rare* has drifted in meaning in one of its uses.

I will now address the definiteness question, my answer to which will be more pragmatic than semantic in nature. My suggestion here is that *odd* and *rare*, because their lexical semantics is not itself related to the distribution of events, need the definite article for the listener to pick up on the non-standard reading of these adjectives. In additin to referring to a previously introduced entity, definite articles can have the discourse function of referring to an entity in a context where it would be natural to refer to that kind of entity. Weak definites are an example of this (see subsection 3.4.3.1):

(104) John and Mary went to see the doctor.
(John went to a doctor named Larry; Mary went to a doctor named Wendy)

The definite article, then, does not always need to give rise to a definiteness operator like we would find when one introduces a specific doctor first. We can test the pragmatic explanation of the definite article by creating an minimal pair using *occasional*, which permits both the definite and the indefinite

article. When the entity involved in the strolling-by event is unexpected, it is more difficult to accept the definite article:

(105) We had a relaxing day at the harbor, enjoying a beer in the sea breeze.

a. An/The occasional sailor strolled by, though.
b. An/#The occasional clown strolled by, though.

The problem with *an* in example (105b) is supposedly the same as the problem with trying to use a weak indefinite for nonestablished settings:

(106) John and Mary went to see the vet. #The first one was optimistic, but the other one went rather quiet after having inspected the dog.

I will conclude that uniqueness as such cannot be the main reason for the overwhelming use of the definite article in sentences including *odd* or *rare*. This explanation again returns us to the benefit of separating individuals and stages: Gehrke and McNally (2011, 2015) depend on a uniqueness of *individuals*, even though, as we have seen, it is not the individuals themselves that these FAs modify. It is thus beneficial to have an explanation of the definiteness restriction that does not depend on the uniqueness of individuals, but rather some familiarity with the events through which the entity kind can be observed.

As a conclusion to this discussion, I still believe that it makes sense to make a blanket generalization that *occasional*, *odd* and *rare* operate along a spatiotemporal dimension, rather than creating even finer-grained subcategories for these adjectives.

3.6.2 Connection to the verb event

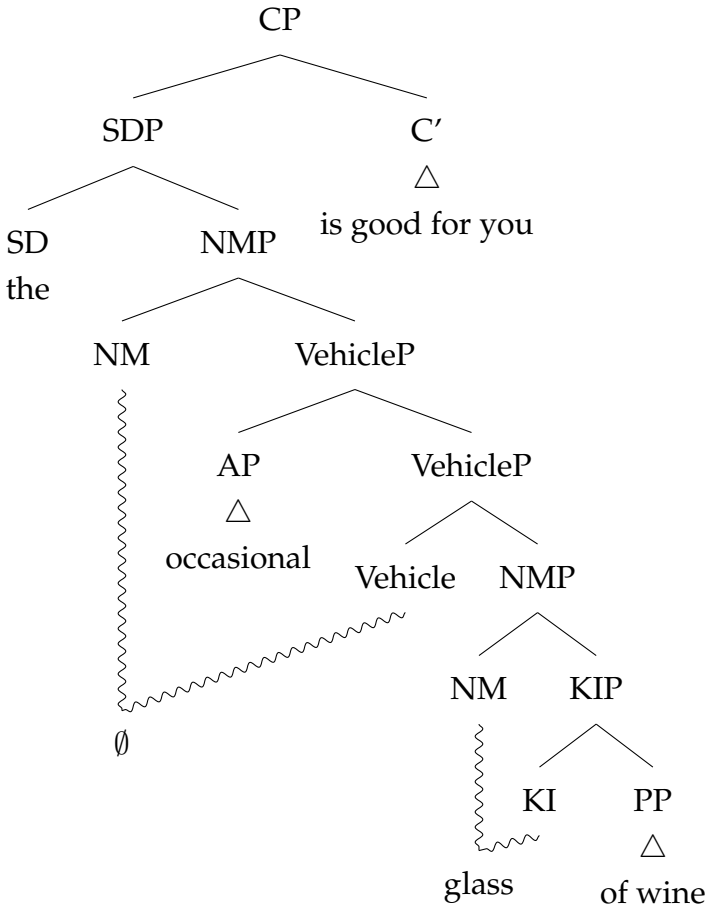
I will use multidominance to explain the connection to the verbal event in "adverbially" interpreted sentences. One of my counterarguments to the adjectival approach in subsection 3.3.2 is that there *is* a compositional connection to the verb, and that the plurality of the verb is not just context-based.

However, my argument differs from the quantificational approach in that it is not the *occasional*-type FA itself that connects to the verb. Instead, I argue that when a vehicle event is present, an adverbial reading can be reached if we believe that KIP is dominated by both Vehicle and V/v.

The "generic" reading is unproblematic for a non-multidominant approach. In a sentence like *The occasional glass of wine is good for you*, the subject noun phrase refers to a vehicle event that is somehow related to the kind of thing that is a glass of wine, and this plural event, pluralized sparsely, is good for you. It could also possibly be a plural event type. See below:

(107) a. The occasional glass of wine is good for you.

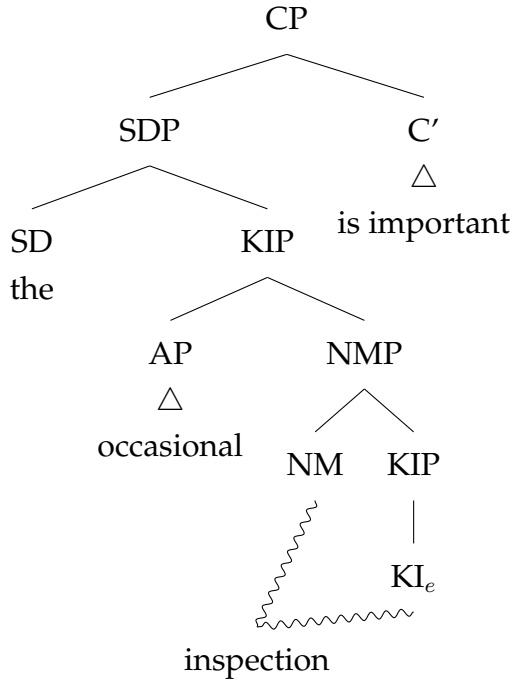
b.



For the generic reading, there is also no compositional problem when the

noun is eventive:

(108) a. The occasional inspection is important.
In the sense of: 'It is important to sometimes conduct an inspection.'

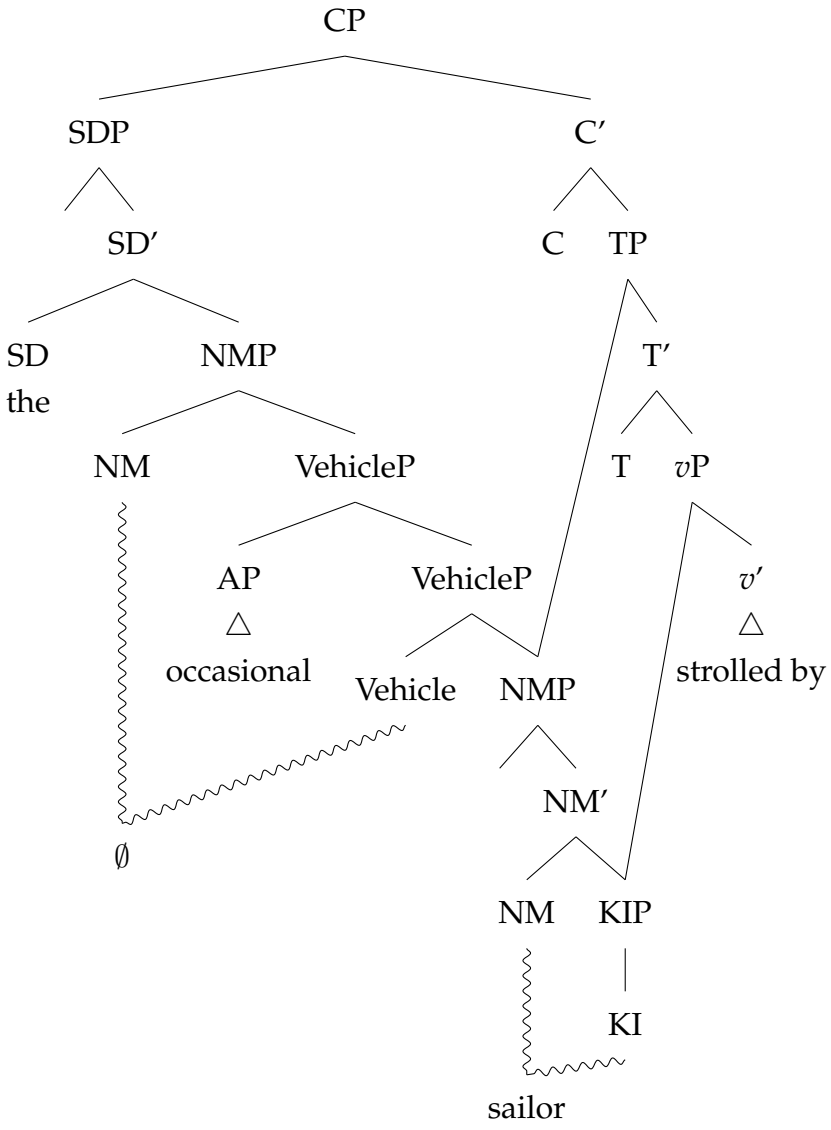
b. 

In the sentences above, there is no intermediate attachment between KIP and the verb phrase. The two projections only connect once the noun phrase has been fully formed as an event-denoting SDP. This is because of the selectional properties of the predicate in question that require a situation or event type as its argument.

However, in sentences like *The occasional sailor strolled by*, we now encounter a new problem: if the SDP denotes a whole set of sparsely distributed events, it cannot simultaneously be the agent of the strolling-by event. The agent of the strolling-by event is the kind-denoting entity that is embedded inside the SDP. How do the syntax and the semantics interact to deliver this set of interpretations? In particular, how do we compositionally integrate these two different levels in the nominal denotation, which seem to be required to do different semantic jobs?

Under the split-phrase, multidominant approach described in subsection 3.4.3 (de Vries, 2013; Sportiche, 2005), KIP is allowed to be in separate subsets simultaneously. Below is the tree illustration:

(109)



Sailor now refers to the kind of thing that is a sailor, and it is related to some contextual event (such as observing), and it is related to an event that can be described as "strolling by". This satisfies the intuition that speakers have about the connection to the verb, while also preserving Vehicle as a way to

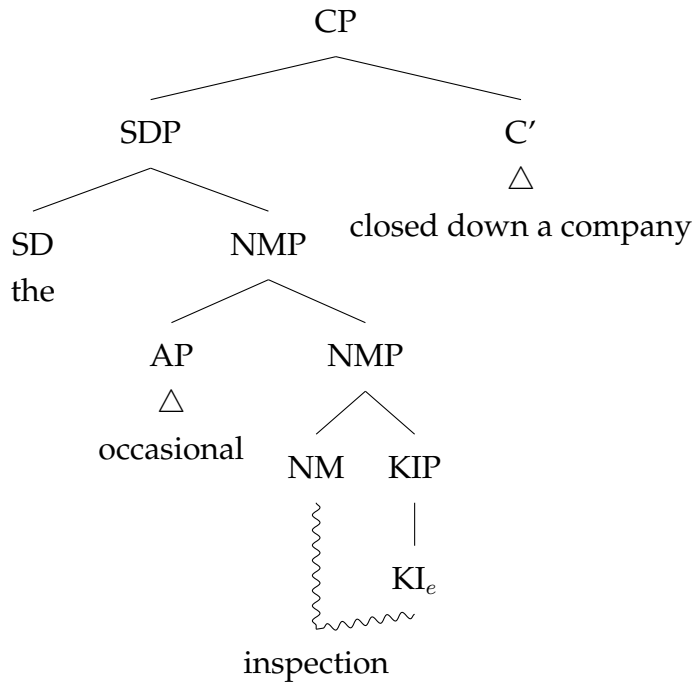
explain the *occasional*-type FA's requirement for a local event and the "observational" aspect of these sentences. Using a multidominance approach can help represent the fact that the core denotation of the noun phrase is a simple property of entities and composes as required and expected with the verbal thematic spine, while at the same time, the larger coerced nominal denotation is adjoined to the verbal spine. The thematic attachment of a kind to a lower verbal level also aligns with the views of *occasional*-type FAs that center the kind reading of these entities (Gehrke & McNally, 2011, 2015; Morzycki, 2021), and it shows that *strolled by*, as a v with a KIP argument, refers to an event kind (described in subsection 3.4.3.1).

The noun phrase is also attached at the SDP level, where it takes up Spec,TP due to its role as subject. From this position, the event-denoting noun and the event-denoting verb can be conjoined via PM. This works identically to the adverbial reading of the sentence containing *inspection* further up. Since T is the level at which event kinds are turned into event particulars, the vehicle event is now within the instantiation domain. This is what allows the vehicle event to associate with the VP event itself.

Do we need multidominance to explain sentences where *occasional* modifies an eventive noun? I do not believe this to be the case. When the noun is eventive, there is no puzzle: an event cannot perform an action, and we do not find cases that break that rule when the noun is, e.g., *inspection*. The multi-attachment is triggered by the selectional properties of the predicates in question. The structures behind the sentence below and the "generic" use of *inspection* (shown above) are therefore identical:

(110) a. The occasional inspection closed down a company.
$\sim$ 'Every now and then, an inspection closed down a company.'

b.



The two events end up with an "adverbial" reading because they are directly connected to each other via Predicate Modification (PM).

Finally, I wish to address the fact that what is called a "generic" noun phrase can denote a series of events *or* particular events. I pointed out in subsection 3.5 that the noun phrase *the occasional glass of wine* can receive either reading. I repeat the examples in (93b) below:

(111) a. The occasional glass of wine is good for you.
X PARTICULAR: 'Out of a number of glasses of wine you have drunk, some of them are good for you.'
✓SERIES: 'It is good for you to sometimes drink a glass of wine.'

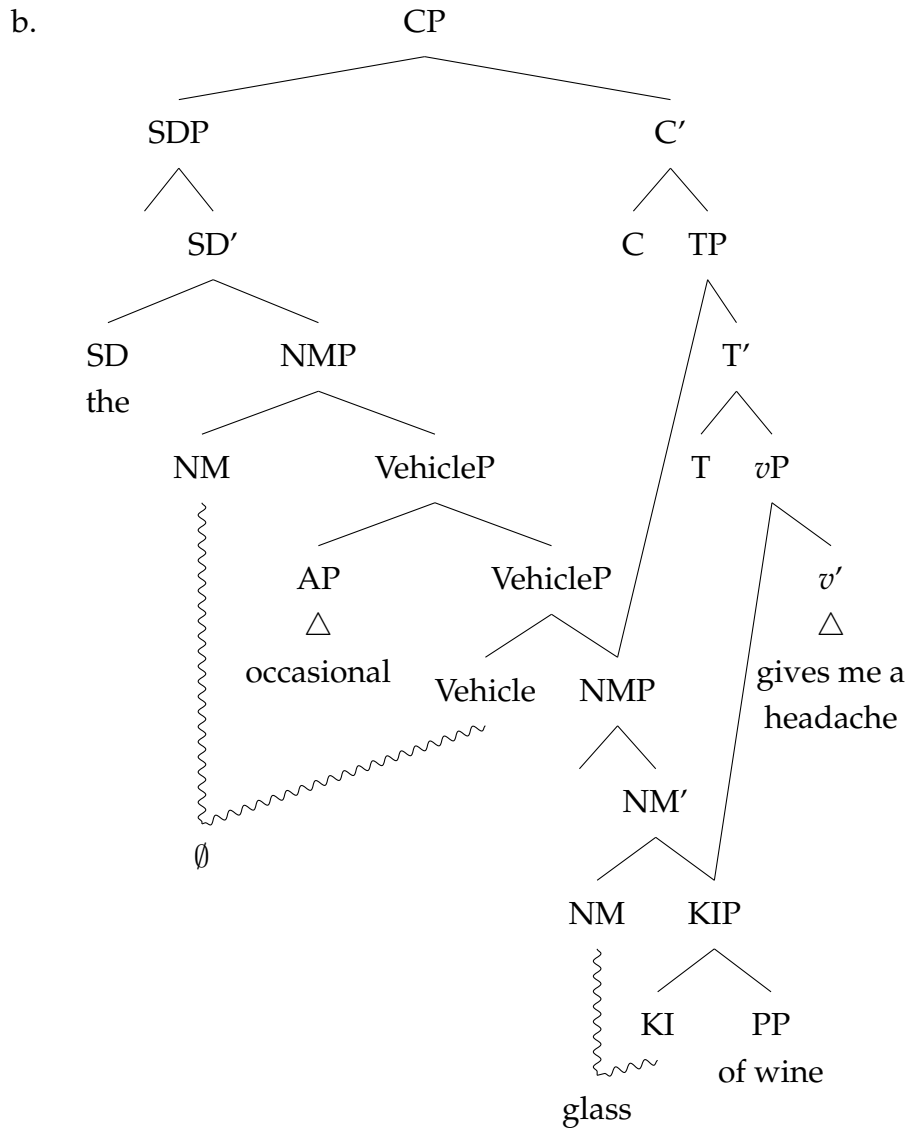
b. The occasional glass of wine gives me a headache.
✓PARTICULAR: 'Out of a number of glasses of wine I have drunk, some of them give me a headache.'
X SERIES: 'It gives me a headache every time I drink a glass of wine, which happens rarely.'

I believe that the multidominance approach can help us explain this distinction, as well. The distinction between the two readings, in my view, comes from whether KIP is dominated by both Vehicle and v, like we saw in the classic, "adverbial" example with the sailor. I already provided the hierarchical structure for sentence (111a) in example (107), which is an unsurprising analysis: the KIP *glass of wine* is dominated only by Vehicle, and the insertion of Vehicle produces the end result that the SDP *the occasional glass of wine* sortally denotes an event. And because the noun phrase now denotes an event, it shows up in "eventive" locations in the distribution. Vehicle is not formally specified as generic (i.e., I do not implement Krifka et al.'s (1995) Gen operator), and instead the generic flavor of the noun phrase comes from context, especially once the adjectival modification has taken place.

Following a view in which context fills in the generic/episodic interpretation of an event means that there is also no specific machinery that expresses that Vehicle is *episodic* in (111b). I argue that the "episodic" reading in that example comes from the combination of the *glass of wine* and the verbal event of giving the speaker a headache. In reality, this sentence is underlyingly no different from the "adverbial" reading that we see in the sentence *The occasional sailor strolled by*. Below is the hierarchical structure of example (111b), which looks identical:

(112) a. The occasional glass of wine gives me a headache.
$\sim$ 'Out of a number of glasses of wine I have drunk, some of them give me a headache.'

b.



The multidominance approach has one specific benefit here, compared to the alternatives: because the "adverbial" reading arises from KIP also being described by *gives me a headache*, instead of *occasional* itself quantifying over the entity and the verbal event, we are able to get more nuance. Namely, *occasional* can under my approach describe the in some sense generic event of drinking glasses of wine, at the same time that these pluralized nouns can be involved in giving the person a headache. My approach can maintain Vehicle as an event that does not strictly serve as a generic *or* episodic event

description, as I argued was a challenge for Bücking (2012). *Occasional* is also then not restricted to one of these kinds of event description.

My approach to the adverbial reading maintains a uniform view of *occasional*-type FAs and how they interact with events. Regardless of the final reading of the sentence, the FA selects and combines with an event-denoting phrase (either an eventive noun, or a coerced vehicle event) in all of its uses. The source of the variety of readings is thus other syntactic mechanisms and relationships.

3.6.3 Implications

My proposal has a number of implications that I will now lay out. I will make reference to the specific data relating to *occasional*-type FAs, but I will also comment on other cases that may benefit from a vehicle-based approach.

3.6.3.1 Numeral placement

Proponents of the quantificational approach use examples where a numeral precedes an *occasional*-type FA to show that, because the relevant reading is lost, the FA must in reality be a quantifier. I have not seen anyone point out the fact that this order is in fact grammatical, but that the reading is not the desired "adverbial" one. See the minimal pair below. The first sentence may be uttered in a context in which Antonio and his friends will sometimes meet up and watch horror movies together.

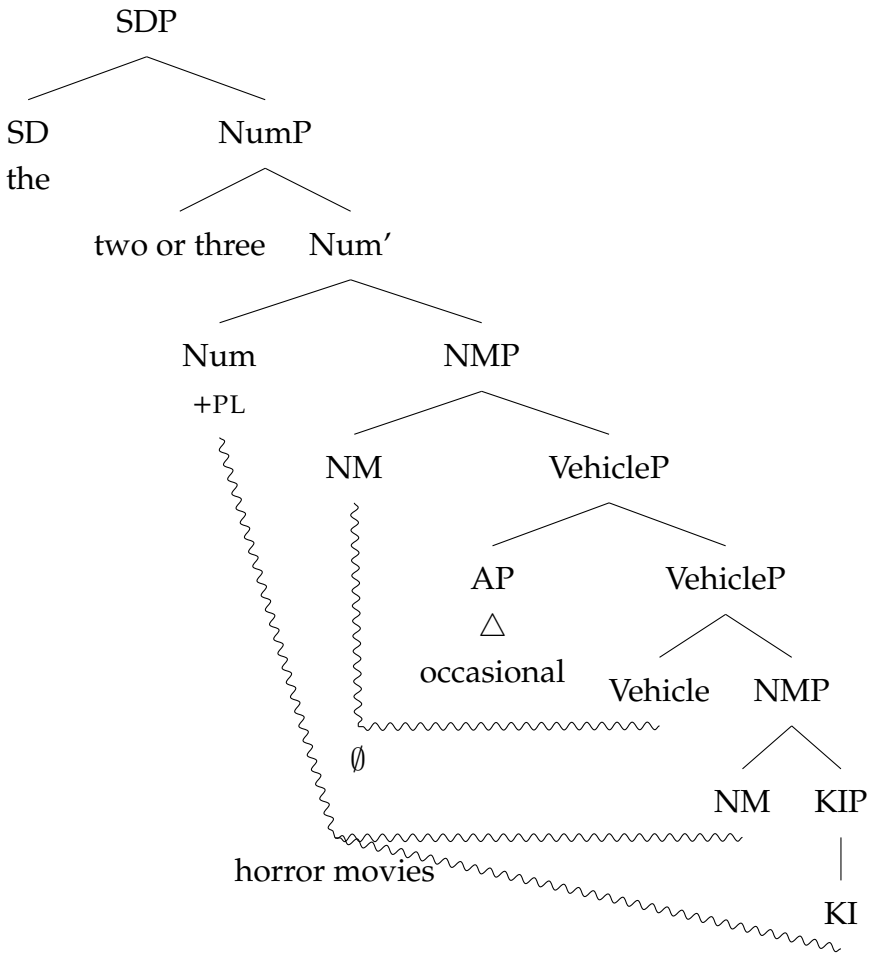
(113) Antonio watched two or three occasional horror movies.
$\sim$ 'When the group would sometimes meet to watch horror movies, Antonio joined them two or three times.'

(114) Antonio watched the/an occasional two or three horror movies.
$\sim$ 'Every once in a while, Antonio watched two or three horror movies.'

This can be explained as a difference in what the numeral *two or three* is

counting. In example (113), *two or three* counts the number of instantiations of horror movies, i.e., it counts vehicle events. This can be represented as follows:

(115)

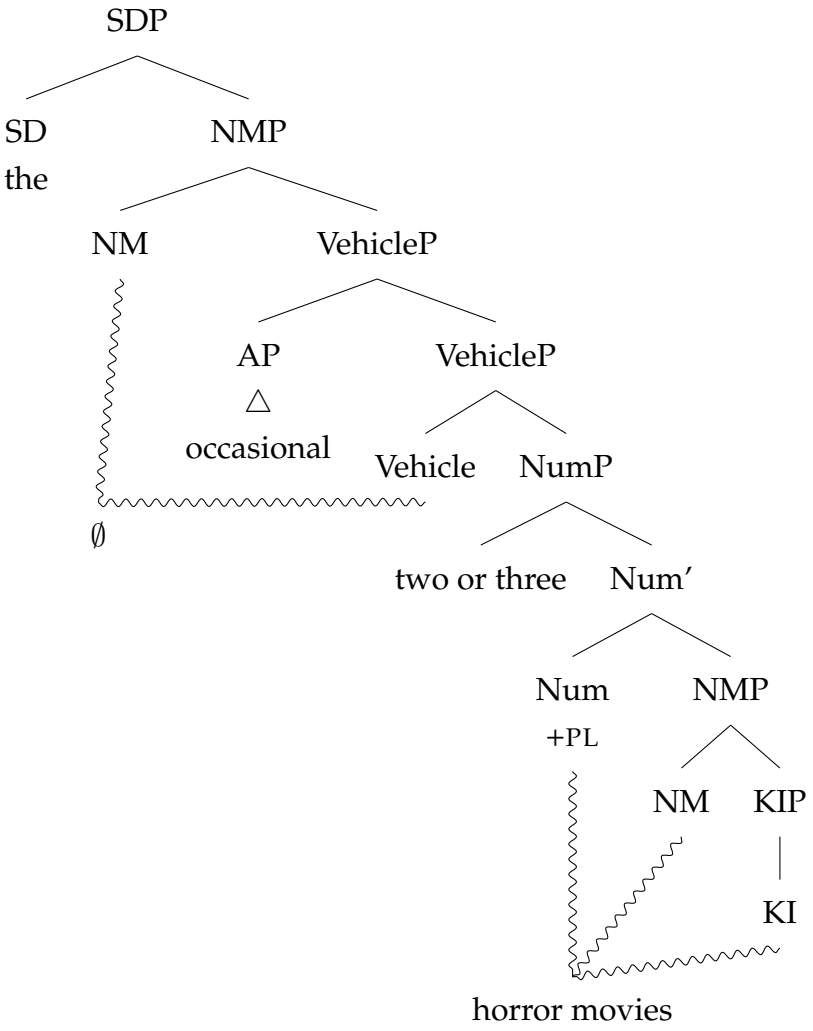


The following steps take place to reach the relevant reading: 1) NM forms an individual of the horror movie kind; 2) These horror movie tokens are turned into stages via Vehicle, and *horror movies* now refers to an instantiation of token horror movies through some event; 3) *Occasional* multiplies and spreads out these events so they happen rarely; 4) The numeral *two or three* counts these events.

The structure is different for the "adverbial" reading, in which the horror movies are not only an argument of a vehicle event but also the verbal

event of watching. The noun phrase structure that appears when the verbal event dominates KIP is one in which *occasional* modifies an event containing already instantiated *and* counted individuals, i.e., Num immediately dominates NMP:

(116)



The following processes take place here: 1) NM forms an individual of the horror movie kind; 2) The numeral *two or three* counts individual horror movies; 3) Vehicle creates an eventive environment through which the horror movie entities are placed in the world, and each situation that is being spread out contains two or three horror movies as a group; 4) *Occasional*

distributes the separate subevents within Vehicle.

The conclusion we end up with is that the numeral can vary its location according to whether it counts individuals or events. This may give us an explanation for the paradox presented by, among others, Krifka (1990), Doetjes and Honcoop (1997) and Barker (1999). I repeat example (15) below:

(117) Four thousand ships passed through the lock last year.
$\sim$ 'Four thousand individual ships performed the event of passing through the lock last year.'
OR:
$\sim$ 'Four thousand passing-through events took place last year, each performed by *some* nondescript ship.'
(Krifka, 1990, p. 487)

One can imagine that when *four thousand* counts individual ships, the numeral is located immediately above NMP. The ship kind is transformed into tokens, and these token ships are counted. When *four thousand* counts ships involved in a passing-through event, the numeral counts vehicle events. The result is the desirable one: *four thousand* can either count individuals or stages of individuals.

What we see from this data is that the inclusion of *occasional*-type FAs does not itself change anything about the noun phrase structure. The ingredients are all there, and what the FA does is modify the vehicle event.

3.6.3.2 Adjective ordering

My analysis can help solve the problem of adjective ordering, which was used as an argument for the quantificational approach in subsection 3.3.1. Example (19), repeated below, does not work with the intended reading of a repetition of stages of sailors that are welldressed:

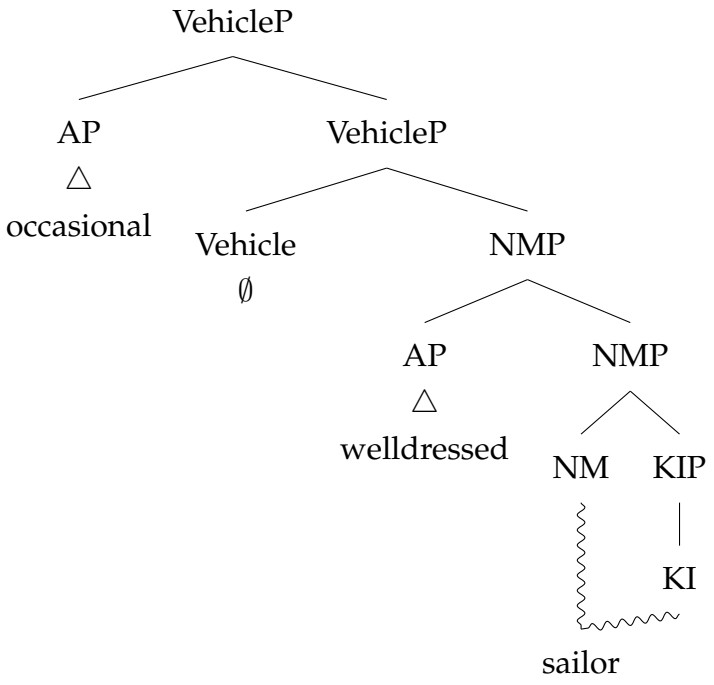
(118) The welldressed, occasional sailor strolled by.
$\not\sim$ 'It was sometimes the case that a welldressed sailor strolled by.'

We get the desired reading when the order is reversed:

(119) The occasional welldressed sailor strolled by.
$\sim$ 'It was sometimes the case that a welldressed sailor strolled by.'

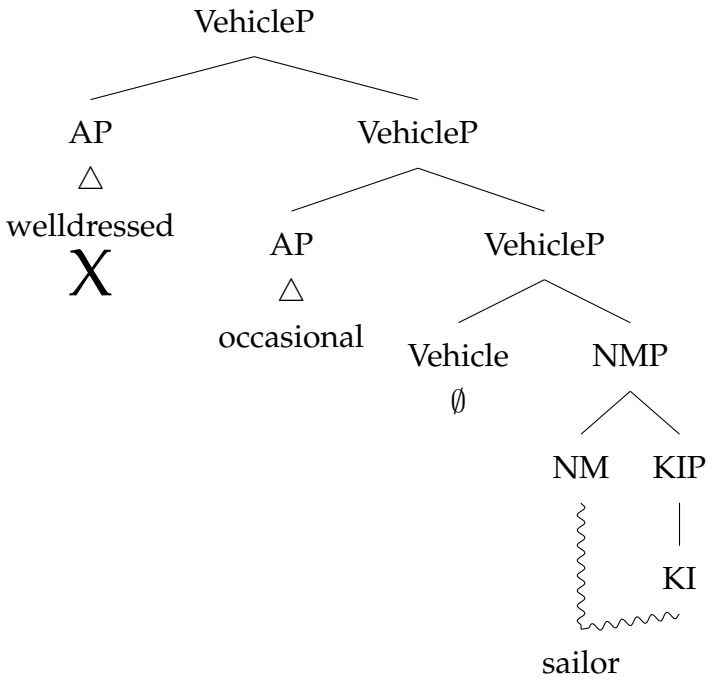
This distinction can be explained by the fact that *welldressed* cannot modify an event. The structure that does lead to the desired interpretation does so because *welldressed* is a modifier at the KIP level. The KIP *welldressed sailor* can then be turned into a stage of a welldressed-sailor kind, which can in turn be modified by *occasional*.

(120)



Conversely, *welldressed occasional sailor* does not work because *occasional* demands an event to modify, meaning that *welldressed* would be forced into a position as an event modifier. This, naturally, causes a clash.

(121)



Having an event in the noun phrase structure thus explains the strictness in adjective ordering: some adjectives are event modifiers, and others are entity modifiers. *Welldressed* is an entity modifier and must therefore be below Vehicle.

3.6.3.3 Ban on predicative usage

The ban on the predicative usage of *occasional*, *odd* and *rare* can be explained by the role and location of the definite article in the noun phrase structure. When these adjectives are attributive, they are dominated by *the*, which, especially for *odd* and *rare*, is necessary for the adjective to receive the frequency reading. The adjective will not be affected by the maximality imposed on the entity by the definite article, making it so that the sentence in (122a) cannot mean the same thing as the one in (122b):

(122) a. #The coffee is odd and good for you.
$\not\sim$ 'Drinking a cup of coffee every now and then is good for you.'

Forced meaning: '??The (unique) coffee is strange and good for you.'

b. The odd cup of coffee is good for you.

If a noun phrase has been formed only containing the definite article and a noun, there is no reason for the listener to interpret the noun phrase as eventive. It is especially clear for *odd* that if the adjective is not given a form of uniqueness, the interpretation of *odd* is a synonym of *strange*. As a result, *odd* and *good for you* cannot be conjoined because the former is forced to modify an entity and the latter modifies an event.

3.6.3.4 Other relevant types of modification

There are other "odd" cases of modification that could benefit from a vehicle, multidominance approach. I will go through some of these now. One example I have not seen mentioned before is that in English, the use of the cardinal results in a verb-associated reading similar to what we have seen for *occasional*.[40] In the example below, *first* picks out the earliest time at which a human walked on the moon:

(123) The first man walked on the moon in 1969.
$\sim$ 'The first time a man walked on the moon was in 1969.'

First does not only pick out an individual man in a row or list of men – instead, it picks out a man-walking-on-the-moon situation. We can imagine the structure of the noun phrase to be one in which *first* modifies a vehicle phrase whose head dominates *man* together with v. This is however just a preliminary idea, and more work would be needed to make a definitive statement about the case.

I also wish to connect my approach to *occasional*-type FAs to a specific usage of *good*. When located in bare singular noun phrases and combined with instruments, *good* has been found to show nonlocal modificational proper-

[40] I do not have an explanation for why it is specifically *first* that allows this reading, as opposed to other cardinals like *two* or *three*.

ties. To my knowledge, only Sandoval, Greeson, and Morzycki (2022, 2023) have investigated this phenomenon. Consider the example below:

(124) Clyde plays good guitar.
$\sim$ 'Clyde plays the guitar well.'

Like we saw for *occasional*-type FAs and *first*, there is an "adverbial" flavor to the use of *good* in this context. Sandoval et al. (2023) emphasize that this reading of *good* can only arise when the noun phrase it is contained is a bare singular. One cannot use a numeral and get the same kind of reading:

(125) Clyde plays one good guitar.
$\not\sim$ 'Clyde plays one guitar well.'
$\sim$ 'There is one (unique) guitar that Clyde plays, and that guitar is good.'

This is again reminiscent of the data used by proponents of the quantificational approach to *occasional*-type FAs, with the argument that a numeral cannot be added because there is a clash between two quantifiers.

Sandoval et al. (2023) also point out that the bare singular form of instrument noun phrases makes the noun phrase easily interpreted as eventive, as opposed to the bare plural or definite singular:

(126)
a. Piano emerged from the orchestra. EVENTIVE
b. Pianos emerged from the orchestra. NOT EVENTIVE
c. The piano emerged from the orchestra. NOT EVENTIVE
d. Drums emerged from the orchestra. NOT EVENTIVE
(Sandoval et al., 2023, p. 9)

This fact leads Sandoval et al. (2023) to the conclusion that Num contains a nonovert event kind, with kinds being implemented in the sense of Chierchia (1998b). This event is interpreted as the playing of an instrument:

(127) [[EVENT]] = $\lambda P_{\langle e,t\rangle} . {}^{\cap}[\lambda e . \exists x^0$ [e is an event of playing $x^0 \wedge P(x^0)$]]
(Sandoval et al., 2023, p. 9)

Sandoval et al.'s (2023) arguments for the existence of a nonovert event are strong and well-justified. I believe that their event can be assimilated into what I call Vehicle. However, using Vehicle instead of EVENT entails that the nonovert event makes up a head separate from Num. Unfortunately, since Vehicle/EVENT is nonovert, there is no way to empirically test whether it is represented by Num. Under my approach, *one good guitar* does not work because, if *good* is modifying Vehicle, then the Num has to be above Vehicle. The numeral then is not able to reach the entity *guitar* from inside the vehicle situation. Under Sandoval et al.'s (2023) approach, it does not work because a numeral and EVENT cannot both take up Num. Still, there are a couple of other reasons to prefer Vehicle over the event just presented.

I have a few problems with the theoretical implications of Sandoval et al.'s (2023) proposal. One problem is that it is unclear how one can justify the claim that an event can be a determiner. This idea is not elaborated on in the proposal, and I have not yet seen an argument for this possibility elsewhere. I also question the applicability of this nonovert event to other contexts. My vehicle event is heavily underspecified and can be used in any setting where an "eventive" interpretation is involved. Having a dedicated head that can optionally be inserted also helps explain why, in the case of *occasional*-type FAs, numerals can in fact be used alongside the nonovert event. Sandoval et al. (2023) emphasize the uniqueness of situations involving instruments and use the following minimal pair:

(128) a. There was piano in that performance.
piano = piano playing
b. There was hair in that cosmetics class.
hair $\neq$ hair-cutting
(Sandoval et al., 2023, p. 6)

I can imagine two reasons for this contrast. The first reason might be that pianos are so heavily connected to the sound they make as a result of people playing them, while hair can be associated with many different events, even within the context of a cosmetics class. The second reason, which I believe may be stronger, is that *hair* is a mass noun and therefore is expected to be

unmarked, as it does not have the option of taking an indefinite article or the *-s* suffix. When *piano* is in the bare singular form, it can more easily be coerced into an event of playing the piano. One can in fact imagine a setting in which *hair* refers to a hair-related event. The sentence below can be uttered in a setting where the cosmetics department at a movie set is preparing an actor for a scene:

(129) I've done their lashes but there is still hair left.
$\sim$ 'I have applied eyelashes, but I have not yet styled their hair.'

A more general nonovert event therefore serves us well, and I believe Vehicle can perform this role.

One kind of adjective that I should address is *average*, which has previously been compared to *occasional*-type FAs (Carlson & Pelletier, 2002; Kennedy & Stanley, 2008, 2009; Morzycki, 2016, 2021):

(130) The average American has 2.3 children.
$\sim$ 'On average, an American has 2.3 children.'

Average is not satisfied with just modifying its sister noun *American*. This is made especially clear with *2.3 children*: *American* does not refer to a unique individual, and if it did, no individual *American* can have *2.3 children*, because humans are not divisible into fractions. As is the case for *occasional*-type FAs, *average* has been argued to be part of a complex quantifier together with *the* (Kennedy & Stanley, 2008, 2009; Morzycki, 2016, 2021). I do not believe that Vehicle specifically can explain this phenomenon on its own: if a KIP *American* is dominated by Vehicle and v, like I argued was the case for the *occasional sailor* example, we would expect *2.3 children* to refer to two whole children and 0.3 of a third one. The approaches to *average* in the past have taken seriously the mathematics behind averages – it may be fruitful to consider averages in combination with the multidominance framework I used in this chapter, but I will not speculate further on this.

To summarize, I believe that the existence of Vehicle can explain a number of related phenomena, though there are limits. The cases of *first* and

good, however, show us that a nonovert event operator is a helpful tool we use effortlessly as speakers of a language. The next chapter will provide another phenomenon that can be explained with the possible insertion of Vehicle in the nominal syntactic spine.

3.7 Conclusion

The main questions leading this investigation were:

1. In the sentence *The occasional sailor strolled by*, how do we end up with the intuition that the verbal event of strolling-by is pluralized?

2. How do we unify all cases of modification by *occasional*-type FAs? That is, what kind of analysis of *occasional*-type FAs can also cover sentences like *The odd glass of wine is good for you* just as well as *The odd downdraft is nice on a hot summer day*?

3. What do *occasional*-type FAs modify, and what is their semantic contribution?

4. Why do these sentences always involve a stage component?

These questions have been investigated one by one, and we end up with a final analysis that I believe provides satisfying answers and predictions. The strangeness of these sentences can be attributed to three main elements: 1) The pluractionality comes from the set of events presupposed by the *occasional*-type FA; 2) The stage-level reading comes from the presence of a vehicle event, which functions independently of the kind-to-object transformation provided by NM; 3) These adjectives are *not* quantificational, but the verbal event can optionally dominate KIP, resulting in an "illusion" of pluractionality in the verbal event. I have presented the idea that *occasional*-type FAs modify an event in the noun phrase structure. This event either comes in the form of an eventive noun like *inspection*, or it is a nonovert, coercive event that is added to an entity noun to satisfy the FA. In any case,

the adjective picks out an event, creates a set of events of that type and distributes the members of this set sparsely, within a spatiotemporal dimension.

One of the main findings in the chapter is the existence of a coercive "vehicle" event, which can explain a number of facts about these constructions, such as numeral placement, adjective ordering and the ban on the predicative usage of *occasional*-type FAs.[41] I have also shown how Vehicle can be used for other contexts, such as the adjectives *first* and *good* with instruments. This nonovert event is particularly intriguing in the discussion of whether stages are ontologically different from individuals, and if they are, how they are formed. Vehicle provides a natural way to interpret stages as event-centered without making the statement that there is an operator whose *only* purpose is stage formation – Vehicle merely provides the event through which we observe an individual.

The discovery of vehicle event as a *literal* head and operator is perhaps the opposite of what we would expect after the findings of the previous chapter. I concluded then that what we call "grinding" and "portioning" are

[41] There is tense-oriented data that may also be explainable using Vehicle. The English example below shows the use of past tense where one might expect the future tense:

(i) What time did the train leave, again? I wouldn't want to miss it.
→ The train has not yet left.

The past tense of *do* here does not refer to the time of the train leaving, but rather some unspoken event of the speaker checking the time of departure. A similar phenomenon can be found in Norwegian, in which the past tense can be used even more liberally. The following sentence can be produced by a person who has *just* unwrapped a present and is still holding it:

(ii) *Dette var ei fin gåve!*
this was a nice gift
'This is a nice gift!'

The past tense can be described as referring to the (very recent) first impression from seeing the gift. It is outside the focus of this chapter to currently offer a way to implement Vehicle to explain why the past tense works in these examples, but it may be helpful to consider Vehicle when approaching the data.

not the result of any formal operators changing an inherent atomicity value. The question then was whether nonovert coercion is always an extrasyntactic process. This chapter shows that we cannot generalize coercion, i.e. the change of meaning of an expression without overtly adding or subtracting anything, as being *either* pragmatic *or* in the syntax and semantics. In the following chapter, I will continue to explore Vehicle and its syntactic properties, specifically using agreement to show further support of the presence of this event.

Chapter 4

Agreement and coercion: pancake sentences

4.1 Introduction

Upon discovering Vehicle, we may ask how it works in other languages and whether its existence can be empirically validated in other situations. I wish to do this by returning to the Mainland Scandinavian agreement system. Within my investigation, I will also show the benefit of using a determiner phrase structure that uses a kind phrase as its basis. Before presenting the data in focus in the chapter, I will summarize my main findings from the previous chapters.

In Chapter 2, I investigated data from Mainland Scandinavian relating to coerced changes in atomicity value (through grinding or portioning), and its relationship with grammatical gender. I showed that, while common/masculine/feminine-gendered nouns are underspecified for atomicity, neuter nouns are rigid in their atomicity value. I argued that gender and atomicity are both features that can be located on the Noun Marker (NM) head. These two features are in complementary distribution, and my proposal was that common/masculine/feminine nouns have a gender feature in NM, while neuter nouns have an atomicity feature in NM. The fixed atomicity value in the neuter noun's NM makes grinding or portioning im-

possible. I showed that the neuter form shows up when there is no ±FEM feature present to agree with, either because NM contains another feature, or because there is no NM at all. When an adjective needs to agree with such constituents, the neuter form appears.

In Chapter 3, I investigated the English adjectives *occasional*, *odd* and *rare*. I argued that *occasional*-type FAs must modify events, and that when the noun itself does not provide this event, a nonovert, context-based one can be inserted to coerce the entity into an event relating to it. The insertion of this vehicle event explains the emergence of a pluractional reading in these sentences, as well as the possibility to use event-modifying predicate adjectives such as *be good for you* to describe a subject containing the FA. When inserted, Vehicle overrides the entity that the nominal standardly denotes. Considering the conclusion I made that the Mainland Scandinavian neuter "gender" is actually the lack of gender, my prediction is that when Vehicle is added to a nominal structure, it triggers neuter agreement.

The purpose of this chapter is to present one case study from Mainland Scandinavian that shows how my proposals can explain other phenomena. This case is particularly relevant in that it touches upon the facts we uncovered relating to both the Mainland Scandinavian nominal projection and nonovert, noun phrase-internal events. I will look into what are called "pancake sentences", which are characterized as copular sentences in which a predicative adjective does not seem to agree with the subject noun phrase. In subsection 2.4.1.3 in Chapter 2, I explained that Mainland Scandinavian, in my case Norwegian, standardly shows agreement on predicative adjectives according to the number and "gender" of the subject. Usually, the masculine and feminine inflection forms overlap, and the plural forms overlap for all genders:

(1) a. *Guten* *er* *pen.* *Gutane*
boy.SG.MASC.DEF be.PRES pretty.SG.MASC boy.PL.MASC.DEF
er *pen-e.*
be.PRES pretty-PL.MASC
'The boy is pretty. The boys are pretty.'

b. *Jenta* *er* *pen.* *Jentene*
girl.SG.FEM.DEF be.PRES pretty.SG.FEM girl.PL.FEM.DEF
er *pen-e.*
be.PRES pretty-PL.FEM
'The girl is pretty. The girls are pretty.'

c. *Huset* *er* *pen-t.*
house.SG.NEUT.DEF be.PRES pretty.SG.NEUT
Husa *er* *pen-e.*
house.PL.NEUT.DEF be.PRES pretty-PL.NEUT
'The house is pretty. The houses are pretty.'

However, sometimes the predicative adjective seems to not agree with the subject, and in these cases, the adjective is specifically in the singular neuter form, visible by the characteristic *-t* suffix. There are two different situations where pancake sentences can occur: when the subject is an unmarked noun, such as a mass noun or proper noun; and when the subject seems eventive in nature. Below are examples of each type:

(2) *Snø* *er* **kvit* */ kvit-t.*
snow.SG.MASC be.PRES white.SG.MASC / white-SG.NEUT
'Snow (as a substance) is white.'

(3) *Pannekaker* *er* *rask-t.*
pancake.PL.FEM be.PRES fast-SG.NEUT
'Making/eating/V-ing pancakes is fast.'

The relevant event in the translation of (3) is heavily context-dependent, since it is nonovert in the structure. I have used *making/eating* as suggestions, but context can in principle give grounds for any event. Although tomatoes are not primarily associated with throwing, this is the event that we gather is referred to in the second sentence below:

(4) *Ein burde ikkje kasta ting på folk. Men med nokre politikarar*
one should not throw things at people but with some politicians
er *ikkje tomatar* *så grusam-t.*
be.PRES not tomato.PL.MASC so terrible-SG.NEUT
'You shouldn't throw things at people. But for certain politicians, throwing tomatoes at them would not be so terrible.'

The questions we are led to are how these sentences work and why it is specifically the singular neuter agreement that appears. I believe that once we accept the conclusions made so far in the thesis, the answer comes naturally. I will show that pancake sentences do not make up one uniform class, since the subjects of these sentences are inherently different (also argued by Josefsson 2006, 2009, 2014). However, the appearance of the neuter form in both cases comes from the fact that neuter agreement is actually the lack of agreement with a gender feature.

Much of the background for the investigation builds on the theory presented in previous chapters, but some new data and approaches will be considered. The structure of the chapter is as follows: in section 4.2, I present the data, covering the two different readings separately. In section 4.3, I address the ways that pancake sentences have previously been argued to work, where they excel and how they may be adjusted to fit into one final approach to the source of neuter agreement. In section 4.4, I present my proposal. Section 4.5 concludes the chapter.

4.2 Data

I will go through the two readings separately. I use different labels depending on the kind of subject that triggers neuter agreement in the adjective, instead of the too generic term "pancake agreement": 1) unmarked NP agreement, and 2) event NP agreement. I will also comment on other languages, providing further support for treating Mainland Scandinavian "pancake sentences" as two phenomena instead of one. The majority of the data will be drawn from Norwegian, though I provide examples from Danish and Swedish as well. Unless otherwise specified, the examples are in Norwegian.

4.2.1 Unmarked noun phrase agreement

"Unmarked noun phrase agreement" is so named because it involves the modification of a noun that is not accompanied by a determiner. I will here

focus on unmarked mass nouns and proper nouns. When a subject fits that description, the predicative adjective *must* be in the singular neuter form. Below are examples from Norwegian:

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

(6) a. *Los Angeles er stor-t nok til å gi deg*
Los Angeles be.PRES big-SG.NEUT enough to.P to give you
mange gode opplevelser.
many good experiences
'Los Angeles (as a city) is big enough to give you many good experiences.'[1]

b. *Januar er kald-t*
January be.PRES cold-SG.NEUT
'January is cold.'[2]

In the sentences above, it is clear that the adjectives *kvitt* 'white', *stort* 'big' and *kaldt* 'cold' directly refer to a property of the subject entity. Moving forward, my main focus will be on mass nouns, to create more direct minimal pairs with the case of *event* noun phrase agreement.

The "lack of agreement" that we see in pancake sentences only appears on predicative adjectives. Attributive adjectives must agree with the noun:

(7) *kvit / *kvit-t snø*
white.SG.MASC / white.SG.NEUT snow.MASC
'white snow'

If the mass noun is the head of a copular relative clause, the predicative adjective must agree with the noun:

(8) *Eg føretrekker [snø som er kvit /*
I prefer.PRES snow.MASC which be.PRES white.SG.MASC /
**kvit-t].*
white-SG.NEUT

[1] `https://www.seevancouverbc.com/`, last accessed 20 October 2023.
[2] `https://supermygg.no/telttur-i-januarkulde/`, last accessed 20 October 2023.

'I prefer snow that is white.'

When the mass noun is definite, or if it is modified by an attributive adjective, the predicative adjective must agree with the subject:[3]

(9) a. *Snøen er kvit / *kvit-t.*
snow.SG.MASC.DEF be.PRES white.SG.MASC / white-SG.NEUT
'The snow is white.'

b. *Nyfallen snø er kvit / *kvit-t.*
new-fallen snow.SG.MASC be.PRES white.SG.MASC / white-SG.NEUT
'Fresh snow is white.'

Overall, the generalization is that when the noun is unmarked, neuter agreement must show up on the predicative adjective.

4.2.2 Event noun phrase agreement

Another kind of pancake sentence is one in which the subject denotes an event. This reading is more complex than that in which the subject is an unmarked noun phrase, requiring a more detailed description. We will however see that the subjects that denote events have obvious similarities to noun phrases containing *occasional*-type FAs. In many cases, the eventive reading comes about through the fact that the noun itself denotes an event.

[3]Enger (2004) disagrees with the judgment in example (9b), providing an example like the following:

(i) *God vodka er sun-t.*
good.MASC vodka.MASC be.PRES healthy-SG.NEUT
'Good vodka is healthy.'
(Enger, 2004, p. 20)

I object to this example, with more data than just my own judgment. In addition to the native Norwegian speakers that I have informally consulted, a preliminary acceptability judgment study of Swedish by Klingvall, Beijer, and Heinat (2024) shows that pancake agreement is less likely when an attributive adjective like *skånsk* 'Scanian' is added to a mass noun like *senap* 'mustard'.

Below are some examples from Norwegian Web as Corpus (noWaC; Guevara 2010):

(10) a. *Trening på søndager er fin-t*
working.out.FEM on Sundays be.PRES nice-SG.NEUT
'Working out on Sundays is nice.'[4]

b. *Våre erfaringer med digitale mapper er*
our experience.PL.FEM with digital folder.PL.FEM be.PRES
ubetinget positiv-t
unconditionally positive-SG.NEUT
'Our experiences with digital folders are unequivocally positive.'[5]

c. *Økte forskningsbevilgninger er lite*
increased.PL research.grant.PL.FEM be.PRES not.very
virkningsfull-t
effective-SG.NEUT
'To increase research grants is not very effective.'[6]

In other sentences, the event is not overtly visible in the noun, but it is implied. In the Swedish sentences below, *två älskare* 'two lovers' refers to an event relating to lovers, not the lover entities themselves:

(11) *Två älskare är omoralisk-t.*
two lover.PL.COMMON be.PRES immoral-SG.NEUT
'To have two lovers is immoral.'
(Swedish; Josefsson 2014, p. 66)

Eventive NPs distinguish themselves from unmarked NPs in that they can contain event-related adverbials, such at *hver dag* 'every day':

(12) *En til to turer hver dag er for lite for*
one to two walk.PL.MASC every day be.PRES too little.SG.NEUT for
en frisk, fullvoksen hund.
a healthy full-grown dog

[4]noWaC corpus, #56139
[5]noWaC corpus, #199142
[6]noWaC corpus, #137228

'(Going for) one to two walks per day is too little for a healthy, full-grown dog.'[7]

The ability to modify the noun phrase using *hver dag* 'every day' is a strong sign that there is a nonovert event in the noun phrase. We also see that these subjects cannot be modified by an adjective that is obviously entity-denoting, such as *gult* 'yellow' (pointed out by Faarlund 1977):

(13) a. *Pannekaker er gul-e / *gul-t.*
pancake.PL.FEM be.PRES yellow.PL.FEM / yellow-SG.NEUT
'Pancakes are yellow.'

b. *Bøker er tjukk-e / *tjuk-t.*
book.PL.FEM be.PRES thick-PL.FEM / thick-SG.NEUT
'Books are thick.'

c. *Ei drosje er stor / *stor-t.*
a.SG.FEM taxi.SG.FEM be.PRES big-SG.FEM / big-SG.NEUT
'A taxi is big.'
(Faarlund, 1977, p. 240)

We further see a semantic contrast between sentences with an agreeing adjective and those with an adjective that shows the singular neuter "pancake" agreement, where the former conveys the property of an entity kind while the latter modifies an event. We can test this by using a verb phrase that can only be used in generic sentences, such as *vera vill* 'be wild' (Krifka et al., 1995):

(14) *Vaskebjørnar er ville.*
raccoon.PL.MASC be.PRES wild.PL.MASC
✓'Raccoons are wild.'
X 'Getting (or some other event) a raccoon would be a wild idea.'

(15) *Vaskebjørnar er vil-t.*
raccoon.PL.MASC be.PRES wild-SG.NEUT
X 'Raccoons are wild.'
✓'Getting (or some other event) a raccoon would be a wild idea.'

[7] `https://www.nkk.no/aktuelt/hunder-far-for-lite-mosjon-alvorlig-helsetrussel-article209474-985.html`, last accessed 20 October 2023.

One possible objection needs to be addressed. The first mention of pancake sentences includes the following example, which uses the supposedly entity-modifying adjective *godt* 'good':

(16) *Pannekaker er god-t.*
pancake.PL.FEM be.PRES good-SG.NEUT
'Pancakes are good.'

Considering the unacceptability of *gult* 'yellow' in example (13a), there is reason to doubt that *godt* 'good' truly modifies an entity here. One might think that there is a difference between which type of adjective is used: for example, *gult* 'yellow' applies an objective property to a noun, while *godt* 'good' is more subjective. Testing other adjectives, we see that other subjective, clearly entity-kind-modifying adjectives are equally unacceptable:

(17) **Pannekaker er pen-t / små-tt /*
pancake.PL.FEM be.PRES pretty-SG.NEUT / small-SG.NEUT /
tør-t / mjuk-t.
dry-SG.NEUT / soft-SG.NEUT
Intended: 'Pancakes are pretty/small/dry/soft.'

There is reason to think that *godt* 'good' is deceptive here: instead of denoting the tastiness of the pancakes themselves, it is more likely that it denotes the positive experience of some event involving pancakes. I therefore conclude that *godt* 'good' is here an event-modifying adjective.

To add to this data, I will show a distinction between *raskt* 'fast' and *godt* 'good' on one end and *mjukt* 'soft' on the other. When using an *it*-cleft for the adjective, *godt* 'good' patterns with *raskt* 'fast' in its level of acceptability:

(18) *Det er god-t / rask-t / #mjuk-t med*
it is good-SG.NEUT / good-SG.NEUT / soft-SG.NEUT with
pannekaker.
pancake.PL.FEM
'Making/Eating/V-ing pancakes is good/fast/#soft.'

Event NPs do not have any restriction on whether they are count or mass,

indefinite or definite[8] or singular or plural. This makes these subjects fundamentally different from pancake sentences where the subject is an unmarked noun. Below is one example each of these options, in their respective order:

(19) a. *Pannekaker er rask-t.*
pancake.PL.FEM be.PRES fast-SG.NEUT
'Making/eating/V-ing pancakes is fast.'

b. *Pasta er rask-t.*
pasta.MASC be.PRES fast-SG.NEUT
'Making/eating/?-ing pasta is fast.'

(20) a. *Ein investering er samfunnsøkonomisk*
an investment.SG.FEM be.PRES socio-economically
lønnsam-t.
beneficial-SG.NEUT
'An investment is socio-economically beneficial.'

b. *investeringen er samfunnsøkonomisk*
investment.SG.MASC.DEF be.PRES socio-economically
lønnsom-t
beneficial.SG.NEUT
'The investment is socio-economically beneficial.'
(noWaC, #290932)

(21) *Tidlege investeringar er samfunnsøkonomisk*
early.PL investment.PL.FEM be.PRES socio-economically
lønnsam-t.
beneficial.SG.NEUT
'Early investments are socio-economically beneficial.'

The event reading is also available when the pancake subject contains a numeral:

(22) *Eg var ikkje så svolten, men to pannekaker til frukost*
I be.PAST not that hungry but two pancake.PL.FEM for breakfast

[8]There is cross-speaker variation here. There is generally a higher need for appropriate context when the noun phrase is definite, but it is still possible once the relevant context has been established.

var faktisk lur-t / #lur-e.
be.past actually clever-SG.NEUT / clever-PL.FEM
'I was not that hungry, but (eating) two pancakes for breakfast was actually a good idea.'

Like for unmarked NPs, we also get event NP agreement with proper nouns. Below are examples including the place name *Oslo* and the month *januar* 'January':

(23) a. *Jeg er veldig introvert og jeg synes Oslo er*
I be.PRES very introverted and I think Oslo be.PRES
slitsom-t.
tiresome-SG.NEUT
'I am introverted, and I think Oslo is a tiresome city to be in or do things in.'[9]

b. *Jeg synes januar er slitsom-t når det gjelder*
I think January be.PRES tiresome-SG.NEUT when it is.about
været.
weather.DEF
'I think some event involving January (e.g. spending so much time indoors in the cold) is tiresome when it comes to the weather.'[10]

When an attributive adjective like *rask* 'fast' is used, the adjective must agree with the noun, even though "fast" is in principle a modifier that could be used to describe an event:

(24) a. *raske / *rask-t pannekaker*
fast.PL.FEM / fast-SG.NEUT pancake.PL.FEM
→ fast pancakes

b. *dei raske / *rask-t pannekakene*
the fast.PL.FEM.DEF / fast-SG.NEUT pancake.PL.FEM.DEF
→ the fast pancakes

[9] https://forum.kvinneguiden.no/topic/1077635-passer-oslo-for-introverte/page/2/, last accessed 20 October 2023.

[10] https://birgittahoglundsmat.wordpress.com/2011/01/06/glutenfri-ost-och-skinkpaj-som-fardkost/, last accessed 20 October 2023.

These noun phrases are ambiguous between *raske* 'fast' modifying a pancake kind, i.e. that the pancakes somehow move fast, or modifying the situation of making/eating/V-ing them. An example of the adjective modifying a situation, even though it agrees with the number and gender of the noun:

(25) *Me tenkte pannekaker ville gå raskt. Dei "raske"*
we thought pancakes would go fast the fast.PL.FEM.DEF
pannekakene tok oss ein time å steika.
pancake.PL.FEM.DEF took us an hour to cook
'We thought pancakes would be fast. The "fast" pancakes (i.e., the pancakes that were supposed to be fast to make) took us an hour to cook.'

If the predicative adjective is in a relative clause, the adjective agrees:

(26) *Me kjøpte [pannekaker som var ekstra raske / *rask-t].*
we bought pancake.PL.FEM which be.PAST extra fast.PL.FEM / fast.SG.NEUT
'We bought pancakes that were extra fast (e.g. to make).'

That concludes my summary of the pieces of data that are most necessary to find the correct solution.

4.2.3 Crosslinguistic support for a split between unmarked NP agreement and event NP agreement

There is also crosslinguistic data to suggest a split between event NP agreement and unmarked NP agreement. Out of the languages I have checked,[11] some languages show event NP agreement, but none show unmarked NP agreement. Martin et al. (2020) report that French has pancake sentences but only give examples of event NP agreement:

[11]Brazilian Portuguese, Danish, Dutch, English, French, German, Hungarian, Lithuanian, Norwegian, Russian, Swedish

(27) a. *Les étudiants, c'est chouette !*
the student.3.PL it's.3.SG fun
'Some situation involving students (e.g. supervising them) is fun.'
(French; Martin et al. 2020)

In French, the pancake agreement is only visible by the fact that the verb shows singular number inflection.

In Brazilian Portuguese, the pancake reading is visible both through the singular form on the verb and the singular masculine form on the adjective.

(28) *Crianças é divertido.*
child.PL.FEM be.3.SG.PRES fun.SG.MASC
'Some situation involving children, e.g. playing with children/taking care of them, is fun.'
(Brazilian Portuguese; Martin et al. 2020)

However, the adjective takes the agreeing form when the subject is an indefinite mass noun, instead of pancake agreement, which would be the singular masculine form:

(29) *Neve é branca / *branco.*
snow.FEM be.SG.PRES white.SG.FEM / white.SG.MASC
'Snow is white.'
(Brazilian Portuguese)

German and Dutch also have event NP agreement. While predicative adjectives do not agree with their subject, the 3rd person singular form on the verb reveals that there might be some nonovert event present in the subject:

(30) *Palatschinken geht schnell.*
pancake.PL.FEM go.3SG.PRES quickly
'Some situation involving pancakes is fast.'
(German)

(31) *Pannenkoeken is (lekker) snel.*
pancake.PL.COMMON be.3SG.PRES really fast
'Some situation involving pancakes is fast.'

(Dutch)

Russian and Lithuanian also have event NP agreement. For both of these, it is the singular neuter form on the adjective that signals the presence of a nonovert event:

(32) *Bliny - eto bystro.*
pancake.PL this fast.NEUT
'Some situation involving pancakes is fast.'
(Russian)

(33) a. *Blynai yra sveik-a / #-ì / *-os.*
pancakes.MASC are healthy-NEUT / #-MASC / *-FEM
'Pancakes are healthy (to eat).'

b. Blynai yra sveik-ì / #-a / *-os.
pancakes.MASC are healthy-MASC/-NEUT/*-FEM
'These pancakes are in a healthy state (i.e. they have not been ripped apart).'
(Lithuanian; Adamson and Šereikaitė 2019, p. 11)

(34) a. *Trumpos kojinės yra gražù / #-ios / *-ūs.*
short.FEM socks.FEM are nice-NEUT / #-FEM / *-MASC
'Short socks are nice (to wear).'

b. *Trumpos kojinės yra graž-ios / *-ūs / #-ù.*
short.FEM socks.FEM are nice-FEM / *-MASC / #-NEUT
'These short socks are nice (i.e. they have nice qualities).'
(Lithuanian; Adamson and Šereikaitė 2019, p. 11)

English does not seem to have pancake sentences:[12]

(35) *Pancakes is fast.

[12]There are some cases in English where the subject noun phrase is interpreted as an event and where singular inflection shows up on the verb:

(i) An apple a day keeps the doctor away.
∼ 'Some situation relating to an apple a day (e.g. eating one) keeps the doctor away.'

This is however only possible in a few cases.

While it is possible for native speakers of English to utter the sentence using the plural verb form *are*, this is not indicative of the same phenomenon. By using *is*, I am testing whether *pancakes* is treated as a nonovert event and not just a plural entity.

Pancake sentences are not an Indo-European quirk. Below is an example from Hungarian, where the clue to the eventive reading is in the verb. The following sentence can be uttered in a context where one has tried multiple options for healing a cold, and some herbs finally do:

(36) *A gyógyfüvek jó ötlet volt.*
the herb.PL good idea was
'(E.g. using) herbs was a good idea.'
(Hungarian)

In Hebrew, we also find event NP agreement:

(37) *ha-samin ze ba'aya*
the-drugs.PL.MASC this.SG.MASC problem
'Drugs are a problem.'
(Hebrew; data originally from Ruth Berman, reported by Corbett 1991, p. 217)

As we can see, event NP agreement is available in many other languages, but across the board my impression is that only Mainland Scandinavian exhibits pancake sentences where the adjective must show certain agreement because the subject is an unmarked noun. For this reason, I will focus on Mainland Scandinavian, but this subsection may inspire more detailed work on pancake sentences in other languages.

4.2.4 Summary

I have laid out the most relevant properties of pancake sentences and made the case that there are actually two different constructions that look like one phenomenon on the surface: unmarked NP agreement, where the adjective agrees with a noun phrase without any overt determiner or other modifiers,

and event NP agreement, where the subject noun phrase denotes an event. I assume these two separate categories moving forward. In the following, I will investigate the three main ways in which pancake sentences have been approached in the past, and I will argue that, while all three have clear merits that should be taken into consideration, none of them can provide the whole picture.

4.3 Earlier work

The different approaches to pancake sentences are reminiscent of what we have seen for the data in the previous chapters. However, because of the illusion of uniformity for all these cases of unexpected adjectival agreement, the contributions to the literature in practice either try to explain *either* unmarked NP agreement *or* event NP agreement, or they make nonstandard assumptions that do not appropriately fit the data, leaving us with an incomplete explanation of "pancake" constructions. Previous research can be split into three main categories:

1. *Event approach*: pancake subjects are underlyingly events (Faarlund 1977; Hellan 1986; Martin et al. 2020, in some sense Josefsson 1999, 2006, 2009, 2014)

2. *Semantic agreement approach*: pancake subjects are kind- or mass-denoting entities (Enger, 2004, 2013; Haugen & Enger, 2019)

3. *Classifier approach*: pancake subjects that denote a mass are headed by a nonovert classifier *det* (Josefsson, 1999, 2006, 2009, 2014)

The connection to the previous chapters will become clear. The event approach, in which an event operator is argued to be present in the subject, fits into my idea of the insertion of a vehicle event, which I argued for in Chapter 3. The semantic approach, in which these subjects are merely underspecified, abstract concepts, translates well into my framework in which bare nouns only make up kind phrases. The observations made in the approaches are invaluable once we accept that pancake sentences do not form

a uniform class and that the triggers for the neuter agreement vary slightly in the two types. I will now summarize each approach and discuss both their benefits and where there is room for improvement.

4.3.1 Event approach

One common view is that these subjects contain a nonovert, contextually determined event. They have in some work been argued to be infinitive clauses underneath the surface, and the noun phrase that is visible, e.g. *pannekaker* 'pancakes', is supposedly the internal argument of the unpronounced and semantically underspecified verb (Faarlund, 1977; Josefsson, 1999, 2006, 2009, 2014). Others avoid any syntactic claims and posit a nonovert event operator in the semantics (Martin et al., 2020; Wechsler, 2013). Later I will show that, while some pancake sentences do contain nonovert events, these are not literally *verbs*. Instead, they are the same vehicle events that I introduced in the previous chapter (subsection 3.5). Before going into depth on the specifics of Vehicle in eventive pancake subjects, I will summarize and discuss the existing arguments.

The eventive approach, and particularly the infinitive clause version of it, is motivated by the fact that many of these subject noun phrases can be paraphrased using infinitive clauses. I repeat example (3) below:

(38) *Pannekaker* *er* *rask-t.*
pancake.PL.FEM be.PRES fast-SG.NEUT
'Making/eating/V-ing pancakes is fast.'

According to supporters of the infinitive clause approach, the subject *pannekaker* 'pancakes' is an entire infinitive clause in which *pannekaker* 'pancakes' has the object function. Josefsson (2009), though she does not believe in an across-the-board eventive analysis, argues for an unpronounced light verb in these sentences. One interesting piece of data to support the claim is that pancake subjects can contain bound reflexives, which should refer back to an antecedent. This should show that the subject is a covert infinitive clause, containing a nonovert antecedent to bind the anaphor:

(39) a. *Familjebildning utanför sin klan*
family.establishing.COMMON outside REFL.POSS clan.COMMON
är olaglig-t i Yttre Mongoliet.
be.PRES illegal-SG.NEUT in Outer Mongolia
'The establishing of a family externally to one's clan is illegal in Outer Mongolia.'

b. *Två älskare utöver sin*
two lover.PL.COMMON in.addition.to REFL.POSS
make är omoralsk-t.
husband.COMMON be.PRES immoral-SG.NEUT
'To have two lovers in addition to one's husband is immoral.'
(Swedish; Josefsson 2009, pp. 43–44)

In the semantics, an "infinitive" approach translates to a nonovert event operator semantically selecting e.g. *pannekaker* 'pancakes' as its theme argument. In the previous chapter, I mentioned one such argument: Martin et al. (2020) propose an operator ⊙ that takes two entities, x and y, an event property P and an event e as its arguments. The results are the conditions that e is P, x is the theme of e and y is the agent of e:

(40) DENOTATION AND APPLICATION OF ⊙ OPERATOR

a. $\odot = \lambda x \lambda P \lambda y \lambda e$. P(e) $\wedge$ theme(e,x) $\wedge$ agent(e,y)

b. [[les étudiants$_{\odot}$]]^{c,g,w,t,Sp} = [$\lambda x \lambda P \lambda y \lambda e$. P(e) $\wedge$ theme(e,x) $\wedge$ agent(e,y)](the-students)= (by application)
$\lambda P \lambda y \lambda e$. P(e) $\wedge$ theme(e, the-students) $\wedge$ agent(e,y)
$\rightarrow$ The set of event types that have the students as a theme and an individual y as agent.

c. [[les étudiants]]^{c,g,w,t,Sp}(P$_c$) = (by application)
$\lambda y \lambda e$. P$_c$(e) $\wedge$ theme(e, the-students) $\wedge$ agent(e,y)
$\rightarrow$ The set of events of a contextually retrievable event type P_c that have the students as subject and in sentences that have an infinitival y as agent.
(Martin et al., 2020, p. 18)

One detail I did not add in Chapter 3 is that Martin et al. (2020) differenti-

ate between "generic" pancake sentences and "episodic" ones. According to their reporting, French pancake sentences do not have to refer to a general idea of an event – they can also refer to event particulars. In the sentence below, *les/mes/ces étudiants* 'the/my/these students' can refer to a single event of supervising (or doing something else with) the students:

(41) *(Hier,)* *les/mes/ces* *étudiants,*
yesterday the/my/these.PL.MASC student.PL.MASC
c'était *intéressant.*
DEM=be.3SG.IMPERF interesting.SG.MASC
'(Yesterday,) supervising the/my/these students (or teaching them, or talking with them, or driving them home, or selling them drugs, or...) was interesting.'
(French; Martin et al. 2020, p. 18)

For these cases, an "episodic pancake operator" ⊙ is used instead of the generic one. This operator takes two entities x and y, an even property P and an event argument e The main important difference is that, because *les étudiants* 'the students' now refers to individuated students, the student entity must be selected first:

(42) MARTIN ET AL.'S (2020) EPISODIC PANCAKE OPERATOR

a. ⊙ = λxλPλyλe [P(e) & theme(e,x) & agent(e,y)]

b. [[les étudiants ⊙]]^{c,g,w,t,Sp} = λPλyλe [P(e) & theme(e,the-students) & agent(e,y)]

c. [[les étudiants ⊙]]^{c,g,w,t,Sp}(P$_c$) = λPλyλe [P$_c$(e) & theme(e,the-students) & agent(e,y)]
(Martin et al., 2020, p. 18)

Note that this operator never selects the entity property N. Instead, it first selects the theme argument, then the event P, then the agent and event arguments. I will add that Norwegian also has pancake sentences that are episodic rather than generic:

(43) *Studentane i går, det var kjek-t!*
student.PL.MASC.DEF yesterday that be.PAST fun-SG.NEUT
'Supervising (or some other event) the students yesterday, that was fun!'

I will briefly suggest an explanation for the generic/episodic distinction in the proposal.

Additionally, according to Martin et al.'s (2020) approach, the complete pancake reading can only be triggered via an experiencer adjective, which establishes the subjective observer of the event. I argued in Chapter 3 that, for data involving *occasional*-type FAs, the ◎ operator is inadequate because experiencing ends up being external to the event itself. In addition, naming it "experiencing" is too specific for an underspecified, nonovert event like the one we see here. In Norwegian, pancake sentences do not require an experiencer, or even an evaluative adjective. We see this by the fact that adjectives such as *straffbart* 'punishable' can be used:

(44) *Sigarettar i skuleområdet er straffbar-t.*
cigarette.PL.MASC in school.area.DEF be.PRES punishable-SG.NEUT
'Smoking (or some other contextually salient event) cigarettes in the school area is punishable.'

My argument still stands that, instead of using experiencers, or any version of the nonovert event presented in Chapter 3, a better option is to make use of the idea of a vehicle event, which we needed for the case of modification by *occasional* in English. The vehicle event that I presented is more general and abstract enough to cover both kinds of cases. I will show how Vehicle can be used in section 4.4.

One problem with the event approach is, quite simply, that some pancake subjects *do* refer to entities, meaning that not all instances of "pancake agreement" come from the presence of a nonovert event. Martin et al. (2020) only consider pancake sentences in which the subject denotes an event. This makes sense because they focus on French and Brazilian Portuguese, which only have eventive pancake sentences. In Norwegian, however, not all pancake sentences are eventive in nature, as we have already seen. For example,

in the sentences below, the subjects cannot be paraphrased with an eventive meaning:

(45) *Snø er kvit-t.*
snow.SG.MASC be.PRES white-SG.NEUT
'Snow is white.'
NOT: '#V-ing snow is white.' (nonsensical)

(46) *Los Angeles er stor-t nok til å gi deg mange gode opplevelser.*
Los Angeles be.PRES big-SG.NEUT enough to.P to give you many good experiences
'Los Angeles (as a city) is big enough to give you many good experiences.'
NOT: '#V-ing Los Angeles is big enough ...' (nonsensical)

The adjectives *kvitt* 'white' and *stort* 'big' are strictly modifiers of entities, which an eventive approach would predict to be banned.

We also see that, while eventive pancake sentences can include reflexive anaphors in their subjects, this is not the case for those in which the subject denotes an entity:

(47) **Blommor från sitt hemland doftar*
flower.PL.COMMON from REFL.POSS homeland smell.PRES
underbar-t.
wonderful-SG.NEUT
Intended meaning: 'Flowers from a person's homeland smell wonderful.'
(Swedish; Josefsson 2009, p. 44)

This shows that there cannot be an event in the subject noun phrase structure in these sentences. An analysis that treats all these cases as eventive will thus leave out a large portion of pancake sentences. I will argue later that entity pancake sentences and event pancake sentences are fundamentally different, and that the reason why Norwegian unmarked NP subjects follow the same pattern is due to the nature of the singular neuter form rather than the presence of coercive content.

In terms of the syntax, it is unlikely that pancake subjects, even the ones that denote events, do not literally translate into a hidden infinitive clause. Wechsler (2013) points out that the noun phrases that have eventive NPs do not show up in a number of cases where an infinitive clause would be acceptable. I will provide his examples below, which have been taken from Swedish, but Norwegian shares these judgments. First, pancake subjects cannot be postposed:

(48) **Det är omoralskt två älskare.*
it is immoral.SG.NEUT two lover.PL.COMMON
Intended: '(Having) two lovers is immoral.'
(Swedish; Wechsler 2013)

Secondly, verbs like *fortsätta* 'continue' cannot select event NPs:

(49) a. *Jag fortsatt (att) äta pannkakor.*
I continued (to) eat pancake.PL.COMMON
'I continued eating pancakes.'

b. **Jag fortsatt pannkakor.*
I continued pancake.PL.COMMON
Intended: 'I continued eating pancakes.'
(Swedish)

Thirdly, verbs like *villig* 'willing' accept verbal complements but not pancake subjects:

(50) a. *Jag är villig att äta pannkakor.*
I be.pres willing to eat pancake.PL.COMMON
'I am willing to eat pancakes.'

b. **Jag är villig pannkakor.*
I be.pres willing pancakes
Intended: 'I am willing to eat pancakes.'
(Swedish)

Finally, modal auxiliaries that select verbal complements, such as *kunna* 'be able to', cannot take event NPs:

(51) a. *Jag kan inte äta pannkakor.*
I can not eat pancake.PL.COMMON
'I can't eat pancakes.'

b. **Jag kan inte pannkakor.*
I can not pancake.PL.COMMON
Intended: 'I can't eat pancakes.'
(Swedish)

Saying that event NPs are *literally* infinitive clauses is therefore too simplistic a claim. Wechsler (2013) uses these data points to argue that the pancake reading comes from coercion. This is a promising claim that I will adapt to my own framework and conclusions so far.

To summarize, the eventive approach attempts to explain the intuition that pancake subjects sometimes denote events. There is however a large proportion of pancake sentences in Norwegian where this is *not* the case, and these need to be accounted for. Also, although an event is involved, it would also be undesirable to claim that these subjects can make up an entire infinitive clause, since they do not show the same distribution. This fact fits in neatly with the vehicle event I have proposed before: the event is located within the noun phrase, and the noun phrase does end up denoting an event, but this event is syntactically speaking not a verb.

I will now turn to an alternative proposal, namely one in which the neuter agreement is the result of the lack of individuation in the syntax (most notably argued by Enger 2004, 2013; Haugen and Enger 2019).

4.3.2 Semantic agreement approach

Another view is that pancake subjects make up nonspecific entities (Enger, 2004, 2013; Haugen & Enger, 2019), which I will take to mean that these noun phrases are only KIPs. In the classic example sentence, according to this view, *pannekaker* 'pancakes' refers to a pancake kind. Enger (2004) refers to the "individuation hierarchy" (Sasse, 1993). The higher an entity is on the scale, the more likely it is to be able to end up with so-called "semantic agreement".

(52) INDIVIDUATION HIERARCHY
proper names > humans > animals > inanimate concrete things > abstracts > mass nouns
(Sasse, 1993)

In Norwegian, pancake sentences are found when the subjects are mass nouns and, in the term used by Enger (2004, 2013) and Haugen and Enger (2019), "abstracts", which include kind-level entities. In Norwegian, the agreement form that shows up when an entity is low on the individuation hierarchy is singular neuter.[13]

Haugen and Enger (2019) explain the eventive reading by appealing to the idea that infinitive clauses are also ungrounded: they are not anchored in time, and they do not refer to a specific event. They can then unite the "infinitive" reading with eventive nouns, because they believe that the form of eventive nouns generally comes from infinitive clauses.

(53) *Investeringar* *er* *lur-t.*
investment.FEM.PL be.PRES clever-SG.NEUT
'Investing is a good idea.'

Enger (2004, 2013) and Haugen and Enger (2019) think that a lack-of-individuation requirement for pancake sentences explains why human proper name subjects do not cause pancake agreement. This can be seen in all forms, specifically pronouns, proper names and common nouns. Josefsson (2014) reports that in Swedish, the event reading can come about with pronouns in the accusative form, but based on my informal Swedish informants, and my Norwegian judgments,[14] I will assume that pronouns are unacceptable, regardless of whether the subject refers to an entity or an event. We see that human proper names are impossible to use as the subject of pancake sentences:

[13]Josefsson (2009), following Teleman (1987), makes a similar kind of comment, though she believes this "semantic" gender to be restricted to pronouns only.

[14]I admit the possibility that judgments could differ across Mainland Scandinavian.

(54) a. *Jens er pen / *pen-t.*
Jens be.PRES pretty.SG.MASC / pretty-SG.NEUT
'Jens is pretty.'

b. *Helene tok lang tid, men Jens var rask / *rask-t.*
Helene took long time but Jens be.PAST fast.SG.MASC / fast-SG.NEUT
'Some situation involving Helene (e.g. supervising her) took a long time, but the same situation involving Jens was fast.'

Even human-denoting common nouns are unacceptable with pancake agreement:

(55) a. *Guten er pen / *pen-t.*
boy.SG.MASC.DEF be.PRES pretty.SG.MASC / pretty-SG.NEUT
'The boy is pretty.'

b. *Jenta tok lang tid, men guten var rask / *rask-t.*
girl.SG.FEM.DEF took long time but boy.boy.SG.MASC.DEF be.PAST fast.SG.MASC / fast-SG.NEUT
'Some situation involving the girl (e.g. supervising her) took a long time, but the same situation involving the boy was fast.'

c. *Jenter tok lang tid, men gutar var raske / *rask-t.*
girl.PL.FEM took long time but boy.PL.MASC be.PAST fast.PL.MASC / fast-SG.NEUT
'Some situation involving girls (e.g. supervising them) took a long time, but the same situation involving boys was fast.'

d. *Jentene tok lang tid, men gutane var raske / *rask-t.*
girl-PL.FEM.DEF took long time but boy-PL.MASC.DEF be.PAST fast.PL.MASC / fast-SG.NEUT
'Some situation involving the girls (e.g. supervising them) took a long time, but the same situation involving the boys was fast.'

There is in principle nothing that makes pronouns, proper names and human common nouns *syntactically* different from other common noun phrases.

Why do we see this distinction? The pattern, according to this approach, seems to fit with Sasse's (1993) individuation scale: proper names are higher on the individuation scale than objects are, so they tend to be more restrictive in terms of agreement. The semantic agreement approach takes lack of uniqueness or specificity into account in a way that is intuitively satisfying for pancake subjects that denote a mass. One obstacle to the approach is that not all pancake subjects are low on the individuation scale. If entity and eventive pancake subjects are essentially the same in referring to "ungrounded" kinds (Enger, 2004, 2013; Haugen & Enger, 2019), we would expect the overt noun phrase making up the pancake subject to never refer to any unique or conversationally salient entity. I have three pieces of data that counter such a generalization, namely the acceptability of: 1) definite noun phrases; 2) numerals; 3) proper nouns. Much of the data used is repetition from section 4.2.

Typically in Mainland Scandinavian, noun phrases that denote entity kinds take the form of a bare plural (see Carlson 1977; Krifka et al. 1995):

(56) *Dinosaurar er utdøydde.*
dinosaur.PL.MASC be.PRES extinct.PL
'Dinosaurs are extinct.'

There are some exceptions and cross-speaker variation, but generally this is the form we find for kind-denoting noun phrases. A semantic agreement approach predicts that pancake sentences are unacceptable when the noun phrase is definite, because the noun phrase would not refer to a kind. However, as shown in subsection 4.2.2, we do indeed find definite pancake sentences, under the right context. I repeat example (20b) below:

(57) *investeringen er samfunnsøkonomisk*
investment.SG.MASC.DEF be.PRES socio-economically
lønnsom-t
beneficial-SG.NEUT
'The investment is socio-economically beneficial.'

The noun phrase *investeringen* 'the investment' refers to a particular invest-

ment event, and it cannot refer to a general investment kind. This fact adds to the argument that not all pancake subjects are kind-denoting.

Another prediction by the semantic agreement approach is that the pancake subject should be more restricted for numerals. We see that once a numeral is added to a generic sentence, the reading goes away:

(58) *#To dinosaurar er utdøydde.*
two dinosaur.PL.MASC be.PRES extinct.PL
'#Two dinosaurs are extinct.'

The presence of a numeral suggests that the kind has been realized by an NM, meaning that it no longer refers to a kind: if a dinosaur is being counted, that must mean that it has been divided up. If pancake subjects denote entity kinds, we expect them to never appear with a numeral. However, it *is* possible to use numerals in pancake subjects, with what I call event NPs. I repeat example (22):

(59) *Eg var ikkje så svolten, men to pannekaker til frukost*
I be.PAST not that hungry but two pancake.PL.FEM for breakfast
var faktisk lurt / #lure.
be.PAST actually clever.PL.FEM / clever.SG.NEUT
'I wasn't that hungry, but (eating) two pancakes for breakfast was actually a good idea.'

The two pancake are dividible and bound as objects in the world, and importantly, *to pannekaker til frukost* 'two pancakes for breakfast' refers to an event particular – there is one eating event that happened this morning that the speaker participated in. Supporters of the low-on-individuation account depend on the noun phrase denoting a generic event (see especially Haugen and Enger 2019), so this example poses a problem for their attempt to give a full story for the nature of all pancake subjects.

Another piece of data that suggests a non-requirement for a kind interpretation is the fact that when the subject is a proper noun, such as a place name, the adjective *must* be in the singular neuter form. I repeat the examples in (6) below:

(60) a. *Los Angeles er stor-t nok til å gi deg*
Los Angeles be.PRES big-SG.NEUT enough to.P to give you
mange gode opplevelser.
many good experiences
'Los Angeles (as a city) is big enough to give you many good experiences.'

b. *Januar er kald-t*
January be.PRES cold-SG.NEUT
'January is cold.'

Both *Los Angeles* and *januar* 'January' clearly refer to a specific referent, which provides more support for an approach that does not require kinds.

Another challenge is the in some sense dismissal of event NPs. While I agree that event NPs are not literally reduced infinitive clauses, they *do* denote events, and this *does* have consequences for the distribution. I will now counter some of the data presented by Hellan (1986) and Enger (2004, 2013) against an infinitive analysis. Countering their points does not mean I support an infinitive clause analysis, but rather that I support the view that some pancake subjects denote events. One counterargument to an across-the-board infinitive clause approach has been that we would expect a sentence to be ungrammatical if a noun is topicalized out from an infinitive clause (Hellan 1986; see also Enger 2004, 2013). However, these sentences are acceptable:

(61) *Pannekaker er enkel-t å laga.*
pancake.PL.FEM be.PRES easy-SG.NEUT to make
'It is easy to make pancakes.'

The neuter marking on *enkelt* 'easy' here comes from the agreement with the infinitive clause *å laga (pannekaker)*. If *pannekaker* 'pancakes' represented an infinitive clause meaning *to make pancakes*, the sentence would be ungrammatical in the same way that the following sentence is:

(62) **Å laga pannekaker er enkelt-t å laga.*
to make pancake.PL.FEM be.PRES easy-SG.NEUT to make
Intended: 'It is easy to make pancakes.'

However, my separation between an unmarked NP agreement and event NP agreement can explain this with the fact that in example (61), the subject refers to an entity. A better way to test whether the event NP pancake subject exists is to add a modifier like *kvar dag* 'every day', and to use an adjective such as *enkelt* 'easy'. When we do this, the sentence is ungrammatical:

(63) **Pannekaker kvar dag er enkel-t å laga.*
pancake.PL.FEM every day be.PRES easy-SG.NEUT to make
Intended: 'It's easy to make pancakes every day.'

So, the passability of this test depends on the particular reading of the "pancake noun phrase" we are referring to. In the sentence above, there is a clash between the entity-requiring verb *laga* 'make' and the event of doing something with pancakes. While I do not claim that event NPs are *literally* infinitive clauses, they do denote events, which naturally means that they will share some traits.

Another way that event NP agreement and unmarked NP agreement are different is when the adjective has been *it*-clefted. Consider the minimal pair below, where the first example has an eventive subject and the other one has an unmarked noun as its subject:

(64) *Det er rask-t med pannekaker.*
it is fast-SG.NEUT with pancake.FEM.PL
'It's fast to make pancakes.'

(65) **Det er kvit-t med snø.*
it be.PRES white-SG.NEUT with snow.FEM.PL

Although the semantic agreement approach makes tempting promises, I believe that the distribution is too different between the event and unmarked noun readings to justify a unification of the two.

To summarize my opinion of the semantic agreement approach, I will first emphasize that, in cases such as *Vodka er sunt* 'Vodka.SG.MASC be.PRES healthy.SG.NEUT', it does feel like there is a correlation between neuter agreement and lack of individuating structure (in my terms the lack of an NM

head). The problem comes out when we insist that all subjects that trigger anomalous agreement have the same denotation and syntactic structure. On a more general note, the approach is built on the idea that agreement is *either* in the syntax *or* in the semantics. The assumption is that when agreement is "semantic", syntactic features and structure are irrelevant. From a generativist perspective, it is difficult to imagine how an agreement operation could then take place and where the adjective would get its singular neuter inflection from. Instead of leaving syntax out of the question of pancake agreement, we need to think about how the interpretation reflects the underlying syntactic structure. In the following, I will present an approach that attempts to treat pancake agreement as fully syntactic in nature.

4.3.3 Classifier approach

Josefsson (1999, 2006, 2009, 2014) makes it clear that there are two types of pancake sentences: the eventive type, in which the subject denotes a proposition, and the nominal type, in which the subject consists of a mass noun. She however tries to unify them somewhat by arguing that all pancake sentence subjects are headed by a null classifier. Under this view, when we have an unmarked noun reading, the classifier has selected a noun phrase, and when we have an event reading, it has selected an entire clause. There is independent evidence of a clause-dominating determiner in Norwegian: when an infinitive clause takes an argument position, the clause may optionally be selected by a determiner *det*, which is the singular neuter form of 'it' in English. There is no notable difference in meaning between the presence or absence of *det* in this case:

(66) *(Det)* *å* *laga* *pannekaker* *til* *middag* *er*
(that.SG.NEUT) to make pancake.PL.FEM for dinner be.PRES
lur-t.
clever-SG.NEUT
'Making pancakes for dinner is a good idea.'

The idea is that whenever we have an argumental infinitive clause or mass

noun, there is a nonovert classifier *det* present.[15] The classifier can have different semantic purposes: when the subject has an eventive reading, it contributes nonovert information about the meaning of the null/nonovert, infinitival verb. When the subject denotes an entity, the classifier specifies that the entity refers to a substance rather than countable units. That is, it specifies that the entity has a mass denotation. Josefsson (2006, 2009, 2014) compares the classifier to prenominal pronouns, which are found to appear in Mainland Scandinavian:

(67) *hon den nya professor-n*
she the.COMMON new professor-COMMON.DEF
'the new professor'
(Swedish; Josefsson 2009)

Hon 'she' serves as a "classifier" that semantically specifies that the noun refers to a female professor, because the noun *professor* itself does not contain this information.

Theoretically speaking, Josefsson (2014) equates the mass-expressing classifier to Pelletier's (1975) Universal Grinder operator, which I discussed in Chapter 2. While the event reading shows *det* overtly in Norwegian, this does not happen with mass nouns. What is Josefsson's (2014) justification for the presence of such a classifier? Josefsson (2014) presents data from the West Jutlantic variety of Danish, which supposedly does have such a classifier (see also Arboe 2016; Diderichsen 1946; Pedersen 2019; Skautrup 1968). As opposed to the two-gender system of Standard Danish, West Jutlantic is reported to not have a gender system. In most cases, the nouns that would be neuter in Standard Danish take what looks like the common gender form. Compare the West Jutlantic definite nouns to the Standard Danish equivalents below.[16] I have marked *house* as neuter in West Jutlantic only because that is the gender that the noun would have had in Standard

[15]In Josefsson (1999, 2006), the phrase label "SemP" (semantic phrase) is used, but in practice it is no different from the classifier that she advocates in her following work.

[16]Note that West Jutlantic marks definiteness through an article, while Standard Danish does so with a suffix.

Danish:

(68) a. *mælk-en, hus-et*
milk.COMMON-DEF.COMMON house.NEUT-DEF.NEUT
'the milk, the house'
(Standard Danish)

b. *æ mælk, æ hus*
DEF milk.COMMON DEF house.SG.NEUT
'the milk, the house'
(West Jutlantic; Skautrup 1968, p. 128)

West Jutlantic becomes interesting to us when we see that, specifically when a noun is mass-denoting and a demonstrative is added, what looks like the neuter form is what appears on the demonstrative, regardless of the gender of the noun in Standard Danish:

(69) a. *den jord, det sand*
that.COMMON soil.COMMON that.NEUT sand.NEUT
'that soil, that sand'
(Standard Danish)

b. *det jord, det sand*
that.NEUT soil.COMMON that.NEUT sand.NEUT
'that soil, that sand'
(West Jutlantic; Josefsson 2014, p. 71)

Josefsson (2014) sees this as a sign that all varieties of Mainland Scandinavian use a classifier when a noun denotes a mass. A classifier analysis would unify unmarked NPs and the event NPs by positing that both kinds of pancake subjects contain a substance-specifying classifier. Josefsson (2014) uses *ämnet* 'the substance' in Swedish as an example of a classifier that specifies an entity: the idea is that *tjära* 'tar' in example (70a) is underlyingly *ämnet tjära* 'the substance tar' in (70b):

(70) a. *Tjära är klibbig-t.*
tar.COMMON be.PRES sticky-SG.NEUT
'Tar is sticky.'

b. *Ämne-t* *tjära* *är* *klibbig-t.*
substance-NEUT.DEF tar.COMMON be.PRES sticky-SG.NEUT
'Tar is sticky.'
(Swedish; Josefsson 2014, p. 68)

Unlike Enger (2004, 2013) and Haugen and Enger (2019), Josefsson (2014) considers pancake sentences to be a syntactic phenomenon, although she acknowledges the fact that there may be a correlation with semantic meaning (specifically in the case of pronouns). One potential benefit of a purely syntactic account is that we might be able to avoid claiming that there are two agreement systems: one where the adjective copies the morphosyntactic features of a noun phrase, and one where the adjective translates semantic information from the noun into morphosyntactic features. Having two agreement systems in language is, in Josefsson's view, uneconomical.

This is a desirable guiding principle. However, I wish to point out that Josefsson (2014) somewhat misconstrues the intention behind the Universal Grinder (à la Pelletier 1975). Grinding operators like the Universal Grinder, or Rothstein's (2017) GRIND, is that a noun that is inherently count, i.e. that it is specified for a count reading, can undergo a change in meaning so that it can end up denoting a mass. For example, the grinder must apply to an inherently countable noun like *dog*, *house* or *girl*. This is intuitive because, in order to convert the atomicity value of an entity, there must be an atomicity value to change in the first place. It may be the case that Josefsson (2014) views the "grinding classifier" as a specification of mass denotation, implying that the noun itself is in her view either underspecified for atomicity or already mass. If she assumes the former option, the problem arises that the grinder has no countable noun to change; if the latter is the case, there is no purpose for the grinder because the noun is already a mass. Note that this criticism is not syntactic in nature: there are languages that have classifiers whose purpose is to specify the mass denotation of the noun (e.g. Bengali; see Rácová 2007). I am only commenting on the role of *semantic grinding*, as it is defined in the literature.

Another grinding-related problem is that, according to my findings in the thesis so far, grinding operators do not exist, at least in Mainland Scan-

dinavian (see especially subsection 2.5.3). I showed that nouns are either underspecified for atomicity or they have atomicity in the nominal specification, which is part of the process of giving them identity criteria in NM. When nouns *are* specified for atomicity, the count or mass reading that they are assigned cannot be changed, which again poses a problem because the countability does not come from an operator. If atomicity were specified through an operator, we would expect this operator to be freely applicable when needed. After all, the purpose of the operator is to change this value. For other nouns, for which atomicity is underspecified, such as gendered nouns in Norwegian, we do not need a grinder because atomicity can come from context rather than formal structure (as we see in Mandarin Chinese; Cheng et al. 2008). My point is that it will be difficult to argue for the presence of a grinder *in* a classifier head if grinding operators do not exist. If one wishes to go for a classifier explanation, the semantic part of the argument should in my view be revised.

I also wish to bring to light how the West Jutlantic data may be misleading or even contradictory to Josefsson's (2014) claim. The argument is that pancake subjects contain a nonovert classifier and that this is supported by the claim that this classifier in fact overtly appears as *det* in West Jutlantic. If the "singular neuter" agreement comes from the fact that unmarked mass nouns are actually the complement of a classifier *det*, then we would expect that West Jutlantic does not have unmarked mass nouns. Josefsson (2014) does not inform us whether West Jutlantic has pancake sentences, but according to my informal source (Torben Arboe, p.c.), the singular neuter agreement form does not show up on predicative adjectives when the subject is an unmarked mass noun:

(71) *Sne er hvid / *hvid-t.*
snow be.PRES white.COMMON / white-SG.NEUT
'Snow is white.'
(West Jutlantic; Torben Arboe, p.c.)

Where is the classifier *det*? There is no obvious answer. If one argues that there is a nonovert classifier here, then one cannot explain why the adjective

hvid 'white' shows common gender agreement. The only explanation left is that there is no classifier serving as a grinder in the noun phrase *sne* 'snow'. West Jutlantic provides further support for treating the eventive and the unmarked noun reading as different phenomena: the singular neuter form does show up on the adjective when the subject has an eventive reading:

(72) *tynde pandekager med et strit sirup, det*
thin.PL pancake.PL.COMMON with a drip syrup that.SG.NEUT
er god-t
be.PRES good-SG.NEUT
'Thin pancakes with a drip of syrup – that's good (to eat).'
(West Jutlantic; Torben Arboe, p.c.)

This again suggests that event NP agreement and unmarked NP agreement are inherently different from each other. Now moving on, the conclusion after considering the classifier approach is that it does not provide a convincing independent correlate of the distribution of anomalous agreement, either semantically or morphosyntactically, and it cannot explain the full distribution of the data, at least in Norwegian.

4.3.4 Summary

What have been labeled "pancake sentences" cannot be treated as one phenomenon. Instead, they are two different processes that look the same agreement-wise. The reason for the appearance of specifically the singular neuter form can be explained by its role as a "default" (as I argued in Chapter 2; see also Corbett and Fraser 1999; Enger 2009; Lohndal and Westergaard 2021). Trying to unify the two phenomena causes problems for all attempts made to understand them so far: the event approach cannot explain the unmarked NP agreement, the semantic agreement approach can only explain cases where the subject is an unmarked mass noun and the classifier approach does not make reasonable predictions outside of the specific problem at hand. I will now propose what I believe to be more fitting analyses.

4.4 Proposal

It is clear now that what are known as "pancake sentences", i.e. sentences where a predicative adjective takes the singular neuter agreement form instead of copying features from a subject noun phrase, can actually be split into two different categories. As such, the solution to the pancake sentence puzzle must also be twofold. What will become clear is that the conclusions from the two previous chapters have led up to a fulfilling solution to the pancake problem. I will now present my solutions to each reading.

4.4.1 Event NP agreement

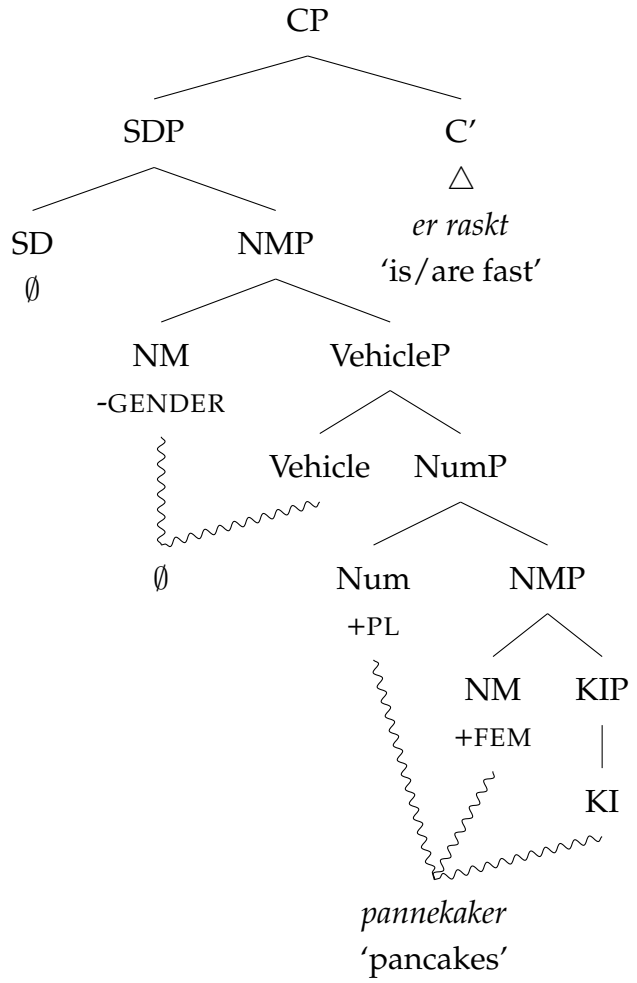
In Chapter 3, I motivated the existence of nonovert vehicle events that help the noun phrase structure when the noun phrase denotes an entity but something outside of noun phrase requires an event. This is in line with N. Asher's (2011) view on coercion: in the verb phrase *begin the book*, something nonovert must be added so that *the book*, which is a polymorphic noun, can refer to an event because of the verb's need for an event argument.[17] In the previous chapter, I made use of this approach and argued that *occasional*-type FAs always require an event to modify, and sometimes Vehicle is added to satisfy the FA's event presupposition. I will argue that, in eventive pancake sentences in Norwegian, it is Vehicle that triggers the default agreement form *-t* on the predicative adjective. I think the neuter agreement shows up on the adjective because Vehicle comes with its own NM head, and Vehicle's NM head is specified as CLASS:-GENDER.

My analysis of the syntax behind eventive pancake sentences will not deviate from the one I laid out in Chapter 3. For entity-denoting, polymorphic nouns that are not mass, like *pannekaker* 'pancakes', it must be the case that a vehicle event has been added. The structure behind eventive NP agreement is the following:

[17] See also N. Asher and Pustejovsky (2006), Egg (2003), Jackendoff (1997), Nunberg (1979), Pustejovsky (1995), Levin (1993), Lascarides and Copestake (1998) and others for theoretical approaches to this kind of metonymy.

(73) a. *Pannekaker er rask-t.*
pancake.PL.FEM be.PRES fast-SG.NEUT
'Making/eating/V-ing pancakes is fast.'

b.



Like we saw in Chapter 3, the insertion of Vehicle to the nominal projection involves rewriting the denotation of the entity into an event description. But Vehicle does not *literally* change the noun phrase into a verb phrase, meaning that pancake subjects are still noun phrases. Once Vehicle has been added, then, it needs its own NM so that it can be categorized within the nominal domain. In the case of English *occasional*-type FAs, this NM is empty, but in Norwegian, it needs a class feature. Vehicle, as it is sortally an event, cannot be assigned a gender feature, which is specified on

the NM head. It is because of this −GENDER feature that the adjective *raskt* 'fast' takes the neuter form: again, neuter appears when there is no gender feature to agree with.

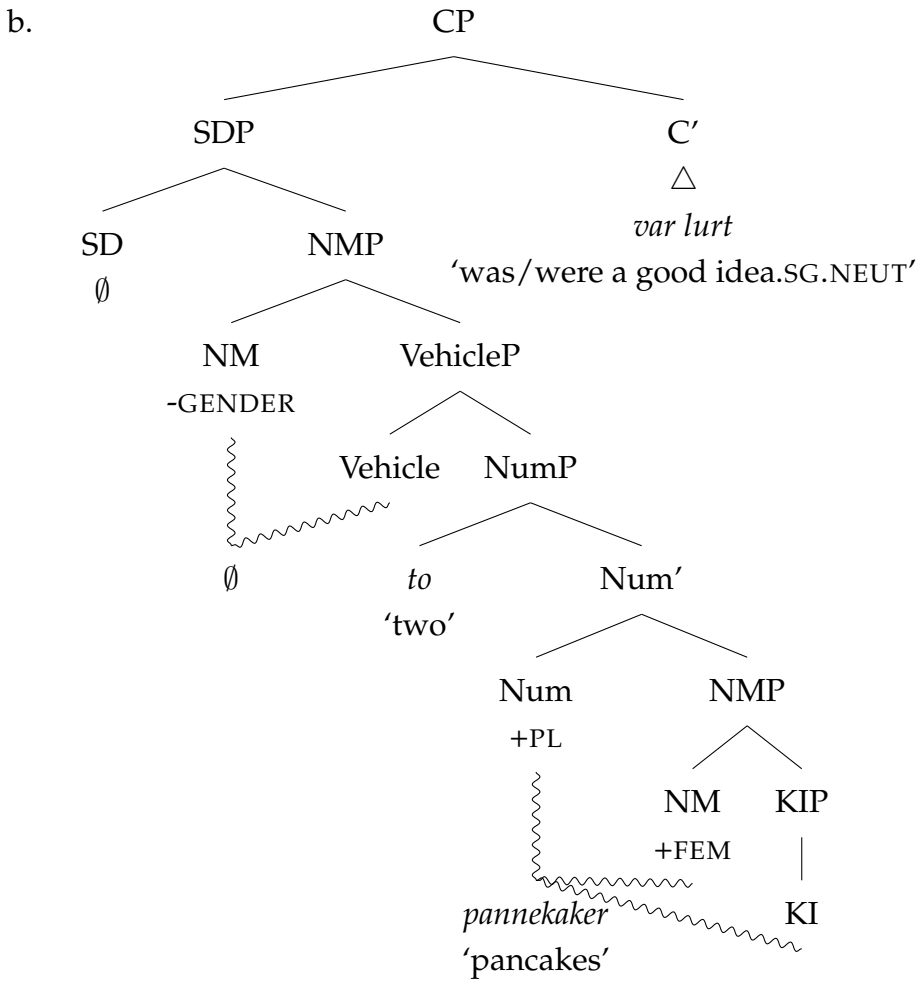
The assumptions I make about noun phrase structure and the existence of Vehicle prove satisfying when we consider the acceptability of numerals in these sentences. I showed in subsection 4.2.2 that, when the interpretation of the subject is eventive, numerals can be added without losing the pancake agreement on the adjective. I repeat example (22) here:

(74) *Eg var ikkje så svolten, men to pannekaker til frukost*
I be.PAST not that hungry but two pancake.PL.FEM for breakfast
var faktisk lur-t / #lur-e.
be.past actually clever-SG.NEUT / clever-PL.FEM
'I was not that hungry, but (eating) two pancakes for breakfast was actually a good idea.'

It is of note that *to pannekaker til frukost* 'two pancakes for breakfast' refers to a single, episodic event of eating two pancakes. The pancake entities are also themselves unique: the noun phrase ultimately denotes a single eating event of two unique pancakes. Using Vehicle will help us reflect this part of the meaning: the numeral *to* 'two' is located below Vehicle and thus only counts the individual pancakes. Vehicle can then refer to an event that involves two pancakes at a time. To illustrate, I will use a simplified version of the sentence above:

(75) a. *To pannekaker var lur-t.*
two pancake.PL.FEM be.PAST clever-SG.NEUT
'Eating two pancakes (or some other event) was a good idea.'

b.



The following steps take place for the relevant reading to arise: 1) NM realizes the pancake kind, forming an individual; 2) The pancake individual is pluralized and counted via NumP; 3) Vehicle forms an event relating to these two individual pancakes; 4) An NM accompanies Vehicle and specified that it does not have a gender feature; 5) The adjective *lurt* 'a good idea' modifies the vehicle event. And, again, because the lower noun phrase, which contains +FEM, is no longer available to the adjective, the result is neuter agreement. The subject now denotes a stage of two pancakes – there is a temporal and/or spatial slice in the pancakes' existence in which they were involved in a contextually interpretable event, in this case eating.

The connectedness between the individuation of the pancakes via NM

and the individuation of the vehicle event aligns with the view of stages that I advocated in Chapter 3: stages are not formed *either* by the noun phrase *or* by the verb, but instead by a mechanism within the noun phrase whereby Vehicle invokes the inference of a stage and thus affects the interpretation of the entity represented by the noun. I speculate that my proposed solution may help explain the French data used by Martin et al. (2020), who choose to argue that there are two different kinds of pancake operators: a generic one and an episodic one. Instead of positing that language has a wide array of highly specific but related nonovert operators, it would be more economical to view the difference between the readings as the result of inference about the sort of event that may be related to a counted individual. To my knowledge, there is no research that suggests that *verbs* have different representations depending on whether they end up with a generic or an episodic reading, and I do not see why this would be the case for nonovert event operators, either. Even so, I do not make any confident proposals for French and Brazilian Portuguese, as it would involve detangling the syntactic variation to the extent that it would ultimately derail my argument.

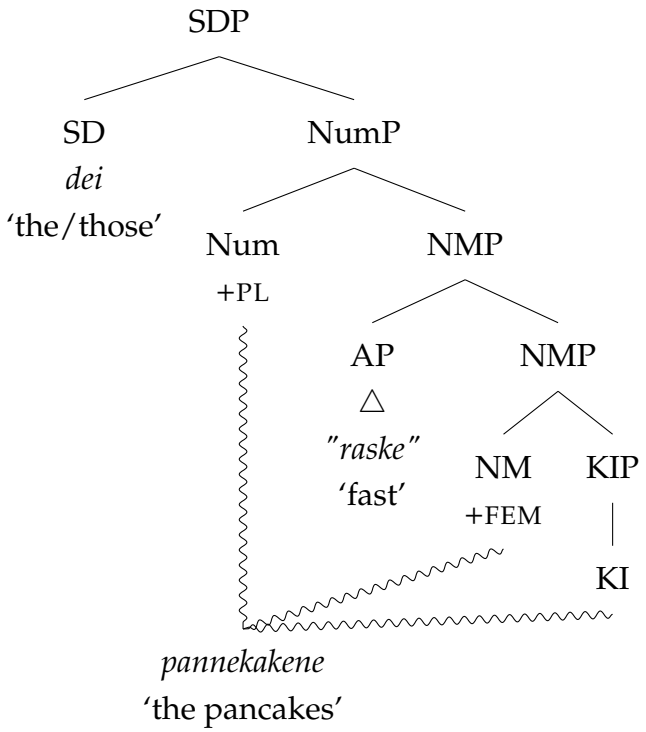
Why do attributive adjectives never resort to default agreement in contexts in which a predicative adjective would do so? I repeat example (25):

(76) *Me tenkte pannekaker ville gå raskt. Dei "raske"*
we thought pancakes would go fast the/those fast.PL.FEM.DEF
pannekakene tok oss ein time å steika.
pancake.PL.FEM.DEF took us an hour to cook
'We thought pancakes would be fast. The/Those "fast" pancakes (i.e., the pancakes that were supposed to be fast to make) took us an hour to cook.'

My explanation for this is straightforward: *dei raske pannekakene* 'the/those fast pancakes' does not refer to an event in this example, but pancake entities. It is in fact the object of the infinitive clause *å steika dei "raske" pannekakene* 'to make the "fast" pancakes', and there is no vehicle event in the noun phrase structure. The sentence clearly cannot be paraphrased as **To make pancakes fast took us an hour to cook* – it is both ungrammatical and nonsensi-

cal. Below is the structure of the subject noun phrase:

(77)



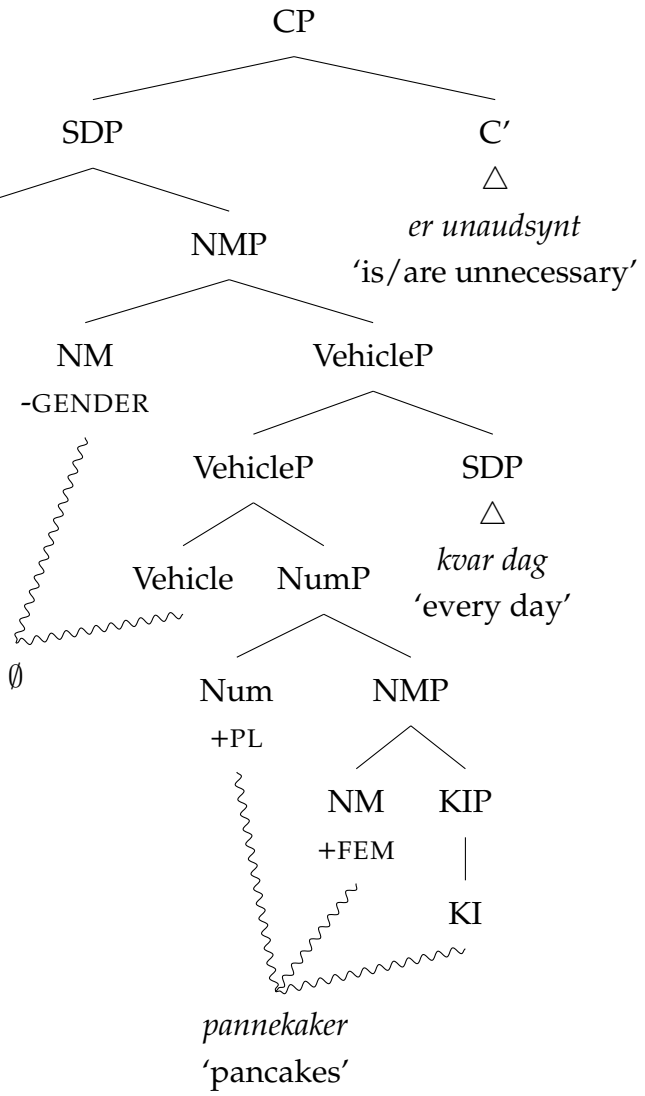
Raske 'fast' may be lexically related to movement or events, but this is not reflected in the compositional semantics itself.[18]

I pointed out in subsection 4.2.2 that eventive modifiers like *kvar dag* 'every day' can be added to eventive pancake subjects. By having an event in the noun phrase structure, we can simply posit that *kvar dag* 'every day' modifies VehicleP:

(78) a. *Pannekaker kvar dag er unaudsyn-t.*
pancake.PL.FEM every day be.PRES unnecessary-SG.NEUT
'Eating/being served (or some other event) pancakes every day is unnecessary.'

[18]In this specific sense, I follow Maienborn's (2020) intuition that, even though adjectives like *fast* describe speed, which seems event-related, this does not mean that they must sortally select for an event in the semantics. Instead, the adjectives appeal to this meaning in the pragmatics and the "event-like" reading of the noun is contextual instead. Here I deviate from Larson (1995).

b.



So far, it seems to produce desirable results to believe in the existence of a vehicle event that can be added when context demands it.

What about cases where the noun itself is eventive, like *inspection* in English? There is actually reason to think that pancake agreement is induced by Vehicle here, as well. Remember that I believe eventive nouns to be of argument type x_e (as a translation of N. Asher's (2011) "dual aspect" category). Although Vehicle always triggers pancake agreement, this does not mean that it is the eventive meaning itself that causes the agreement – if this

had been the case, we would expect *all* eventive nouns in Norwegian to "be neuter". Attributive adjective agreement shows us that this is not the case:

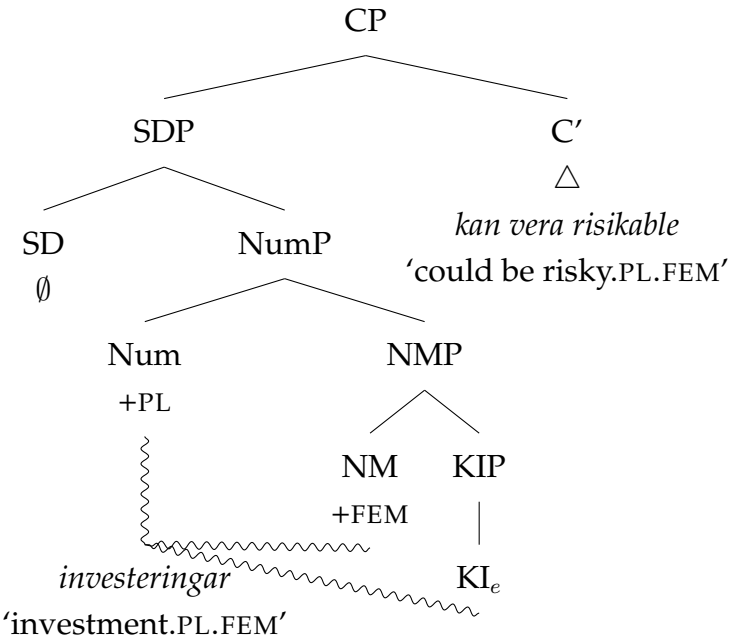
(79) *ei* *høg* / **eit* *høg-t*
a.SG.FEM high.SG.FEM / a.SG.NEUT high-SG.NEUT
investering
investment.SG.FEM
'a high investment'

Sentences where the subject is a plural eventive noun are perfectly acceptable with a traditionally agreeing form:

(80) *Investeringar* *kan* *vera risikabl-e.*
investment.PL.FEM could be risky-PL.FEM
'Investments could be risky.'

Investering 'investment' does not itself need pancake agreement. The structure for the sentence above should be fairly simple:

(81)



The noun phrase is spelled out with Num, NM and KI, resulting in the plural, feminine form, and the predicative adjective copies the +PL and +FEM

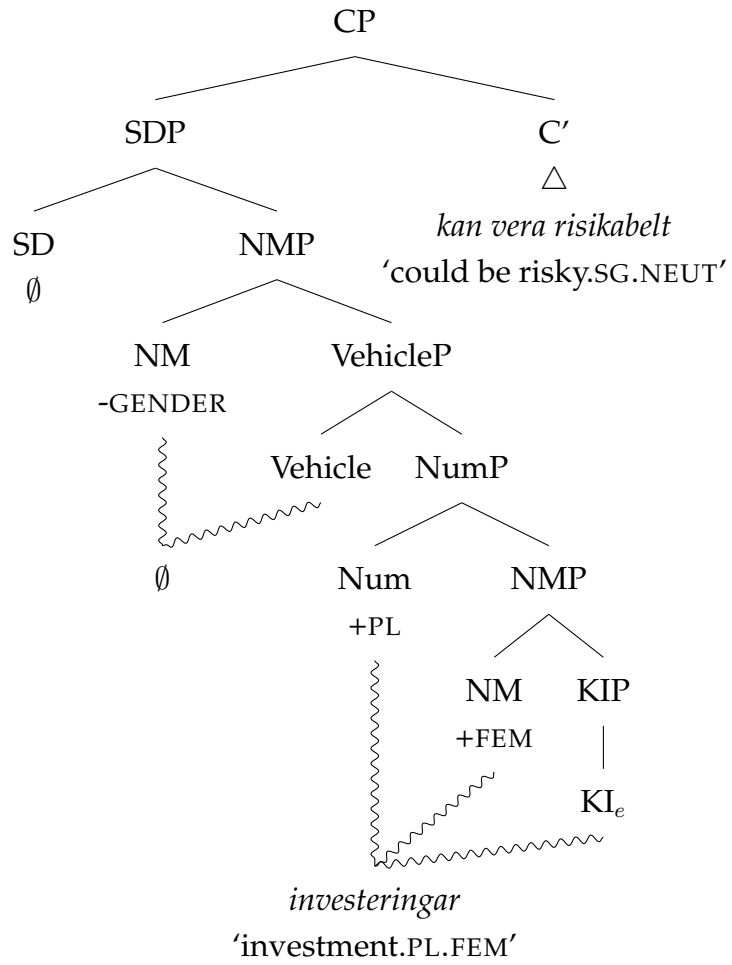
feature values.

We *do* however find pancake sentences with eventive nouns. Below is one that forms a minimal pair with (80):

(82) *Investeringar kan vera risikabel-t.*
investment.PL.FEM could be risky-SG.NEUT
'Making investments could be risky.'

Overtly, the subject looks identical, but there must be an element in there to force the *-t* agreement that we see. I argue that even when the noun itself is eventive, it is the insertion of a vehicle event that licenses anomalous neuter agreement. The noun phrase *investeringar* 'investments' is, like we saw for *pannekaker* 'pancakes', selected by Vehicle. Below is what I suggest to be the structure of the sentence:

(83)



Vehicle is inserted on top of the instantiated and counted nominal and its non-gendered NM overrides the NM lower down, and this forces the adjective into default agreement, resulting in the neuter form. Intuitively, the sentence contains some eventive content outside of the investments themselves, though its meaning may be even more elusive than what was the case for entity nouns. When thinking of the meaning of the sentence above, we may think of 'investments' as the act of *making* an investment. This distinction is harder to formulate when the noun is eventive, since the event that is visible in the noun strongly contextually influences the interpretation of the vehicle event. The difference between *investing* and *making an investment* is subtle, but it is in fact there, and the use of Vehicle is what blocks the

gender value of the noun from being available to the predicative adjective. The fact that the meaning of Vehicle is so vague may explain why speakers can fairly freely pick between "regular" agreement and pancake agreement without too big of a difference in meaning.

Overall, my proposal for how to analyze the event reading is simple, but I believe it makes the right predictions. I will now address the other reading of pancake sentences, in which the subjects do not contain Vehicle.

4.4.2 Unmarked nouns

My proposal for pancake subjects consisting of unmarked nouns is different in nature, as it does not touch upon the pragmatics-semantics interface. Vehicle is a pragmatics-motivated operator in the semantics and a head in the syntax, and its addition is outside of the regular layers in the nominal scaffolding. In contrast, my explanation for these pancake sentences will be purely syntactic in nature, and it will not draw upon any machinery introduced by extrasyntactic factors. Specifically, I will argue that in sentences like *Snø er kvitt* 'snow is white', *snø* only consists of a kind phrase (KIP), and the noun never gets reference from a predicate layer above it, meaning that there is no NM to carry a $\pm$FEM feature.

Remember that in Chapter 2, I laid out a noun phrase structure in which bare noun phrases only consist of KIP. Essentially, the argument is that noun phrases such as unmarked mass nouns are so small that they do not have a Noun Marker (NM). I justified this by showing that the atomicity value of bare nouns is ambiguous. Below is the example I used:

(84) *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?'

I take this lack of an atomicity *or* gender value in these sentences to mean

that there is no NM in these nominal structures. A small-structure approach to bare nouns in Norwegian implies that a predicative adjective modifying a bare noun should show neuter agreement, because of the lack of a gender feature. This is effectively what I believe is the reason behind unmarked NP agreement.

I will summarize some important details about unmarked mass NP subjects. I showed earlier that within this type, it is only unmarked noun subjects that show pancake agreement behavior. For example, if a mass noun is modified by an attributive adjective (85), or if it is definite (86), the predicative adjective must agree with the gender and number of the subject. Observe the masculine inflection agreeing with *gammal snø* 'old snow' and *snøen* 'the snow' below:

(85) *Gammal snø er hard-∅ / *hard-t.*
old.MASC snow.MASC be.PRES hard-SG.MASC / hard-SG.NEUT
'Old snow is hard.'

(86) *Snø-en er kvit-∅ / *kvit-t.*
snow-MASC.DEF be.PRES white-SG.MASC / white-SG.NEUT
'The snow is white.'

In the sentences above, it must be the case that the noun phrases make up SDPs, since attributive adjectives and determiners do not show up without more structure than just KIP. And with the formation of such a structure comes an NM, which in the case of gendered nouns like *snø* 'snow' means that there is a −FEM value for the adjectives to agree with.

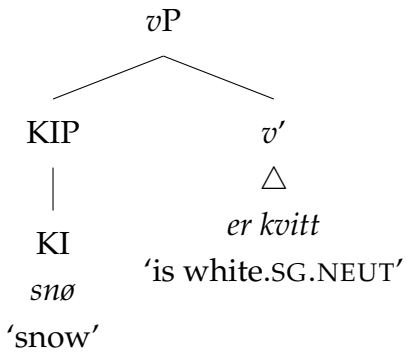
We also see that, because relative clause heads need a full SDP structure, a predicative adjective must agree with the bare singular noun if it is located inside a relative clause. This suggests that this noun phrase structure does have an NM.

(87) *Eg mokar snø som er grå-∅ /*
I shovel.PRES snow.MASC that be.PRES gray-SG.MASC /
**grå-tt.*
gray-SG.NEUT
'I shovel snow that is gray.'

Now that *snø* 'snow' has a −FEM value, the predicative adjective can agree with the gender of the noun instead of having to resort to default agreement.

Believing that bare mass noun subjects only consist of KIP will help us explain these facts. In the sentence 'Snow is white', the subject denotes a snow kind, and the snow is never put into the referential zone in the nominal projection. And because there is no gender-carrying NM, neuter is the agreement that shows up.

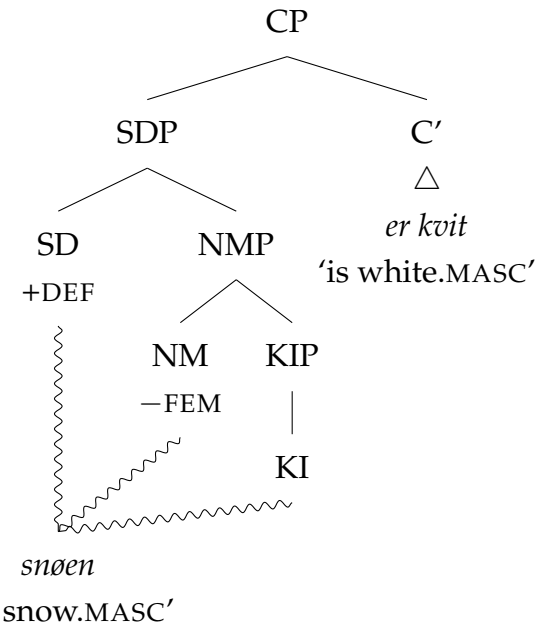
(88)



When the subject contains more than an unmarked mass noun, this is a sign that a full SDP has been formed. In these cases, the noun phrase contains an NM, so the elements that need to agree with the noun now have access to a ±FEM feature. Below is the structure of sentence (86):

(89) a. *Snø-en* *er* *kvit-∅* / **kvit-t.*
snow-MASC.DEF be.PRES white-SG.MASC / white-SG.NEUT
'The snow is white.'

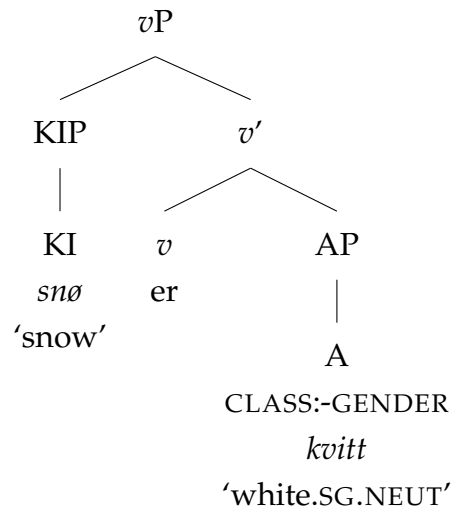
b.



The difference in structure between *snø* 'snow' and *snøen* 'the snow' is, again, intuitive. The definite suffix *-en* is an SD that establishes the uniqueness of the entity *snø* 'snow' in the discourse, and in the process of forming the SDP, NM is added to give the entity its identity criteria, and the value −FEM, before the application of the definiteness.

Why is it the neuter agreement that shows up when the subject is an unmarked mass noun? My view of agreement is that agreeing heads automatically search for a gender value. When they cannot find one, they resort to a -GENDER value without specifying the subclass of -GENDER, i.e., whether the noun is +ATOMIC or −ATOMIC. This is the structure behind *Snø er kvitt* 'snow.MASC be.PRES white.SG.NEUT':

(90)



This again shows that neuter is the agreement that shows up when a head needs to agree but cannot find a gender value.

There is disagreement about whether a KIP (or NP, as it is traditionally called) can be inserted as an argument, but I think it can. Some work argues that an SDP needs to be formed so that there is a referent that can perform the action represented by the verb (see, e.g., Grønn 2006; Krifka 2003; Longobardi 1994). However, given what we now know about the nominal layers, with the close connection between the syntax and semantics of kinds and tokens, it does not seem possible to have larger structure while also having a noun phrase denote a kind. The simple explanation is that the noun never undergoes realization from kind to object, so it cannot consist of more than KIP. I will also add that, within my system, both KIPs and SDPs are of type $\langle e \rangle$, meaning that there is no type-theoretic reason why there should be a clash between a KIP and a verb phrase (see also Chierchia 1998b here). I refer to Borthen (2003) and Julien (2006) for empirical arguments against an SDP requirement for arguments, using Norwegian data.

Now having decided that unmarked mass noun subjects are KIPs, I change the focus to proper nouns like *Los Angeles*, which are also unmarked but fairly different in their semantics, since they do denote unique entities. I have reason to believe that proper nouns are not just KIPs that get pancake agreement because there is no NM: my suggestion is that they are neuter

nouns, like any other neuter noun. My justification for this is that neuter agreement shows up within the noun phrase on demonstratives, possessives, determiners and attributive adjectives, if these are added. Below are some examples provided by Enger (2022):

(91) a. *Det Oslo jeg engang kjente*
that.SG.NEUT Oslo I once knew
'that Oslo I once knew'

b. *Mitt Stockholm*
my.SG.NEUT Stockholm
'my Stockholm'

c. *Et nytt Roskilde*
a.SG.NEUT new.SG.NEUT Roskilde
'a new Roskilde'

The noun phrase-internal neuter agreement that we see here contrasts with the case of mass nouns, where the mass noun is treated as having a ±FEM feature once attributive adjectives or definite suffixes are added. With this I argue that proper nouns do not trigger pancake agreement in the "unexpected" sense: they just trigger the neuter agreement that is the expected result of a noun phrase having no ±FEM in its NM. Instead, the noun phrase contains a positively valued ±ATOMIC feature. I admit that it is not wholly clear why non-human proper nouns never have ±FEM in their NM.

Not treating proper nouns as pancake subjects further helps us when we consider human proper names, such as *Jens*. My explanation for the inability to utter **Jens er pen-t* 'Jens be.PRES pretty-SG.NEUT' in Norwegian is simply that the noun phrase *Jens* contains an NM that is valued −FEM. There is motivation to argue that proper names have a gender feature in their projection, such as the fact that in cases where masculine and feminine adjective agreement differs, the semantic gender of the human matters:

(92) a. *Jens er lit-en / *lit-a.*
Jens be.PRES small-MASC / small-FEM
'Jens is small.'

b. *Helene er *lit-en / lit-a.*
Helene be.PRES small-MASC / small-FEM

'Helene is small.'

The fact that the adjective 'small' takes these different forms implies that there is a ±FEM in the noun phrases *Jens* and *Helene*. I believe that my analysis of human and non-human proper nouns can circumvent the individuation hierarchy of Sasse (1993), discussed in subsection 4.3.2, since it seems to make the wrong predictions and cannot explain variation within strongly individuated entities.

The solution I propose is mostly mechanical in nature, which will not satisfy everyone. I recognize the generalization made by Enger (2004, 2013) and Haugen and Enger (2019) that anomalous neuter agreement is sometimes correlated with the noun being more "abstract". It is tempting to claim so because unnmarked mass nouns inherently refer to untangible, unindividuated entities. However, since entities that are inherently individuated fit into the same pattern, such as (nonhuman) proper nouns, we cannot rely solely on an individuation-based explanation. I have made the case that the default agreement we see for unmarked mass nouns comes from a lack of nominal structure, thereby making it primarily syntactic in nature. This is not to say that semantics is fully unrelated, considering the close tie between syntax and semantics in the layered, semantics-related approach to the nominal spine that I follow (based on Borer 2005; Zamparelli 2000). Still, the agreement form itself does not come from semantics as an agreement system distinct from syntax.

My analysis can help lead to a larger picture of neuter gender in Mainland Scandinavian as an "escape hatch" solution when there is no gender feature. In this case, the escape hatch is used because unmarked nouns only make up KIPs.

4.4.3 Neuter "gender", syntax and semantics

I will now discuss the nature of the neuter "gender" in Mainland Scandinavian, based on my focuses in the thesis. My work reveals that neuter is likely not a gender value, but instead a default form that appears when there is no gender in NM. This claim is backed up by the facts that 1) neuter

nouns cannot be ground or portioned; 2) neuter agreement shows up when a subject noun phrase has an eventive reading; and 3) neuter agreement shows up when a subject is made up of an unmarked noun. Once we take theoretical frameworks and small adjustments into account, the approach I take to the neuter is not that detached from other work on the topic – it can even serve as a bridge between competing perspectives. The research on gender systems has resulted in two different views on what the Mainland Scandinavian neuter may be. In one view it is a syntactic gender, and all agreement comes from syntax (Josefsson, 1999, 2006, 2009, 2014), and in another there are two gender systems, one based on syntax and one based on semantics (Enger 2004, 2013, 2022; Haugen and Enger 2019, following ideas by Corbett 1991). In the latter view, the neuter gender can be triggered by semantic factors such as the level of abstractedness of the referent (see also Hjelmslev 1956, pp. 167–190).

Considering the semantic agreement approach proposed for pancake sentences, there is some conceptual merit to individuation as the determining factor (using Sasse's (1993) individuation hierarchy), as a way to explain why neuter appears in situations where the referent of the noun is more vague or less tangible than in other situations. A high proportion of pancake sentences involves unmarked mass nouns or bare plurals, and this leaves the impression that the neuter must be associated with a subject that lacks "spatial boundedness", using Haugen and Enger's (2019) term. This is in some sense reflected in my analysis, thanks to the three-layer noun phrase structure: bare noun phrases like *snø* 'snow' only consist of KIP, and with the close tie between syntax and semantics in the nominal structure, one can imagine that we can now perfectly unify the semantic agreement approach and my approach. For me, however, the pancake agreement does not come from the fact that unmarked *mass nouns* by default only consist of KIP. As we have seen, bare singular count nouns share the same minimal structure. We also see that the "level of individuation" argument does not hold up when we consider pancake sentences where the subject is clearly individuated, like a proper noun. So, while there is some conceptual overlap between the semantic agreement approach and my approach to *some*

pancake sentences, the overlap is far from a one-to-one relationship.

Aside from the question of noun phrase size, the argument that there are two kinds of gender – one syntactic and one semantic – does not hold up for the languages I have looked at. There is variability in the literature as to whether gender, as a syntactic feature, should be seen as an interpretable feature or merely an uninterpretable noun class (see 1.2.3 and 2.2). Still, I am not aware of any arguments within the generativist tradition that a syntactic feature can be interpretable *or* uninterpretable depending on semantics, and that this, although it is the same feature, licenses different syntactic behavior. It is hard to imagine what this would look like in our syntactic model, though I acknowledge the limitations that come with trying to translate explanations from cognitive linguistics to my own framework.

The point still stands that we cannot treat neuter gender as merely a value on a gender feature that may or may not be interpretable. My argument that neuter is instead the *lack of gender* holds up to the data better, considering how it shows up in agreement whenever the referent is not traditionally nominal, e.g. a subordinate clause or a verb phrase, in the case of ellipsis (see subsection 2.4.2). Crucially, we have the evidence presented in Chapter 2 that the feature $\pm$FEM seems to be in complementary distribution with an $\pm$ATOMIC feature. In addition to the appearance of neuter in "odd" contexts, my reasoning was based on the fact that masculine and feminine (or common) nouns can undergo portioning and grinding, while neuter nouns cannot. Since masculine and feminine nouns can have their atomicity value altered, I argued that these nouns do not have atomicity in their lexical entry. Neuter nouns, however, have an inherent atomicity value in their NM, when NM is present. This argument counters the semantic agreement approach in that it ties neuter to lack of *gender*, but not lack of *structure* or *individuation*.

One may ask why semantics is not taken more seriously as an explanation for eventive pancake sentences. After all, Vehicle insertion is the result of semantic coercion. My response to this is that once Vehicle has been added to the syntax, it behaves like a syntactic head. The fact that the head was introduced for semantic or pragmatic reasons does not affect its behav-

ior once it has been added. Once Vehicle has been inserted, it comes with its own NM head which is specified as −GENDER. There is no need for a semantic account, and the syntactic one is enough. And even if semantics had been the deciding trigger for neuter agreement, there is, again, no obvious connection between nonovert events and lack of individuation, since pancake subjects can refer to episodic events (like we saw in subsection 4.3.1). So, in any case, semantics cannot be the main cause of neuter agreement.

Hopefully this subsection makes it clear that neuter agreement is formally speaking a syntactic phenomenon, despite the close tie between syntax and semantics that my framework offers.

4.4.4 Summary

I have based my proposal on the discovery that earlier attempts to understand "pancake sentences" suffer from a conflation of two different phenomena. I argue that in some cases, pancake agreement is a case of agreement with a vehicle event and not the noun itself. In other cases, the agreement comes from the fact that the noun phrase is too small to carry a ±FEM feature. The common denominator between event pancake sentences and entity pancake sentences is that the neuter form is used because of the lack of gender.

4.5 Conclusion

The goal of this chapter has been to apply what we know about the nominal spine and some of the possibilities within it. I argue that there are two different kinds of pancake sentences: one kind is the result of the lack of structure in the subject noun phrase, and the other kind comes about through the insertion of a nonovert coercive event.

I have shown once more that, in Mainland Scandinavian, the traditionally named "neuter gender" is not actually a gender. The neuter form appears whenever there is no ±FEM. In the case of event NP agreement, the predicative adjective agrees with Vehicle, whose NM does not carry a ±FEM

feature, resulting in neuter agreement. We here see the immediate benefit of having Vehicle in our theoretical toolbox: without it, there would be nothing blocking the adjective from the potentially gender-containing NM of the subject noun. In the case of unmarked NP agreement, the neuter form appears on the adjective because the subject only consists of a KIP, meaning that there is no NM carrying a $\pm$FEM feature that the adjective can agree with.

This chapter provided the final empirical test for the theoretical work developed in the thesis, and I think the result is satisfying. Of course, the findings and speculations in the thesis lead to more reflections and questions. I will make space for some of these in the following section.

Chapter 5

Conclusion

Syntax, semantics and pragmatics all contribute to a sentence in order to make it interpretable. I asked how strong the interfaces between the domains were, focusing on on nominal coercion. If a speaker uses morphosyntax to signal a change in the meaning of a nominal, does this mean that the underlying syntactic structure of the nominal is now different? The following research questions led my investigation:

1. **Atomicity**: Is the semantic concept of atomicity a feature on a syntactic head, or is such meaning in the lexicon separate from syntax? Is there crosslinguistic variation in this regard?

2. **Events**: When a noun phrase appears in syntactic settings where one would expect an event, is this a sign that there is nonovert content within the noun phrase? If so, what would such a nonovert element look like?

3. **Agreement**: How can we use syntactic relationships, such as agreement, to test whether syntax has adapted to semantic operations?

Research question 1 can be simplified as: is atomicity syntactic or semantic, or both? I argued in Chapter 2 that languages vary in whether atomicity is a category that is *syntactically* introduced as a feature on a noun-categorizing head. I showed that, in Mainland Scandinavian, atomicity is

in complementary distribution with gender in the syntax, though atomicity can be expressed in language regardless of syntactic expression. Contrary to across-the-board proposals that nouns are inherently mass or lexically specified for countability (Borer, 2005; Cheng et al., 2008; Rothstein, 2010, 2017; Zamparelli, 1995, 2000), I argue for crosslinguistic, and even intralinguistic, variation in terms of how a count or mass reading is achieved, both in the syntax and in the semantics. Overall, however, we can say that 1) atomicity can be a syntactic feature $\pm$ATOMIC, and 2) atomicity can be a semantic expression of how we perceive the entity. When atomicity takes the form of a syntactic feature, it is located on an NM head, meaning that it forms a span together with a kind-denoting noun. Sometimes, syntactic atomicity and semantic atomicity interact, and sometimes they do not. Sometimes, it depends on the noun, like we saw for Norwegian. In any case, I reject the existence of grinding and portioning operators, meaning that, in this case study, there is no operator available in the formal inventory that can be inserted to cause count-mass coercion.

In research question 2, I ask: when a noun phrase has an eventive meaning, does it entail that there must be an event in its syntactic structure? In Chapters 3 and 4, I argue that there are situations where the semantic coercion of an entity into an event description forces the insertion of an event-denoting head in the syntax proper (cf. N. Asher 2011). I used data from English and Mainland Scandinavian to show that this "vehicle" event exists: 1) In English, vehicle events can be modified by *occasional*, *odd* or *rare*; 2) In Mainland Scandinavian, agreement with subjects that contain the vehicle event appear in the neuter form, implying that nonovert content has been added on top of the noun phrase. Together, these two observations point to the existence of Vehicle. The notion is that there are ways to "save" the syntax and semantics such that the meaning one wishes to express can be encoded in the projection, instead of treating pragmatics, syntax and semantics as entirely different systems. Unlike my conclusion for grinding and portioning, I do believe that this case of entity-to-event coercion can exist in the compositional system.

When approaching research question 3, we can reflect on agreement's

success as an indicator of the underlying structure of noun phrases. In Chapter 2, the neuter form became relevant because it showed that there are nouns in Mainland Scandinavian that do not have a gender feature in the NM they are attached to, and that in these cases, the NM instead contains an atomicity feature. Chapter 4 highlights the special role that neuter has as an agreement form that appears when there is no gender to agree with, either because it is not present in the nominal structure or because it is inhibited by nonovert content blocking the access to the gender feature.

The cases I have considered support a default agreement approach to the neuter form, rather than seeing it as a gender alongside masculine and feminine (or common, in the case of Danish and Swedish). This explains why neuter is the agreement form that appears in, for example, an adjectival copular sentence with a subordinate clause as its subject, or a subject that is just a bare noun. In these cases, because the subject is a clause or a KIP, there is no gender-containing NM for the adjective to agree with, and this is when the neuter suffix *-t* is inserted. In opposition to some other work,[1] my version of the default agreement approach does not depend on the noun (phrase) denoting a kind. Still, one can perhaps say that my syntactic model fits a kind analysis if we only consider bare singular nouns, since I argue that they only make up kind phrases. I showed enough counterexamples to this generalization to comfortably dismiss a kind *requirement* for neuter agreement, but it is still fair to consider the effects of a noun phrase structure in which the smallest, bareboned version denotes an entity kind.

More work still needs to be done. I believe that more languages should be considered before one can gain a full picture of these phenomena. First, I have not yet encountered another language where gender and atomicity are in complementary distribution and affect their surroundings in different ways. This is where it would be helpful to check more non-Indo European languages – classifier and gender systems vary crosslinguistically to such an extreme degree that new discoveries are almost guaranteed to be made.

Aside from the observations I made to support a syntactic vehicle event, it is worth asking what other evidence can be found, maybe especially in

[1] Here I refer to, among others, Enger (2004, 2009, 2013, 2022); Haugen and Enger (2019).

languages other than Mainland Scandinavian and English. In Chapter 4, I provided a short overview of languages that permitted "pancake agreement" if the subject denoted an event. In the chapter, I focused on Mainland Scandinavian, leaving other languages for future work. One challenge that held me back from making direct comparisons between Mainland Scandinavian and the other languages mentioned was that it requires a more careful consideration of the noun phrase structure and agreement system of each language, among other factors. This would have derailed me from my focus on Mainland Scandinavian.

However, Martin et al. (2020) point out two surprising differences between Brazilian Portuguese and French eventive pancake sentences that deserve to be looked into further, using my perspective: 1) Brazilian Portuguese pancake subjects can only be bare nouns, while French pancake subjects are clearly full SDPs; 2) In Brazilian Portuguese pancake sentences, the vehicle event can only be generic, while in French, there is no such restriction. With the noun phrase structure and use of Vehicle that I propose, how can we explain such variation? Also, how do we explain the fact that some languages do not have pancake sentences at all? We could imagine that there are independent syntactic differences between languages that can prohibit them from Vehicle insertion or in some other way restrict what kind of eventive reading is possible, but more detailed, careful considerations would need to be made to see how my framework and proposal fare in explaining this variation.

As a final point, I wish to comment on the argument I made in Chapter 3 that what we call "stages" in the literature are actually formed through Vehicle. In natural language, we are able to take an individual, with its own set of properties, and package it in such a way that new information can be gained about that individual. I proposed that a stage is in reality a nonovert event that takes an individual as its argument, which in essence unites the eventive (but verb-focused) approach of, e.g., Carlson (1977) and the noun phrase approach of Zamparelli (2000). My focus has heavily been on data involving *occasional*-type FAs, though, and it could be beneficial to consider other data, and perhaps whether there exists crosslinguistic evidence for an

overtly pronounced Vehicle, in a noun phrase that can independently be considered to have a "stage" interpretation. My fresh, event-based perspective on the nature of stages has hopefully inspired new avenues for research on how entities appear in the world and how they can be observed.

The thesis has served as an investigation into how much information is in the syntactic structure. I have argued that there is evidence that the syntactic representation of nominal extended projections reflects the zones of cumulative interpretation associated with them. In the representation, a noun structurally builds up from conceptual content through to reference and discourse linking. Even though I argued that structural semantics tracks the syntactic hierarchy in an abstract way, we have also seen different ways in which selectional pressures and real world knowledge can lead to coercive interpretational effects.

This thesis has uncovered a number of distinct types of nominal coercion which I have argued warrant distinct kinds of mechanisms in the grammar. In my analyses, when we see coercion in the form of grinding and portioning, i.e. the use of a noun in an "unexpected" countability setting, this is not the result of additional structure, but when an entity noun phrase ends up denoting an event, a nonovert operator is formally added to the syntax. My conclusion is that, while it is variable whether meaning goes through syntax, the bottom line is that syntax can happily carry semantic content when necessary.

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