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A CONFIGURATIONAL APPROACH TO INTERPRETATION*

1. INTRODUCTION

Can we model the referential properties of noun phrases in a manner which reflects their internal syntactic structure? And would such a theory of noun phrases provide us with valuable insights?

The aim of this paper is to demonstrate that these questions should be answered in the affirmative. Consider first the two English sentences in (1) which both have subjects containing the universal quantifier *all.*

(1) a. All linguists speak at least two languages.
b. All **the** linguists speak at least two languages.

These sentences differ in meaning. The sentence in (1a) is a generic statement about linguists and their ability to speak languages—the subject noun phrase refers to all existing linguists, i.e. the universal set of linguists. The sentence in (1b) on the other hand is a statement about a 'given' or 'familiar' group of linguists, a subset of the universal set, and the subject noun phrase refers to the whole of this set. If for instance the speaker is talking about a meeting at the Faculty of Arts at Discourse University and presenting general information about the people who attended, the most salient interpretation of (1b) would be that it is a statement about the totality of linguists who attended the meeting. The

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sentence in (1a) would however refer to the linguists at the meeting as well as all other linguists in the world.

The difference between the two sentences can be related to the presence of the definite article which has as its core function to relate the denotation of the noun phrase to a contextually given referent, and in fact the referential properties of the subject noun phrase in (1b) are quite similar if not identical, in the relevant respects at least, to those of the subject noun phrases in (2), the first one containing the definite article and the second one a demonstrative.

(2) a. **The** linguists speak at least two languages.
b. **These** linguists speak at least two languages.

In comparison with these sentences, in particular (2a), the presence of the universal quantifier in (1b) appears merely emphatic, stressing the 'totality' reading of the noun phrase. All the same, the semantic difference between the subject noun phrases in (1) can be related both to a an overtly expressed difference (the presence vs. absence of a 'word', i.e. the definite article).

Not all languages have a definite article. Finnish lacks this element, and the sentence in (3) may actually correspond to both of the sentences in (1).

(3) Kaikki kielitietelijät puhuvat kahta kieltä. *Finnish*
all-NOM linguists-NOM speak two-PAR language-PAR
'All (the) linguists speak two languages.'

In this case Finnish has no overt correlate to the semantic distinction which may be expressed by the presence versus absence of the definite article in English. This illustrates the fairly trivial fact that languages differ with respect to their grammatical inventory and with respect to which semantic oppositions are grammaticalized.

The core referential property of the definite article in English may however be expressed also in Finnish, for instance by adding a demonstrative to the subject noun phrase as in (4).

(4) Kaikki nämä kielitietelijät puhuvat kahta kieltä *Finnish*
all-NOM these-NOM linguists-NOM speak two-PAR language-PAR
'All these linguists speak two languages.'

The subject noun phrase in this example will necessarily denote (the totality of) a contextually given set of linguists and not the universal one.

The question then is whether the overtly expressed semantic distinction in (1) has a *covert* correlate in the Finnish sentence in (3) which in turn may have an overt reflex in some cases such as in (4). I will argue that this is the case, and a central task of the discussion to follow will be to explicate how.

Consider next a different issue. The noun phrases in (5) and (6) from Danish and English, respectively, correspond to each other in meaning.

(5)	alle	(*av)	de	tre	lingvister	*Danish*
	all	of	the	three	linguists	
(6)	all	(of)	the	three	linguists	*English*

Danish differs from English in that what we may call the 'partitive' preposition *of* may not intervene between the universal quantifier and the definite article. Danish is representative of Mainland Scandinavian in general in this respect. In English on the other hand, the partitive preposition may be present, and its presence in fact appears to be preferred in American English.[1]

However, disregarding the presence of the partitive preposition, we may observe that the relative ordering of the three determiners in (5) and (6), i.e. the universal quantifier, the definite article, and the numeral, is quite fixed in both Danish and English. The examples in (7) and (8) illustrate that the ordering of constituents in (5) and (6) is the only possible one.

(7)	a.	*alle	tre	de	lingvister	*Danish*
	b.	*tre	alle	de	lingvister	
	c.	*tre	de	alle	lingvister	
	d.	*de	tre	alle	lingvister	
	e.	*de	alle	tre	lingvister	
(8)	a.	*All	three	the	linguists	
	b.	*Three	all	the	linguists	
	c.	*Three	the	all	linguists	
	d.	*The	three	all	linguists	
	e.	*The	all	three	linguists	

One may then ask whether the ordering of the constituents in (5) and (6) is coincidental. Data which suggest so do exist, and it is therefore not immediately clear that some deeper ordering principle should give us the constrained ordering facts witnessed by (5)–(8). For one thing, in (American) English the structure in (9a) is acceptable.

(9) a. all three of the linguists
b. *all three the linguists

In (9a) the numeral precedes the definite article. However, the presence of the partitive preposition *of* is obligatory in this case, cf. (9b), and one might therefore argue that the construction is not immedately comparable to those in (6) and (8).

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[1] I thank Helge Dyvik for pointing this out to me.

Moreover, in Icelandic a noun carrying a suffixed definite article may either intervene between the universal quantifier and the numeral or follow both. This is illustrated in (10).

(10) a. allir málvísindamennirnir flrír *Icelandic*
all linguists-DEF three
b. allir flrír málvísindamennirnir
all three linguists-DEF
Both: 'all the three linguists'

This fact about Icelandic can actually be taken both to parallel and to not parallel the situation in Danish and English: in (10a) the element containing the definite article occupies the same position as in Danish and English, i.e. relative to the other constituents, whereas in (10b) the element containing the *noun* occupies the same position as in Danish and English—and, as we see, it is the same element in both cases.

Examples like (9a) and (10) suggest that the fixed ordering of the constituents we witness in Danish and (varieties of) English does not reflect some universal underlying ordering principle, and that it is to some extent coincidental. However, in the present paper I will take it as an underlying assumption that the ordering is not coincidental, and construct the phrase structural model accordingly. Cases like those in (9) and (10) will then be considered on the background of this.

Once the syntactic domain of the definite article is defined, we may correlate its core semantic property with this domain. In turn, given that we want to argue that the overt reflex of the semantic distinction between the English sentences in (1) has a covert counterpart in the Finnish sentence in (3), one way of capturing this would be to say that the Finnish subject noun phrase in (3) is phrase structurally ambiguous in a way which correlates with its referential ambiguity as well as with the overtly expressed difference in the English sentences in (1). This constitutes the core idea to be explored here. As a first approximation let us consider a suggestive correlation between syntactic domains and classes of determiners.

Within contemporary generative syntactic theories, and in particular what we may call the 'chomskyan' framework (i.e. Principles and Parameter Theory/Minimalism), it is now standardly acknowledged that noun phrases[2] have a domain of functional projections on a par with the domains projected from clausal functional categories such as C and I (AgrS, T, etc.). Szabolcsi (1983), Hellan (1986), and Abney (1987) were some of the first to suggest that determiners head a projection above the NP-level. Since Abney (op. cit.) this projection is generally referred to as 'DP'. Since then other authors, e.g. Shlonsky

[2] Throughout the paper I will use the term 'noun phrase' to refer to what traditionally has been designated by the the label 'NP' and within much of the contemporary generative literature by 'DP'. In other words, by 'noun phrase' I mean the phrasal units which consist of both the immediate projection from the noun as well as the functional projections associated with it. Later on this will be defined as the 'extended projection' of the noun, cf. Grimshaw 1991.

(1991), Guisti (1991), Guisti and Dimitrova-Vulchanova (1996) have suggested that in addition universal quantifiers (e.g. *all, every, each*) head a separate functional projection normally referred to as 'QP' above the DP-level. Moreover, Ritter (1991) has proposed a functional projection, 'NumP', situated between DP and NP and associated with the morphological category number.

If we ignore the fact that additional functional projections have been proposed and also that the various proposals are not always compatible with each other, by amalgamating them we could say that the literature offers the structure in (11) as the maximal extended projection for noun phrases.

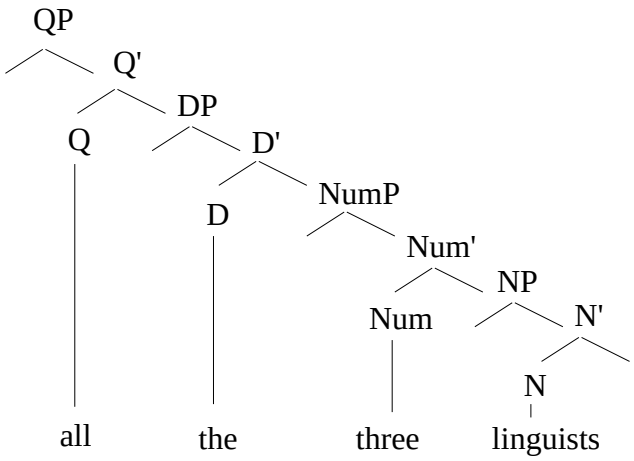
(11) [QP... [DP... [NumP... [NP...]]]]

In most cases these noun phrase internal functional projections have been motivated on syntactic grounds, and let us assume that the structure in (11) is basically right as the maximal projection for noun phrases.

Moreover, let us assume that there is a clear affinity between numerals and the morphological category number, a not altogether implausible conjecture, and that the syntactic locus of numerals is in NumP.[3] Accordingly, the noun phrase in (12) could be analyzed as in (13).

(12) all the three linguists

(13)



Given this analysis, there is an obvious correlation between the functional projections in (13) and a certain semantic classification of determiners: *three* belongs to the class of cardinal determiners, *the* to the class of definite determiners, and *all* to the class of universally quantifying determiners.

The different types of determiners yield different types of semantic properties for the noun phrase they occur in. As observed by Milsark (1974, 1977) a common property

[3] In fact Abney (1987) originally proposed a functional projection intervening between DP and NP which hosts numerals and other indefinite determiners as well as comparatives and superlatives. He however labelled this projection QP.

of noun phrases containing universally quantifying and definite determiners is that they normally are excluded from occurrence as the postverbal argument (or 'the postcopular noun phrase') of existential sentences in English and a number of other languages. Noun phrases with (only) a cardinal deteminer on the other hand are not excluded. This is illustrated in (14).

(14) There were three linguists/*the linguists/*all linguists at the meeting.

Milsark referred to this phenomenon as the 'Definiteness Restriction'. It has later also been called the 'Definiteness Effect' (cf. for instance Safir 1985, 1987; Belletti 1988), and there exists an enormous amount of literature on this topic which it would lead too far to review here.[4] (See e.g. Safir 1987 and Vangsnes 1994b for overviews.)

Based on whether or not a noun phrase is allowed to occur as the postverbal argument of an existential sentence, Milsark (1977) made a distinction between 'weak noun phrases', which are allowed, and 'strong noun phrases' which are disallowed. Based on this distinction Barwise and Cooper (1981) termed the determiners that occur in the two types of noun phrases 'weak' and 'strong', respectively, and they developed a formal account of the semantic properties the determiners yield. In that respect universally quantifying determiners and definite determiners both came to belong to the class of 'strong determiners' whereas cardinal determiners belong to the class of 'weak determiners'.

In turn the class of weak determiners would comprise a variety of determiners which strictly speaking do not entail cardinality in a narrow sense, i.e. as 'specifying a number' (although perhaps arguably so in a wider sense of 'cardinality'). Examples of such determiners are *some*, *many*, *few* etc.

By combining Milsark's test for noun phrase types and Barwise and Cooper's terminology for determiners we would arrive at the following classification of determiners.

(15)

strong		weak
' '	'definite'	
all	*the*	*one, two three...*
each	*this*	*many*
every	*that*	*some*
both	*my*	*a*
[...]	[...]	*no*
		[...]

Table 1: Classification of determiners as strong and weak

Above we questioned whether the ordering of determiners within a noun phrase is coincidental. The assumption is that it is not, and in turn, on the account that the determiner

[4] The label(s) assigned to the restriction is somewhat unfortunate as it is quite clear that it is not formal 'definiteness' as such that is not allowed on the postverbal argument, but rather a certain semantic property, in my opinion the referential property 'uniqueness' (see Vangsnes 1994b for extensive discussion).

classes yield distinct and characteristic semantic properties for noun phrases, we may ask whether the correlation between determiners and syntactic domains, i.e. functional projections, suggested by the diagram in (13) is coincidental. Again we assume that it is not, and we do that although there are many cases where all three determiner types cannot co-occur as they do in (12).[5]

This then gives us both the starting point and the goal for our investigation: we assume, and wish to show, that the ordering of determiners within the noun phrase follows certain syntactic principles, and that these syntactic principles have a semantic basis.

Before we can consider how referential properties are correlated with phrase structural entities, a discussion of referentiality is in order. Section 2 is devoted to this. In section 3 we return to the phrase structural schemata in (11) and (13). This section presents the main aspects of the theory to be advocated. In section 4 we consider articles and article systems in the light of the theory proposed. Section 5 makes some observations concerning restrictive and non-restrictive relatives and the referential properties of noun phrases they occur in. These observations are exploited in various places in section 6 which takes a closer look at definite determiners and the category 'definiteness'. Although the discussion of the theory advocated here is centered around noun phrases, it is intended to apply more generally, and in section 7 we discuss how the theory can be extended to the clausal domain, and we do that by considering certain syntactic and semantic aspects of infinitivals as opposed to finite clauses. Section 8 concludes the paper.

2. REFERENTIALITY

2.1. *Strong noun phrases*

The core referential property of strong noun phrases is that they carry the presupposition that their referents exist. This presupposition is fairly indirect and not logically necessary, but the listener must at least take it that the speaker is referring to entities assumed to exist.[6] This presupposition of existence of course refers to either the real or some fictiti-

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[5] Consider some examples of ungrammatical combinations in English.

(i) a. *the a car
b. *every this car
c. *each one car
d. *these some cars

[6] The use of a strong noun phrase to denote an empty set may come unexpected on the part of the listener and yield comic effects such as in the following example.

(i) **All boys** at the party were drunk, but there were no boys at the party!

An exception in this respect seems to involve the strong determiner 'free choice' *any*—since it may not occur in the postverbal argument of existential sentences, it is strong according to the Milsarkian test.

(ii) *There was any boy at the party.

Consider the following grammatical use of the determiner.

(iii) **Any teacher** will yell at a disobedient pupil like that.

Free choice *any* is arguably a universal quantifier in that it quantifies over universal sets, but it does not seem to entail a presupposition of existence in the same way as *every* and *all.* Rather it carries the infor-

ous world, hence allowing noun phrases like *all unicorns* and *the present King of France* to have the same basic semantic properties as noun phrases where the noun denotes kinds of entities that no doubt exist.

One way to capture this core referential property of strong noun phrases is to say that they typically denote referents that are identifiable for both the speaker and the listener. Consider again the sentences in (1) and assume the same context as above (i.e. a faculty meeting at Discourse University).

(1) a. All linguists speak at least two languages.
b. All **the** linguists speak at least two languages.

Upon hearing these sentences the listener can identify the referents of the subject noun phrases, i.e. the universal set of linguists in (1a) and the totality of the contextually given set of linguists in (1b). In that respect strong noun phrases can be said to be 'uniquely referring'.

It is an important point that the listener need not be able to identify the actual (real or possible world) referents of the strong noun phrases. Let us say that the sentence in (1b) were preceded by the one in (16).

(16) There are philosophers, historians, and linguists at the meeting, and it sure constitutes a collection of skilled people.

In that case the extension of *all the linguists*, which the listener is capable of identifying, is the one holding between that noun phrase and the set of linguists introduced by the noun phrase *linguists* in the preceding sentence. Whether or not the listener would be able to point these linguists out on a photo or on the street is irrelevant. What is relevant is that *all the linguists* can only refer to whichever linguists were at that particular meeting and not to any other set of linguists.

Another important point is that the extension of a strong noun phrase, which by definition then is identifiable for the listener, is not dependent on a discourse referent having been introduced in the linguistic context. The extension may also be *inferred* by the listener by virtue of his knowledge and/or conventional conceptions of the world. For instance, consider a different text where the sentence in (1b) is not preceded by (16), but rather by (17), and when there has been no previous mention of linguists.

(17) There's a meeting going on at the Faculty of Arts and it sure constitutes a collection of skilled people.

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mation that *if* the referent exists it will have a certain property given a certain situation. We will not discuss the semantics of free choice *any* in any detail in the present paper, but we will return to it in section 6.3 in connection with a discussion of certain interesting issues pertaining to the various universally quantifying determiners in Norwegian. For discussion of free choice items see Sæbø (1999) andreferences cited there.

In this case, upon hearing (1b) the listener will infer from his knowledge that faculties of arts often comprise departments of linguistics, and hence linguists, that there were linguists at the meeting.

Actually, the listener need not even have the knowledge just mentioned—the existence of linguists at the meeting will be inferred anyway, unless the listener from a communicative point of view is highly non-cooperative. On the other hand if the first thing the speaker utters upon meeting her speech partner (i.e. the listener) is the sentence in (1b), the listener will have great difficulty, and understandably so, in identifying the extension of the noun phrase *all the linguists* (unless, say, the two speech participants had had a vivid discussion about certain linguists at some previous point in time), and uttering the sentence would therefore be communicatively infelicitous.[7]

Returning now to the sentence (1a), the reference of the subject noun phrase in this example will always be inferred. Its extension need not relate to a previously introduced discourse referent and actually not to an inferred discourse referent either. However, by its form the noun phrase conveys the information that the totality of a universal set is denoted, and the listener will know this. Accordingly, the listener will always be able to retrieve a referent for the noun phrase no matter what the context.

Stated more explicitly then, the difference between the two sentences in (1) is that the subject noun phrase in (1b) denotes a referent which is either contextually given or contextually inferred whereas the subject noun phrase in (1a) does not. Both noun phrases however have an extension which can be identified by the listener.

Now, noun phrases containing the definite article but no universal quantifier may have referential properties similar to those of universally quantifying noun phrases without a definite article. Consider the sentence in (18).

(18) The lion is dangerous.

The subject noun phrase of this sentence is ambiguous. It may refer to a particular lion, either contextually given or inferred, or it may refer to lions in general. In other words it may refer generically, and on the generic reading there is no contextually given or inferred discourse referent, and hence no extensional relation between the use of the noun phrase

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[7] The relevance of 'inference' can be illustrated with a variety of examples. I will mention two additional ones. Take first the example in (i).

(i) I know a couple in Toronto. **The wife** is a teacher.

It is a (conventional) fact about the world that couples consist of a husband and a wife. The subject noun phrase in the second sentence therefore denotes a subpart of the discourse referent introduced by the weak noun phrase *a couple in Toronto*, and the listener can identify this extensional relation.

Consider next the sentence in (ii), which is not true about the real world.

(ii) The present King of France is bald.

However, this sentence could all the same be a part of a felicitous communication exchange, and the listener would then infer (a) that there exists a kingdom named France, and (b) that since kingdoms have only one king the subject noun phrase in (ii) denotes the one individual which happens to be the King of France. For the listener to identify a real world referent for the noun phrase would be a matter of possessing the appropriate knowledge.

and any discourse referent. In that sense the reference of the definite noun phrase patterns with that of a universally quantifying noun phrase with no definite article as in (1a) and as in (19).

(19) All lions are dangerous.

(18) and (19) are nevertheless not semantically equivalent. The sentence in (18) asserts that being dangerous is a prototypical property of lions whereas the sentence in (19) asserts that the totality of existing lions have this property. Hence, the truth conditions for the sentences differ: whereas the sentence in (19) is falsified once a tame and harmless lion is found, such a discovery would not falsify the sentence in (18) since the great majority of lions will still be dangerous.

The semantic difference between universally quantifying noun phrases and generically referring definites will not be studied in depth here, but the parallel between them, i.e. the fact that neither need have an extension to a discourse referent, will be important later on.

Let us next consider the referential properties of weak noun phrases.

2.2. *Weak noun phrases and specificity* [8]

There is a long-standing tradition for claiming that weak noun phrases are ambiguous between two readings, often referred to as "specific" and "non-specific". The general intuition is that on the specific interpretation of a noun phrase the speaker has a particular individual or group of individuals in mind, whereas on the non-specific reading he does not. This is especially clear when the noun phrase is interpreted relative to an operator, such as the quantified time adverbial in (20).

(20) Every day John talked to a logician.

In (20) *a logician* may be interpreted as referring to a particular logician who is such that John talked to him every day. Alternatively, there may have been a different logician for each day. On the first reading the noun phrase takes scope over the time adverbial, and this wide-scope reading is often referred to as "specific".

Several authors however claim that weak noun phrases are ambiguous also when there is no operator. In (21) the object noun phrase occurs in a context of that kind.

(21) John talked to a logician about this problem.

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[8] Apart from minor changes and adaptations this subsection (2.2) is identical to section 4.2 in Vangsnes (1994b).

According to Fodor and Sag (1982) a sentence of this kind may assert either that the set denoted by the weak noun phrase is not empty, or that the noun phrase has a particular referent which is not specified for the listener, and they term these readings 'quantificational' and 'referential', respectively.

Although Fodor and Sag reserve the term 'specific' for wide-scope readings of indefinites, their 'referential' reading may be correlated with what many others refer to as "specific". It has for example been suggested (Karttunen 1969; according to Abbott 1993) that on this 'specific' reading, (21) could be an appropriate answer to the question *Who did John talk to about this problem?*, whereas on the non-specific reading it could be an answer to the question *What kind of a person did John talk to about this problem?*.

Furthermore, it is commonly assumed that adjectives like *certain, particular* and *specific* yield unambiguously specific interpretations of the noun phrases in which they occur. Hence, on the specific reading, (21) could be replaced by the sentence in (22).

(22) John talked to a certain logician about this problem.

This sentence is not an appropriate answer to the question *What kind of person did John talk to about this problem?*, indicating that a non-specific reading of the weak noun phrase *a certain logician* is not available.

In spite of the general agreement about weak noun phrases being ambiguous, linguists seem to perceive the ambiguity in different ways both informally and formally. Let us next consider a few of the approaches offered in the literature before I explicate my own.

2.2.1. *The partitivity view*

Milsark (1977) claims that weak noun phrases are ambiguous between what he termed a 'weak' and a 'strong' interpretation. A weak reading can be explicitly signalled by a phonetically reduced determiner, as illustrated in the sentence given in (23a), whereas a strong interpretation requires a full phonetic form, as in (23b).

(23) a. Sm salesmen walked in.
b. Some salesmen walked in.

Milsark describes the sentence in (23a) in the following way:

> In the natural reading of this sentence, nothing is being said beyond the statement that an act of entering has transpired, and that it was performed by some indeterminate but probably not large number of salesmen. (p.18)

About the sentence in (23b), taken to represent the strong interpretation, Milsark claimed:

> This sentence asserts that of the class of salesmen, some subset of appropriate size to be referred to as "some" has performed the action of entering, and carries the strong suggestion that some other group, by contrast, remained outside or is in some other way excluded from the situation described. The meaning of *some* in such cases might be paraphrased "some (but not others)". In this reading, the sentence is very nearly synonymous with [the sentence in (24)]. (p.18)

(24) Some of the salesmen walked in.

Moreover, Milsark claims that the strong interpretation is not available in existentials, as for example in (25).

(25) There are some salesmen in the room.

Normally, a partitive noun phrase like *some of the salesmen* would be ungrammatical in this context; witness (26).

(26) *There are some of the salesmen in the room.

Enç (1991) gives an account of ‘specificity’ which in part may be taken as a formalization of Milsark's distinction between weak and strong interpretations of weak noun phrases. Her goal is to establish a definition of specificity that may be applied without reference to scope relations. Above I mentioned that weak noun phrases are argued to be ambiguous also when they do not participate in scope relations. Moreover, as shown by Hintikka (1986), noun phrases with adjectives like *certain* may very well have narrow scope. The examples in (27) and (28) are Hintikka's (3) and (4) (p. 332).

(27) Each husband had forgotten a certain date—his wife's birthday.
(28) A certain sum of money will be paid for each quantity of this commodity.

In these examples the noun phrases containing *certain* must be interpreted relative to the universally quantified expressions, i.e. they have become what is sometimes called "quantified away". *A certain date* in (27) for instance cannot be interpreted as one specific date, say April 1, which is such that each of the contextually relevant husbands forgot it.

Enç's alternative is to define specificity in terms of discourse relations, exploiting the File Change Semantics of Heim (1982, 1983). She suggests that all noun phrases carry a pair of indices which mark their discourse referents and which roughly correspond to the file cards of Heim. Each of these indices carries a definiteness feature. The first index represents the discourse referent of the noun phrase, and the second determines the specificity of the noun phrase by showing its connection to other discourse referents. Furthermore, the indices are related by inclusion, so that if the second index is co-indexed with a familiar discourse referent, the discourse referent of the noun phrase will be

specific. Enç's definition of specificity is given in (29) where the index *i* is the index for the discourse referent of the noun phrase and *j* the index for other discourse referents.

(29) Every $[_{NP}\ \alpha]_{<i,\ j>}$ is interpreted as $\alpha\ (x_i)$ and
$x_i \quad x_j$ if $NP_{<i,\ j>}$ is plural
$\{x_i\} \quad x_j$ if $NP_{<i,\ j>}$ is singular

Definite and universally quantified noun phrases will always be specific since they denote the whole of a contextually given or presupposed set (i.e. $x_i = x_j$). Moreover, partitive noun phrases turn out to be specific since they denote a subpart of the referent denoted by the contained noun phrase, which in turn is definite. Enç argues that a partitive has the structure [NP [PP [NP]]]. Accordingly, we may represent the indexing of a partitive such as *some of the salesmen* in (30).[9]

(30) $[_{NP}$ some *e* $[_{PP}$ of $[_{NP}$ the salesmen$]_{<i,\ j>}]]_{<h,\ i>}$

Moreover, Enç argues that simple weak noun phrases on their specific reading are covertly partitive, denoting a subpart of a given set, and in line with Milsark, she claims that on this reading weak noun phrases are not allowed in existentials.

As Enç recognizes, a problem for this analysis is that noun phrases with *certain* do not seem to require partitive interpretations. Consider her example (59), given here as (31).

(31) The teacher gave each child a certain task to work on during the afternoon.

Enç says about this sentence that it "is acceptable even if the set of relevant tasks has not been introduced into the domain of discourse previously" (p. 19, footnote omitted). However, Enç argues that partitivity is only one way of relating weak noun phrases to familiar referents. Following Hintikka (1986) she suggests that noun phrases with *certain* and similar adjectives may be interpreted by a function relating them to other objects. In (31) *a certain task* is related to the objects denoted by *each child*.[10] The relation between such non-partitive, specific noun phrases and familiar objects is licensed either by what Enç calls an "intentional assigner", in (39) by *the teacher* in combination with the verb *give*, or by being explicitly expressed, for instance by a relative clause as in (32), which is Enç's (4a).[11]

(32) John wants to own a certain piano which used to belong to a famous pianist.

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[9] Enç herself does not give such an explicit analysis of partitives.
[10] On Hintikka's account this relation would be rendered as:
(i) $(\ f)\ (\ y)\ (y$ is a child $\rightarrow\ y$ was given $f(y))$
[11] Enç (pp. 20-21) also argues that the relation may be implicit.

Thus, she assumes there are at least two ways in which weak noun phrases may relate to the discourse and thus get specific readings: either by denoting a subgroup of a familiar referent (partitively specific) or by standing in some other recoverable relation to the discourse (relationally specific). The latter type of specific noun phrases, Enç claims (p. 21), does not involve existential presupposition, and she argues that this is the reason why noun phrases with *certain* and similar adjectives may occur in existentials. Consider (33), which is Enç's (67).

(33) There is a certain man at the door who claims to be your cousin from Albania.

At this point one might wonder whether Enç is treating two distinct notions, 'partitivity' and 'specificity', as one. She herself admits that the partitivity view cannot account for all instances where weak noun phrases are ambiguous. Moreover, a legitimate question seems to be whether the partitive reading on the whole is the relevant reading to be correlated with 'specificity'.

Abbott (1992) points out that although subjects of individual-level predicates[12] must receive a specific reading (note, as illustrated in (34), the oddness of a phonetically reduced determiner), even non-partitive noun phrases with the determiner *some* do not necessarily presuppose the existence of a larger set when occurring in such positions. (35) could begin a discourse, but (36) could not, and it seems somewhat farfetched to consider the two sentences synonymous.

(34) ?*Sm salesmen are intelligent.
(35) Some salesmen are intelligent.
(36) Some of the salesmen are intelligent.

Thus, the specific reading of the subject in (35) cannot be explained by reference to partitivity.

Moreover, Enç's claim that noun phrases with *certain* do not presuppose existence seems to be counter to fact. Consider (37).

(37) John didn't talk to a certain logician about this problem.

It is not possible to interpret this sentence as something like *There is not a certain logician to whom John talked about this problem*. The only possible way to interpret the noun phrase within the scope of the negation is a reading where the whole proposition is

[12] "Individual-level predicates" typically denote permanent states, and are contrasted with "stage-level predicates", which denote temporary states. See Kratzer (1989) and Diesing (1992) for discussions of the distinction.

negated (i.e. informally: *It is not the case that John talked to a certain logician about this problem*).[13]

In fact, Enç herself gives an example suggesting that noun phrases with *certain* presuppose the existence of their referents. Her example (55), attributed to Hiroaki Tada and rendered here as (38), shows that noun phrases with *certain* cannot be predicative.

(38) John married a (*certain) car mechanic, which Casey also is.

The reason, we might suspect, is that a predicative noun phrase must be non-referring, denoting properties. Thus, the reason why noun phrases with *certain* and similar adjectives may occur in existentials cannot be that they do not presuppose existence.

2.2.2. *A referential view*

As an alternative to Enç's account of specificity, I wish to follow Abbott (1992, 1993) who proposes that 'specificity' be defined in terms of speaker intentions, capturing the common pre-theoretical assumption that the speaker has a particular individual in mind when a noun phrase is specifically referring. On this view a specific noun phrase would normally introduce what Abbott calls an "ordinary discourse referent", a term which requires an explanation. Consider the following sequences.

(39) (i) John is looking for **a unicorn**. (ii) When he finds **one** he will ride on **it**. (iii) #**Its** name is Unix.
(40) (i) John is looking for **a unicorn**. (ii) **Its** name is Unix.

From the point of view of the listener, the noun phrase *a unicorn* is potentially ambiguous between a specific and a non-specific reading in both examples at the point where only the first sentence has been uttered. On the specific reading the sentence asserts that John is looking for a particular unicorn. On the non-specific reading John is merely looking for an object which has the property of being a unicorn. When (39ii) is uttered, the ambiguity is resolved in favor of the latter reading since *one* makes it clear that the finding of any unicorn would make John accomplish his search. At the same time we enter a hypothetical mood where *one* introduces a discourse referent that can be determined as something like *a unicorn which is such that John may find it*. As long as the hypothetical mood is maintained, it is possible to refer to this discourse referent. This is what *it* in (39ii) does. However, when (39iii) is uttered the hypothetical mood cannot be sustained, since this sentence presupposes that the naming relation holds for one particular unicorn. This sentence is therefore not a well-formed continuation since the possessive pronoun cannot refer to the discourse referent introduced by *one*. On the other hand, a sentence like *Moreover, he intends to name it Unix* would be well-formed since it does not break the

[13] This is sometimes called *external* or *denial* negation (cf. e.g. Prince 1981: 81-83).

hypothetical mood[14]. In (40) the situation is different. Here no hypothetical sequence intervenes between *a unicorn* and *its name*, and the possessive pronoun may be coreferential with *a unicorn*. The uttering of (40ii) resolves the ambiguity of *a unicorn* in favor of the specific reading.

Following Abbott (1992: 3-4), I will use the term "ordinary discourse referents" for discourse referents that do not belong to a hypothetical or irrealis mood. There is especially one domain in which weak noun phrases fail to introduce an ordinary discourse referent, namely within the scope of negation. Above I mentioned that noun phrases with *certain* cannot be interpreted as being under the scope of negation unless the whole proposition is negated. Furthermore, consider the following sequences.

(41) John found three unicorns which he and his friends could ride on: Unix, Corny, and Spiralius.
(42) John couldn't find three unicorns which he and his friends could ride on: #Unix, Corny, and Spiralius.

A listing of referents will make it explicit that the speaker has a certain individual or group of individuals in mind, and in (41) the listing of the unicorns is possible because a specific reading of the noun phrase *three unicorns* is available. In (42) the listing is infelicitous because negation together with the modality of the relative clause fail to assert the existence of three unicorns. Hence, the noun phrase *three unicorns* cannot establish an ordinary discourse referent, and accordingly it cannot get a specific reading.

Note that weak and strong noun phrases differ in this respect. The sentence in (43) does presuppose the existence of three unicorns, and listing their names is felicitous.

(43) John couldn't find the three unicorns which he and his friends could ride on: Unix, Corny, and Spiralius.

This is in accordance with what we have said previously about the difference between strong and weak noun phrases. Strong noun phrases presuppose the existence of a denotatum, whereas weak noun phrases establish one. Whether or not this established denotatum exists is sensitive to several factors, negation being one.

In essence, on the view of specificity that I have advocated, a noun phrase is specific when the speaker assumes that there is a relation between the noun phrase expression and actual entities. Needless to say these entities may either belong to the actual world or some imaginary model of the world that includes e.g. the existence of unicorns (not to be confused with hypothetical moods as described above).

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[14] Whether or not the hypothetical mood may be sustained is of course sensitive to tense and (grammatical) mood. For instance, it seems acceptable to substitute (47iii) with *Its name will be Unix*, although it implies either that John will name whichever unicorn he finds Unix, or that the narrator can foresee the future and therefore knows which unicorn John will find.

This account of specificity may appear similar to the description of strong noun phrases as presupposing the existence of their referents. In my opinion, however, there is an important difference. On the specific interpretation of weak noun phrases the speaker assumes a relation between the noun phrase and actual or imagined entities. The listener, however, is not able to identify the relation assumed, unless he is omniscient (and hence knows the intentions of the speaker) or unless he by some other means has acquired this knowledge without the speaker knowing it.

With strong noun phrases, on the other hand, the listener will be able to identify the extension. This gives us a fairly traditional view of the different modes of referentiality, which can be illustrated by the following table where '+' indicates that the reference of the noun phrase is identifiable and '–' that it is not.[15]

(44)

	speaker	listener
unique	+	+
specific	+	–
non-specific	–	–

Table 2: Referentiality as givenness for speaker and listener

This view of specificity seems to pattern with the referential readings of weak noun phrases in non-modal contexts argued for by Fodor and Sag (1982). However, as mentioned above, they reserve the term 'specific' for wide-scope readings of weak noun phrases.

A question that arises is whether it is possible for a noun phrase to be specific in the referential sense argued for here while still having narrow scope. Above we saw that noun phrases with *certain* may have narrow scope. Consider one of Hintikka's examples, repeated here.

(27) Each husband had forgotten a certain date—his wife's birthday.

There is an important difference between the failure to pick out one particular date in this example, and the non-referentiality of weak noun phrases under the scope of negation, as e.g. in (42), partially repeated here.

(42') John couldn't find three unicorns which he and his friends could ride on.

Whereas the latter sentence fails to assert the existence of individuals denoted by the weak noun phrase, the same cannot be said about the sentence in (27). Rather, this particular sentence asserts the existence of certain dates, and, moreover, their identity is in principle discoverable given the appropriate knowledge about each husband and his wife. Thus, we

[15] There is a fourth possible setting here, i.e. one where the reference is identifiable for the listener but not for the speaker. One could argue that this is in fact the reference of *wh*-elements. Such elements are typically used in situations where the speaker does not know the identity of someone or something, but assumes that the listener does.

may say that in such cases what is known to the speaker but not to the listener is the relation (or function in Hintikka's terms) between the weak noun phrase and its operator. Furthermore, consider the following example.

(45) John is looking for a unicorn, but I don't know which one.

This could look like a counterexample to the view of specificity I have outlined as the speaker here does not have any particular unicorn in mind, but merely reports that John has. Still, we could argue that the speaker has in mind whichever unicorn John has in mind, and that the identifiability of the referent is a matter of acquiring the appropriate knowledge. Thus, it seems that we must distinguish two dimensions in our account of specificity: one involving the intentions of the speaker, and one involving intentions of others reported by the speaker.

2.3. *A test for specificity*

An important point about the present approach to specificity is that specific readings of weak noun phrases are assumed to be generally available in existential sentences. Consider (46).

(46) There were three kids playing in the street: Bill, Ann and Peter.

The listing of the referents in this example is quite felicitous, and accordingly we would assume that *three kids* has a specific reading (i.e. that the speaker had certain referents in mind).

Now, as noted above (cf. the discussion of example (37)) a weak noun phrase cannot be interpreted as specific while at the same time being within the scope of (internal) negation. This is especially clear when we consider negated existential sentences.

The communicative function of existential sentences can be argued to be to predicate the existence of the referent denoted by the predicate internal noun phrase. Accordingly, we may say that negated existential sentences predicate the *non*-existence of the referent denoted by the predicate internal noun phrase. If then a specific reading of a weak noun phrase presupposes the existence of the referent it denotes, it follows that inherently specific noun phrases are impossible in negated existential sentences. (47b) is only felicitous as an echo kind of negation of (47a), i.e. paraphrasable as *It is not the case that there is a certain psychiatrist waiting in this office.*

(47) a. There is a certain psychiatrist waiting in this office.
b. *There isn’t a certain psychiatrist waiting in this office.

Thus, we have a test for specificity: if adding negation to a well-formed existential sentence leads to ungrammaticality, we may take it that the predicate internal noun phrase *must* be specifically referring.

2.4. *Strong noun phrases and discourse anaphoricity*

As we noted in the introduction strong noun phrases can normally not occur as the postverbal arguments of existential sentences in English—that holds for both definites (including proper names, possessive noun phrases, demonstrative noun phrases, i.e. 'definite descriptions') and for universally quantifying noun phrases. Some examples illustrating the Definiteness Effect are given in (48).

(48) a. There is a man/*the man/*every man/*Peter in the room.
b. There are men/*those men/*all men/*my men in the room.

Accordingly, we cannot use our test to find out whether strong noun phrases are specifically referring or not.

However, it seems that we can draw certain parallels between strong noun phrases and specifically referring weak noun phrases based on the preceding discussions. In section 2.1 we investigated the difference between universally quantifying noun phrases with and without the definite article. The sentences in (1) are repeated here.

(1) a. All linguists speak at least two languages.
b. All **the** linguists speak at least two languages.

A common property of (non-generic) definites and specifically referring weak noun phrases as conceived of here, is that both may establish ordinary discourse referents. The difference between the two noun phrase types is that the extensional relation holding between a definite noun phrase and the discourse referent is identifiable for the listener, whereas the same is not the case for the extensional relation between a specifically referring weak noun phrase and its discourse referent.

Let us conjecture that 'having an ordinary discourse referent' is what specificity is all about. That is compatible with the findings of the discussion above and it seems to capture the common idea that when a noun phrase is specific the speaker has a specific referent in mind. On that account we may say that what definites and specifically referring weak noun phrases have in common is that they are 'discourse anaphoric'.

Now, coreference may obtain between a pronoun and the referent of a universally quantifying noun phrase with no definite article. Consider the following examples.

(49) a. **All Swedes** speak English quite well. **They** learn it at school.
b. **All Swedes** speak English quite well. #**They** learned it at school.
c. **All the Swedes** speak English quite well. **They** learned it at school.

Although the bold-faced pronoun in (49a) successfully refers to the same referent as the universally quantifying noun phrase, the extensional properties are not determined within the discourse as such, and we may therefore claim that the referent established is not an

ordinary discourse referent. In that respect there is a certain parallel with referents established by weak noun phrases in a hypothetical/irrealis mood, and notice the effect of changing the tense of the predicate for the pronoun as in (49b): if the pronoun is to be coreferent with the universally quantifying noun phrase it seems that the predicate has to denote a generic state-of-affairs, i.e. not an event. On the other hand, once the universally quantifying noun phrase contains the definite article as in (49c), an event denoting predicate is fine.

It seems then that the pronoun in (49a) is generically referring, and there arguably is a parallel between universally quantifying noun phrases and generic noun phrases with respect to coreferent pronouns. Consider the following examples.

(50) a. **The potato** originally came from South America, and **it** became a blessing for the peoples of Northern Europe.
b. **The potato** originally came from South America, and **it** was consumed at a dinner party in London last week.
c. **The potato** originally comes from South America, and #**it** was consumed at a dinner party in London last week.

Although the bold-faced pronouns in these examples are coreferent with the subject noun phrase of the first sentence, it is quite clear that they refer quite differently. It also seems quite clear that the difference can be attributed to the predicates for the pronoun.

In (50a) we have an individual level predicate which allows both a generic reading and a regular discourse anaphoric reading for the pronoun, and since the predicate of *the potato* in that example also allows a generic reading, both a generic interpretation and a regular discourse anaphoric, unique interpretation are allowed for the two coreferent subjects. In (50b) on the other hand the state-of-affairs entails a specific event which in turn requires that the reference of *it*, and thus *the potato*, be to one particular potato given in the context. If we however create a tense mismatch between the two sentences such as in (50c), the most natural reading of *the potato* will be the generic one, it is then difficult to obtain coreference between the pronoun and the definite.

Although the truth conditions for generic noun phrases and universally quantifying non-definite noun phrases differ (cf. section 2.1), the preceding discussion suggests that the two noun phrase types share central referential properties. A pronoun may refer to their referents, but the coreference is clearly dependent on special grammatical and situational contexts, and does not involve an 'ordinary discourse referents' as conceived of here.[16]

[16] Consider also the example in (i) involving a weak noun phrase with a negative determiner.
(i) There were no students at my lecture. I had forgotten that I had given **them** a day off.
The weak noun phrase *no students* does not establish a discourse referent, and although the bold-facedpronoun in the second sentence arguably denotes a set of students it cannot be the empty set denoted by *no students*. In this case the pronoun establishes, and denotes, a discourse referent of its own, and the content of the denotation is inferred from the context.

We now have a fairly good understanding of what the notions ‘uniqueness’ and ‘specificity’ entail. Let us next consider another aspect of how noun phrases refer: countability.

2.5. *Countability and the mass/count distinction*

Noun phrases may denote sets consisting of either individualized or non-individualized elements. The latter may appropriately be referred to as “masses”. As an illustration, consider the examples in (51) which we could imagine overhearing at a restaurant.

(51)
a. I want beer.
b. I want a beer.
c. I want the beer.
d. I want that beer.
e. I want beers.
f. I want three beers.

Certain nouns typically denote masses, and such nouns are normally referred to as “mass nouns”. Loosely put we may say that mass nouns typically denote entities that are not individualized. *Beer* is a mass noun, and the sentence in (51a) where the object noun phrase does not contain any determiner, asserts that the speaker wants to have an unspecified quantity of the kind of liquid we refer to as “beer”. Such a noun phrase, i.e. a mass denoting noun phrase consisting of a singular noun, is traditionally referred to as a “mass term”.

The liquid beer may however be individualized if put in certain types of containers. The noun phrase *a beer* in (51b) denotes such an individualized entity, and it is a conventional fact about the world that the referent of the noun phrase would be either a bottle, a glass, or a can containing the liquid beer. Any container would not do, however—it would normally be somewhat odd to ask for a case or a cag of beer by using the noun phrase *a beer*.

If we compare the noun phrase in (51c) with the ones in (51a) and (51b), it seems that it may refer to both an individualized and a non-individualized instance of beer. The speaker could imaginably be asking for a contextually given glass of beer. We could picture a situation where the speaker had ordered a glass of beer and where the waiter by mistake had put it on the wrong side of the table—sentence (51c) would then be a possible and appropriate answer when the person sitting on that side of the table asks the speaker what she wants. (Neither (51a) nor (51b) would be equally appropriate.)

The non-indvidualized reading of the noun phrase *the beer* could for instance be one where the sentence in (51c) is the conclusion given by the speaker to the waiter after the latter has told the speaker that they serve several kinds of wine, but only one kind of

beer, and perhaps he has also explicated which brand of beer they have. In that case *the beer* does not denote an instance of beer contained in a glass or a bottle.

The ambiguity between an individualized and non-individualized reading is also present in the sentence in (51d) where the noun phrase contains a demonstrative. If the speaker points at a particular brand label among the beers listed in the menu, the noun phrase *that beer* has a non-individualized reading. However, if the speaker points at a particular glass of beer, we get the individualized reading.

Finally, in the example in (51e) where the mass noun carries plural morphology the object noun phrase must be interpreted as denoting a set of individualized instances of beer. In that respect there is a parallel between the indefinite article and plural morphology. The same holds for the example in (51f) where the noun phrase contains a numeral—a mass reading of that noun phrase is not possible.

Another way of describing the difference between an individualized and non-individualized set is to say that the former is countable or counted, whereas the latter is not. The examples in (51), and the discussion of them, tell us that mass nouns can be used to refer to both countable and uncountable entities. Not all nouns seem to have this ability. Consider the example in (52).

(52) I want *(a) chair so that I don't have to eat my fish standing!

In this example the indefinite article, or some determiner[17], is required. Now, chairs are typically perceived as individualized and delimited entities, and hence come in countable sets, and it thus does not seem entirely farfetched to relate the requirement for a determiner in (52) to that fact and to draw a parallel between the denotational property of the object noun phrase there and the noun phrases in (51) where the noun *beer* co-occurs with a determiner, and where the referent is or may be interpreted as a countable. Having no determiner with a noun in English argument phrases entails that the noun phrase should be interpreted as denoting a non-individualized entity, and that is hard to conceive of for the kind of entitiy denoted by the noun *chair*.

The label for nouns like *chair* is "count noun". The distinction between count nouns and mass nouns is not straightforward. The difference is that mass nouns typically denote masses or substances whereas count nouns typically denote entities that come in sets, but the distinction may in many cases be overridden in ways that seem to a certain degree to rely on conventions.

The examples in (51) show that the noun *beer* may occur in noun phrases with the same denotational properties as noun phrases with count nouns. With the mass noun *water* it does not seem to be equally easy to get a noun phrase which denotes an individualized entity. Consider the oddness of having the indefinite article in the example in (53a).

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[17] We could substitute the indefinite article with the definite article, a possessive, a demonstrative etc. and still have a grammatical result.

(i) I want that/the/my/some chair so that I don't have to eat my fish standing!

(53) a. I want (?*a) water.
b. I want (a glass of) water.

In such cases a more complex modifier than a simple determiner is needed in order to get a noun phrase which denotes a countable referent, cf. (53b). That this should be the case with the noun *water* but not with *beer* surely must be a matter of convention.

Somewhat conversely, count nouns may be used to denote non-individualized entities in ways similar to that of mass nouns, i.e. with singular morphology and no determiner. This is especially salient with many food articles which we arguably would say typically denote individualized entities. Consider the examples in (54).

(54) a. I want potato with my fish.
b. I want a potato with my fish.
c. I want potatoes with my fish.
d. I want some potatoes with my fish.

The noun phrase *potato* in (54a) denotes the substance 'potato', and the speaker's request would be met both if she were served one potato or several potatoes, and presumably also if she were served mashed potatoes. As for the sentence in (54b) on the other hand, the request would be met only if the speaker were served one potato and strictly speaking not more than one potato, and certainly not if she were served mashed potatoes (unless of course that one potato she asked for were mashed by the cook before serving). The request implied by the sentence in (54c) where the object noun phrase is a bare plural count noun would be met if the speaker was served more potatoes than one. The question is nevertheless: would it be met if she were served only one potato?

For languages like English one could argue that using the plural form of a count noun without any determiner represents a strategy for abstracting away from the fact that the referent denoted consists of individualized entities, i.e. a way of suppressing the countability. In that respect the object noun phrase in (54d) is different in that the countability is not suppressed similarly. There is thus a parallel between noun phrases consisting of just a bare plural (of a count noun) and noun phrases consisting of just a mass term in a language like English, and although other languages behave differently from English, as we will see later an important point is that languages seem to group the corresponding noun phrase types together grammatically.[18] In the following we may refer to the two noun phrase types collectively as 'uncountable noun phrases'.

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[18] As Doetjes (1997:20) points out (cf. her references) a central common property of bare plurals and mass terms is that the two types of noun phrases have cumulative reference: by adding two distinct entities which both could be felicitoously denoted by a mass term expression to each other you can still use the same expression to refer to the "conjoined" referent (i.e. 'beer' + 'beer' is all the same 'beer') and the same holds for bare plurals (i.e. 'potatoes' + 'potatoes' is still 'potatoes') It is however not evident how this could be used in order to grasp the contribution of *some* in (54d): by adding 'some potates' to 'some potatoes' one arguably would get something which could be referred to with the expression 'some potatoes'.

Just as with mass nouns being used to denote individualized entities, the extent to which count nouns can behave as mass nouns appears to be a matter of convention. Consider the example in (55).

(55) I want cake/?*muffin/?*cookie with my coffee.

Cakes typically come in delimited entities (pieces or wholes), but it seems that we may abstract away from that and perceive cake as a substance. With muffins and cookies, which also come in delimited entities, that does not seem to be equally straightforward, and that could explain why the absence of the indefinite article in (55) is somewhat easier with *cake* than with *muffin* and *cookie*. In any event the oddness of leaving out the indefinite article in (55) does not seem to be strictly a matter of grammar, but rather of pragmatics: the absence of the indefinite article with singular nouns in English in cases like this entails that the noun phrase(s) in question should be interpreted as denoting a substance/mass and not a set, and whether that is likely to be the case is a matter of how we perceive the world.[19]

Much more could be said about the difference between mass and count nouns (see e.g. Delsing 1993: ch. 2 and Doetjes 1997 for more elaborate discussions and references), but the important point is that certain grammatical regularites can be correlated with the referential property 'countability'. We have seen that the presence of the indefinite article in English entails that the noun phrase containing it must be taken to denote a set rather than a mass. Moreover, such a reading may also be possible when a noun phrase contains other determiners such as the definite article and demonstratives.

An important point for us is that a non-unique mass denoting noun phrase cannot be specifically referring. Consider the following examples involving singular noun phrases.

(56) a. I like **beer**. #**It** is imported from Belgium.
b. I like **the beer**. **It** is imported from Belgium.

In (56a) it is difficult to conceive of a reading where the pronoun in the second sentence is coreferent with the mass term in the preceding sentence. In (56b), on the other hand, where the mass term co-occurs with the definite article, coreference between the pronoun and *the beer* is fine, and the noun phrase may still denote a mass (cf. the discussion of (51c)).

As shown in (57) bare plurals show effects parallel to those of bare singulars.

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[19] Not surprisingly, the semantic and syntactic context (i.e. the general sentence meaning and the sentence type) also seems to interfere with the felicity of a mass reading for a count noun. Whereas the sentence in (54a) is generally judged as perfectly fine, several speakers react somewhat to the following sentence.

(i) ??There's potato in the fridge.

That may be due to the fact that the typical form potatoes have in fridges is their individualized appearance, either as raw or boiled, but probably not as mashed.

(57) a. I want to see **doctors**. #I spoke with **them** yesterday.
b. I want to see **some doctors**. I spoke with **them** yesterday.

In (57a) the pronoun in the second sentence cannot pick up the reference of the bare plural in the preceding sentence, whereas in (57b), where the antecedent noun phrase contains a determiner, coreference is fine. Under the present view of specificity this indicates that bare plurals cannot be specificially referring. This observation will be of some importance later.

Languages differ with respect to how they show grammatical reflexes of countability. Icelandic, for instance, has no indefinite article, and the sentence in (58) is ambiguous between a mass and a count reading of the object noun phrase.[20]

(58) Ég er me› bjór í ísskápnum. *Icelandic*
I am with beer in fridge-DEF
'I have (a) beer in the fridge.'

Finnish also lacks an indefinite article, but in this language the count/mass distinction may be marked by case morphology—partitive case entails a mass reading of the object noun phrase in (59) whereas accusative case entails a count reading.[21]

(59) Ostin olutta / oluen. *Finnish*
bought-1SG beer-PAR / beer-ACC
'I bought beer/a beer.'

Still, when the object is under the scope of negation partitive case is always required, and in this context where accusative marking is not possible, a partitive object noun phrase is ambiguous between a count and a mass reading. This is illustrated in (60).

(60) a. En ostanut olutta *Finnish*
NEG-1SG buy-AUX beer-PAR
'I didn't buy beer/a beer.'
b. *En ostanut oluen.
NEG-1SG buy-AUX beer-ACC

The Icelandic and Finnish examples thus show that the overt reflexes of countability may depend on the grammatical resources available in the language.

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[20] For clarifying discussions on this point I thank María Anna Gar›arsdóttir Gunnar Ólafur Hansson, and fiorsteinn G. Indri›ason.

[21] Finnish also lacks a definite article and the accusative object in (59) may referr to both a uniquely identifiable, discourse anaphoric and countable entity. This aspect of Finnish will be further discussed in sections 3.2 and 4.2.

As a final issue, we may observe that abstract entities and properties may be denoted by noun phrases consisting of singular nouns and no determiner. Consider the examples in (61).

(61) a. I like (*a) music.
b. I like (*a) listening to the radio.

In that respect there seems to be considerable variation across languages, even between languages which are quite comparable with respect to the mass/count distinction. Compare for instance the difference between English and Norwegian evident from the examples in (62) and (63).

(62) Peter has bought himself *(a) car.

(63) Peter har kjøpt seg (en) bil *Norwegian*
Peter has bought himself a car

The indefinite article is obligatory in the English example but not in the Norwegian one. There is however a semantic difference between the version of (63) with and the one without the indefinite article: the latter seems to denote the notion/concept ‘car’ rather than an instance of a car—in a way we could say that one has abstracted away from the physical manifestation of the referent. (For discussions of bare singulars in Norwegian see Borthen 1999 and references cited there.)

2.6. *Summary*

Based on the discussion above we may discern three referential properties of noun phrases: ‘uniqueness’, ‘specificity’ (=‘discourse anaphoricity’), and ‘countability’. When a noun phrase is countable it denotes an entity which is perceived of as individualized. When a noun phrase is discourse anaphoric there is a relation from the noun phrase to a particular referent. This extensional relation is known to the speaker—she has the particular referent in mind—but it is not necessarily identifiable for the listener. If the listener can identify the extensional relation—either because the referent is given in the context, or may be inferred by the listener from the context, or because it is of a highly general nature (i.e. types or universal sets)—the noun phrase is uniquely referring.

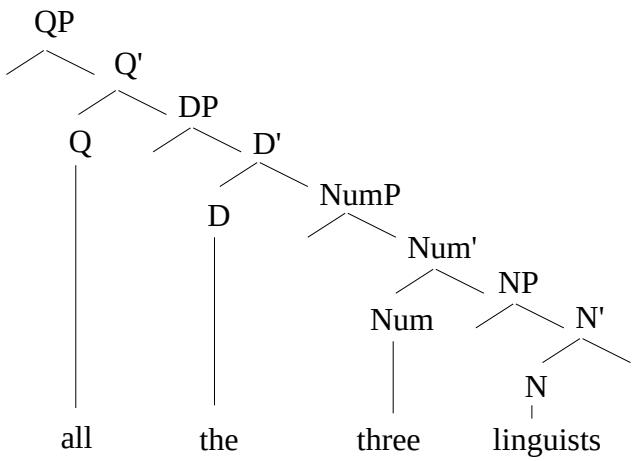
The purpose of the next section will be to explicate the correlations between these referential properties and syntactic domains in the noun phrase given in the introduction and to present the theory I will advocate.

3. THE SYNTAX AND SEMANTICS OF NOUN PHRASE INTERNAL FUNCTIONAL CATEGORIES

3.1. *The basic correlations*

If we now return to the diagram in (13), repeated here, we see that we may correlate each of the three referential properties 'uniqueness', 'discourse anaphoricity', and 'countability' with their "own" noun phrase internal functional projection.

(13)



A universal quantifier entails uniqueness (the listener can identify the extension from the noun phrase to its referent), the definite article entails discourse anaphoricity (the referent of the noun phrase is either given or inferred from the context), and a numeral entails that the referent denoted is a set.

If we take the three determiners as representatives for the three referential properties, we may conjecture that the referential properties are correlated with the syntactic domains which host the determiners, i.e. roughly as suggested for (13). I then propose the following.

The syntactic domains in question, i.e. the functional projections, are headed by abstract functional categories which entail certain semantic properties. NumP is headed by ν, and the presence of ν entails that the noun phrase is countable. DP is headed by δ, and the presence of δ entails that the noun phrase is discourse anaphoric. The presence of ν and δ, and hence NumP and DP, in a noun phrase is optional, but whether or not they are present will of course have consequences for the referential properties of the noun phrase. In other words, absence of a functional category entails absence of certain referential properties.

As for the QP-domain the story is slightly more complicated. First of all, I will rename this domain as "KP". This is of course mostly a matter of mnemonics, and one reason for doing so is that I will assume that Case is assigned to this domain from Case assigners (e.g. verbs and prepositions), and that Case spreads from this domain to the rest of the noun phrase. An assumption related to this is that, unlike what is the case for

NumP and DP, the KP-domain is always present in argument noun phrases—if it is not present Case cannot be assigned.[22] In other words, KP may be regarded as the "label" for noun phrases. In that respect there is a clear parallel between KP and CP at the clause level, and in fact I take KP to correspond to the original 'KOMP' proposed by Szabolcsi, i.e. the equivalent of COMP and the domain through which embedded constituents may move out of the noun phrase. Hence, the label K(P) should allude to the affinity between the domain and (i) "komplementizer", (ii) "kase", and (iii) (universal) "kwantifiers".

The head of KP is the functional category κ, and it exists in two varieties: $\kappa_{[+unique]}$ and $\kappa_{[-unique]}$. When KP is headed by the former, the noun phrase has unique reference, and when it is headed by the latter it does not. The reason we must assume that κ, unlike δ and ν, exists in two varieties, is the obligatory presence of KP—all argument noun phrases (i.e. noun phrases that receive Case) must contain this domain, but all of them are of course not uniquely referring.

A projection that is not headed by a functional category is headed by a 'substantive' category, and N is such a category along with the other big, open word classes, i.e. V and A, and substantive categories are thus not abstract. Moreover, semantically speaking the distinction between functional and substantive categories correlates with the distinction between extension and intenstion: the substantive categories contribute the core characteristic properties of the type of enitity a phrase structural object denotes and the functional categories provide an extensional anchoring for it.[23]

Given the abstract functional categories and their syntactic and semantic definitions the system gives us a typology of 8 configurationally distinct kinds of argument noun phrases which are schematically given in (64) with their respective referential properties indicated in parentheses—these are then the possible 'extended projections' of a noun where 'extended projection' is understood in the sense of Grimshaw (1991)(i.e. as the projections from the lexical heads N and V and the functional categories associated with them).

(64)	a.	$KP_{[+u]}$	DP	NumP	NP	(+unique, +discourse anaphoric, +countable)
	b.	$KP_{[+u]}$	DP		NP	(+unique, +discourse anaphoric, –countable)
	c.	$KP_{[+u]}$		NumP	NP	(+unique, –discourse anaphoric, +countable)
	d.	$KP_{[+u]}$			NP	(+unique, –discourse anaphoric, –countable)
	e.	$KP_{[-u]}$	DP	NumP	NP	(–unique, +discourse anaphoric, +countable)
	f.	$KP_{[-u]}$	DP		NP	(–unique, +discourse anaphoric, –countable)
	g.	$KP_{[-u]}$		NumP	NP	(–unique, –discourse anaphoric, +countable)
	h.	$KP_{[-u]}$			NP	(–unique, –discourse anaphoric, –countable)

[22] The obligatoriness of the KP-domain thus represents a correlate of the Argument Rule of Delsing (1993:65) which says that all argument noun phrases must have a determiner position. See also Longobardi (1994). Moreover, it allows us to treat noun phrases as a uniform constituent type at the clause level, i.e. always as KPs and not as either NP, NumP, DP, and KP.

[23] In the present paper we will not explore the syntax of the intensional domain: adjectives will be assumed to be heads in the extended projection from N (cf. Vangsnes 1999a), merged lower than the functional projections (i.e. dominated by all of the functional projections of the same extended projection).

Examples from English of the different kinds of noun phrases are given in (65)—the list is of course not exhaustive.

(65)	a.	the	chair	
	b.	the	beer	
	c.	all	chairs	
	d.	all	beer	
	e.	a certain	chair	
	f.	a certain	beer	(i.e. 'a certain type/brand of beer')
	g.	a/no	chair	
	h.		beer	

The construction of phrase structural objects otherwise of course observe the general principles of X'-theory. As for the order of the functional and substantive categories within an extended projection, we argue that it is fixed so that N can be c-commanded by all the functional categories, ν may be c-commanded by δ and κ but not by N, δ can only be c-commanded by κ, whereas κ cannot be c-commanded by any of the other categories within the same extended projection.

This fixed order is semantically motivated: the category yielding a 'totality' reading and which determines the case for the other constituents of the noun phrase must c-command them all; the category which yields a specific reading must 'specify' over both the cardinality and the intension of the expression; whereas the category which specifies the countability/cardinality only need take scope over the denotation of the expression.[24]

In other words, we assume both that the inventory of functional categories is fixed and that their relative ordering is fixed, and that both these facts follow from semantic principles, presumably principles encoded in Universal Grammar.

The situation in the noun phrase also holds more generally in that I assume that *all* functional categories are headed by abstract heads, also those at the clausal level (i.e. C, AgrS, T etc., cf. section 7). However, the presence of the abstract heads must be licensed through a process termed 'identification'. Let us next turn to this notion.

3.2. *The identification of noun phrase internal functional categories*

The principle of identification can be stated as follows:

> Identification$_{def}$:
> A functional category must be identified by having a constituent containing one or more relevant morphological features either in its specifier or head position. The constituent must be merged within the extended projection of which the functional category is a part.

[24] Along the same line of reasoing we would argue that attributive adjectives must take scope over N in order to restrict the denotative properties of the noun, and this is achieved when we assume that adjectives are heads in the extended projection from N, themselves however of course c-commanded by the functional categories.

Intuitively, then, 'words' and 'grammatical elements' serve to identify the abstract heads. Strictly speaking some version of the Identification Principle will apply to substantive categories also, but the difference is of course that since a substantive category by definition is not abstract it will identify itself: if for example a noun is not present in the numeration, NP will not be projected. Moreover, the following preference principle is assumed (henceforth referred to as the 'Preference Principle').

Preferred identifier$_{def}$:
When there are several candidates, the preferred identifier of a functional category F will be:

(i) the constituent containing *most* agreement features relevant for identifying F,
(ii) the constituent containing most lexical features relevant for identifying F if the candidate constituents have the same number of relevant agreement features.
(iii) fewest irrelevant lexical features if the candidate constituents have equally many relevant agreement features and lexical features,
(iv) an X^0 if an X^0 and an XP are equally well suited for identification in terms of the features they contain.

As we see, a distinction is made between agreement features and lexical features where the former are more important than the latter. The relevance of this distinction will not be demonstrated in any detail in the present paper, but as shown in Vangsnes (1999a) it is of great importance when one considers the Scandinavian noun phrase from a cross-dialectal point of view.

Returning now to the functional categories in the noun phrase, their identification is defined as follows.

The identification of noun phrase internal functional categories$_{def}$:

(i) κ $_{[-unique]}$ must be identified by an element containing at least one of the following features: [mass], [case], [nominal],
(ii) κ $_{[+unique]}$ must be identified by an element containing at least one of the following features: [ ], [case], [nominal],
(iii) δ must be identified by an element containing at least one of the following features: [gender], [deixis], [nominal],
(iv) ν must be identified by an element containing at least one of the following features: [number], [nominal].

With respect to the distinction between agreement features and lexical features, [case] and [gender] are agreement features, whereas [nominal], [ ], [mass], and [deixis] are lexical features. The feature [number] has a dual status with respect to this distinction: it may be both an agreement feature and a lexical feature. More specifically, I will assume that certain determiners (e.g. numerals) carry a lexical number feature whereas other deter-

miners (e.g. demonstratives and possessives) agree in number and that their number feature therefore is an agreement feature.

It is worth noticing that the agreement features may be considered as attribute/value pairs in that they represent a property which has one of several possible specifications. The feature [case] will for instance be instantiated by one of the morphological cases which exist in the language in question, e.g. nominative or accusative depending on grammatical context, and likewise, [gender] will be instantiated by one of the gender categories found in the language, say masculine or feminine. Importantly, the specification of the features is not relevant for identification. Rather, it is the fact that they have a specification that matters. In other words, it is the presence of attributes that is important, not what values they have.

As for the lexical features, they are not attribute/value pairs. Rather, the feature carries a property as such.

The feature [ ] has a clear affinity to 'universal quantification'. However, in addition to being present in universal quantifiers such as *all, every* etc., I will argue that it also may be present in definite articles and demonstratives in the sense that they too may yield a 'totality' reading of noun phrases.[25]

Definite articles and demonstratives also contain the feature [deixis] (henceforth '[deix]'), indicating that these are elements that 'point'. Importantly, there are demonstratives which do not carry the feature [ ]. In particular demonstratives like *such a* will be assumed to not carry the 'totality' feature whereas a demonstrative like *that* will.

As for the lexical feature [mass] I will assume that it is found on certain determiners—an obvious case in point would be the mass determiner *much* in English. However, I will *not* assume that nouns such as *beer* are inherently specified for the feature. On the other hand I will assume that the plural affixes on nouns in languages like English carry the feature [mass] as well as the feature [num], and this assumption of course relies on the observation that the plural form of count nouns can be used to form uncountable noun phrases (cf. the discussion of bare plurals in section 2.5).

The feature [nominal] has a special status as it is the only one which is relevant for the identification of all the abstract heads. I will assume that this feature is present in nouns as well as all adnominal 'words', i.e. essentially in determiners and adjectives. It is not present in all adnominal constituents, and prepositional complements and relative clauses would be examples of modifying constitutents that do not contain this feature. Hence, the feature is present only in those constituents of the noun phrase which are not themselves an extended projection, i.e. a 'phrase' such as PPs and relative clauses, and e.g. nouns, adjectives, and determiners are thus in principle capable of identifying any of the functional categories in the noun phrase.

We may then briefly consider how the identification of the functional categories takes place. Let us take some examples from Finnish, which is a language which lacks

[25] This may appear counterintuitive for readers familiar with formal logic, but it is in line with the view advocated by Milsark (1974, 1977) and Chomsky (1975) as to capturing the linguistically relevant traits shared by universal quantifiers and definite determiners.

articles, both indefinite and definite ones. In this language a bare noun can be the single constitutent of both an indefinite and a definite noun phrase, i.e. Finnish 'N' may correspond both to English 'a N' and English 'the N'. Accordingly, in isolation the sentence in (66) is ambiguous in that the car denoted by the object noun phrase can be a car which is either contextually given or not. Since the object noun phrase is under the scope of negation, and therefore carries parititive case, on the latter 'indefinite' reading it cannot be specficially referring according to the view of specificity advocated here. ('ELA' stands for elative case.)

(66) En ostanut autoa Ruotsista. *Finnish*
NEG-1PL buy-AUX car-PAR Sweden-ELA
'I didn't buy the/a(ny) car in Sweden.'

The referent of the noun phrase will in both cases be countable, and under the present approach, the ambiguity of the object noun phrase is reflected in its phrase structure: on the 'definite' reading, the noun phrase contains the functional category δ and moreover $\kappa_{[+unique]}$, whereas it on the 'indefinite' reading contains $\kappa_{[-unique]}$, and *no* δ. Accordingly, the object noun phrase has either of the structures in (67).

(67) a. [KP $\kappa_{\mathbf{[+unique]}}$ [DP δ [NumP ν [NP]]]] 'definite'
b. [KP $\kappa_{\mathbf{[-unique]}}$ [NumP ν [NP]]] 'indefinite'

The noun *autoa* exhibits both case and number marking and thus the features [case] and [num]. In addition it carries the lexical feature [nominal] (cf. above). In both cases the derivation of the phrases will start by insertion/merging of the noun under N. From this position it will headmove leftwards and adjoin to the functional categories one by one, and since it carries relevant features for each of them, the identification requirement on functional categories will be met. For the sake of completeness the derivation of the noun phrases can be represented as in (68). (Henceforth '[±unique]' is abbreviated as '[±u]'.)

(68) a. [KP **autoa$_i$ – $\kappa_{[+u]}$** [DP **t$_i$** – δ [NumP **t$_i$** – ν [NP **t$_i$**]]]]
b. [KP **autoa$_i$ – $\kappa_{[-u]}$** [NumP **t$_i$** – ν [NP **t$_i$**]]]

Consider next the sentence in (69) where the object noun phrase contains a demonstrative.

(69) En ostanut tätä autoa Ruotsista. *Finnish*
NEG-1PL buy-AUX this-PAR car-PAR Sweden-ELA
'I didn't buy this car in Sweden.'

In this sentence the object noun phrase cannot have an 'indefinite' reading in the sense that the referent is not identifiable for the listener. Still, when the sentence is interpreted in in isolation this noun phrase is also ambiguous between two readings: the most salient reading is that the noun phrase denotes a particular, physically manifested car which is

identifiable for the listener, but it may also denote a particular *kind* of car. The same ambiguity is present in the English translation.

It is however not obvious whether or how such a type-token distinction should be captured phrase structurally, and we may therefore assume that the noun phrase has the same phrasal structure on both readings, namely the one in (70).[26]

(70) [KP $\kappa_{\mathbf{[+u]}}$ [DP δ [NumP ν [NP]]]]

The demonstrative will be the identifier of the functional categories δ and $\kappa_{[+u]}$, i.e. preferred over the noun since it carries the lexical features [deix] and [ ] in addition to the feature [nominal].

In order to decide which of the two elements it is that is the preferred identifier of ν we would have to consider certain issues concerning the feature [num], and I will leave a thorough discussion of that out here: the choice basically hinges on whether the feature [num] is an agreement feature on both elements or an agreement feature on the demonstrative and a lexical feature on the noun. If the former situation holds, the noun is preferred since it carries less irrelevant features than the demonstrative with respect to identification of ν, but if the latter holds the demonstrative "wins" since agreement features are more "important" than lexical features.

Moreover, other issues such as the constituency of the demonstrative[27] may interfere in this respect, and let us therefore not draw a definite conclusion. Still for the sake of the argument let us assume that the demonstrative is preferred also for identification of ν—in that case the derivation for the demonstrative noun phrase in (69) is as illustrated in (71).

(71) [KP **tätä$_i$** – $\kappa_{\mathbf{[+u]}}$ [DP **t$_i$** – δ [NumP **t$_i$** – ν [NP **autoa**]]]]

---

[26] One possible line of investigation could be to explore whether the type reading can be correlated with absence of the functional category ν which then would allow us to draw a parallel between such noun phrases and uncountable noun phrases, both bare singulars and bare plurals. However, it seems that type denoting noun phrases may also have countable referents. A numeral may even be explicitly expressed—the demonstrative object noun phrase in the following example may denote both two instances of cars and two types of cars.

(i) I didn't buy these two cars from Sweden.

Still, it could be that the cardinality of plural type denoting noun phrases is of a different kind than in their token denoting correlates: the underlying set of cars for the type denoting reading in (i) is likely to consist of far more than two cars. How this could be exploited is not clear to me at the present stage, but it could possibly be relevant for an investigation of the phenomenon of noun phrases with bare singular count nouns in Norwegian which appear to be type denoting (cf. section 2.5 and Borthen 1999).

[27] In Vangsnes (1999a) I have argued that demonstratives are XPs base generated (merged) in a specifier position of a projection (DxP) to the right of and dominated by NumP (and the other functional projections), but to the left of and not dominated by NP. In that respect it is reasonable to assume that the demonstrative will move via Spec-NumP to Spec-DP and Spec-KP, and since it is *capable* of identifying ν, we could argue that once identification has taken place the noun will not move. In other words, the demonstrative will be the identifier of all the functional categories since it is the preferred identifier on an overall account and since its phrase structural status facilitates identification also of a category for which there otherwise is a different preferred identifier.

The crucial point here is that the noun does not raise to the DP and KP domains in a demonstrative noun phrase—although it carries the feature [nominal] and thus is capable of identifying the functional categories heading the projections, it will not do that since there is another element which is better equipped for identification.

3.3. *The availability of elements*

The assumption that the feature [nominal] is relevant for identification of all of the noun phrase internal functional categories in principle yields a highly unconstrained system, but the discussion of Finnish has illustrated that the Preference Principle represents an important constraint in that one will always have to consider which of the elements in a numeration it is that carries most features relevant for the identification.

Nevertheless, the system needs to be further constrained. An important question is why a demonstrative is not always merged in Finnish when the noun phrase in question is discourse anaphoric and uniquely referring: the demonstrative will always be a better identifier for δ and κ than the noun. Somewhat conversely, one may ask why an English common noun by itself may never constitute the single constituent of a discourse anaphoric and uniquely referring noun phrase, i.e. why *car* can never mean 'the car'.

The core of an answer to both of these questions lies in the following principle, henceforth referred to as the 'Availability Principle'.

The Availability of Elements$_{def}$:

(i) No substantive element can be merged post-lexically.

(ii) Functional elements may be merged post-lexically, and one and only one functional element relevant for identification of functional categories can be merged post-lexically for each extended projection, but all functional elements are available for evaluation of economy throughout the derivation.

In order to understand this principle we need to define the content of the notion 'post-lexical(ly)'. Intuitively it simply means 'after the lexical component has fed the syntactic component': we assume a lexicon and a syntactic component consisting of the generalized transformations 'move' and 'merge' which build up phrase structural objects according to X'-theory and other general and standard assumptions. Before the construal of the phrase structural object starts, i.e. before the derivation starts, most constituents of the phrase structural object are chosen from the lexical inventory of the language—more specifically all *substantive* constituents are chosen. Once the derivation has started, new substantive elements cannot be part of the derivation—the lexicon is "shut off" for such elements, as it were. Functional elements on the other hand may be picked from the lexicon after the derivation of the phrase structural object has started, but only one can be picked for each extended projection, i.e. for each lexical category N or V and the functional categories associated with them.

By a 'substantive element' we understand an element which contributes substantial denotative information of its own, whereas by a 'functional element' we understand an element which does not contribute substantial denotative information of its own.[28] This definition of the two kinds of elements may not be sufficiently illuminating, and should be accompanied by some examples.

Nouns and adjectives are substantive elements—they contribute substantial denotative information of their own by constraining the possible types of entities the noun phrase can denote. As for determiners, we may for example take the difference between the definite article *the* and a demonstrative, say *that.* By hypothesis both carry the feature [deix], but unlike the article, the demonstrative also carries information about the locational orientation of the speaker with respect to the referent of the noun phrase it is contained in. Hence, the demonstrative is a substantive element. The article, on the other hand, seems to entail something like a default deictic reading: it points to a given referent, but rather than picking out one which is located in certain ways spatially, it merely picks out the most salient one in the discourse. If we consider that denotative property as not sufficiently substantial, we can conclude that the definite article is a functional element.

Somewhat similarly we may say that the difference between the (singular) indefinite article and the numeral 1 is that whereas both express 'number', only the numeral expresses 'cardinality', and if we take the latter only to be a substantial denotative property the indefinite article will be a functional element whereas the numeral will be a substantive element.

The distinction between substantive and functional elements as conceived of here may appear more scalar than strictly dichotomous, and it seems difficult to give a clear definition of where on the scale the dividing line should be drawn, i.e. what it means to contribute sufficiently substantial denotative information to be considered a substantive element. Nevertheless, I do believe that languages make this distinction, and hopefully the intuition behind it will become clearer as we proceed.

The essence of the Availability Principle is that once elements are chosen from the lexicon and the derivation of a phrase structural object has started, its semantic properties, both the extensional and intensional ones, are fixed and cannot be altered. The merging of a functional element will not alter the semantic properties of the phrase structural object since a functional element does not contribute any denotative information of its own. Accordingly, whereas the first conjunct of the principle can be said to be both semantically and syntactically based, the second conjunct is a strictly syntactic one which captures the fact that languages may have elements which function as mere identifiers of functional categories and that these elements are used whenever possible.

Returning to the question raised at the beginning of this subsection, the answer to why a demonstrative is not merged in Finnish whenever a noun phrase is discourse ana-

[28] Notice that a 'functional element' is not the same as a 'functional category' under the present account where all functional categories are abstract. Nevertheless, from a historical point of view the present conception of 'functional elements' does correspond to what have traditionally been regarded as the core instantiations of functional categories.

phoric and uniquely referring is that the demonstrative is a substantive element and therefore only present in the numeration if picked from the lexicon in the first place, i.e. if the phrase structural object should have a deictic/demonstrative reading.

On the other hand, the reason why a common noun can never constitute the single constituent of a discourse anaphoric and uniquely referring noun phrase in English is that one in principle may always merge the definite article, and since such a numeration will contain a more ideal identifier for the functional categories involved, it will always be done—in other words, {*car*, $\kappa_{[+u]}$, δ, ν} must be compared with {*car*, *the*, $\kappa_{[+u]}$, δ, ν} and the latter is the best numeration.

Two other important facts about the English article system follow from the Availability Principle: (i) the definite and the indefinite article may not co-occur, and (ii) the definite article does not occur in a non-specific indefinite. The latter point is so because a non-specific indefinite does not contain the functional categories δ and $\kappa_{[+unique]}$: for identification of ν and $\kappa_{[-unique]}$ the indefinite article is more appropriate than the definite article. As for the former point, it follows since the Availability Principle explicitly states that only one functional element may be merged (per extended projection, i.e. per noun phrase). This is a quite important point since the complementary distribution of the articles does not follow from anything else, and it will therefore be discussed in more detail in section 4.1.

Most determiners are substantive elements. The typical cases of determiners that are functional elements are the articles, and in the next section we will discuss articles and article systems in more detail. As for most other determiners they provide substantial enough denotative information of their own to be considered substantive elements. The universal quantifier *all* contributes the information that the referent of the noun phrase comprises a total set or entity. So does the universal quantifier *every*, but in addition it carries the information that the noun phrase denotes a set (i.e. individualized entities) and that the members of the set must be interpreted distributively with respect to some property. Possessives are of course substantive elements since they themselves denote a referent that is distinct from that of the matrix noun phrase but nevertheless bears a certain relation to the latter.

Importantly then, most determiners cannot be merged postlexically—they must be part of the original numeration, as it were. Moreover, given that 'substantive determiners' will often carry many of the same features as 'functional determiners', there may be cases where merging of the latter is rendered unnecessary. This is an important point to keep in mind, and something we will return to in section 6 where we consider some substantive determiners. Before that we will discuss functional determiners in more detail: articles and article systems are especially interesting for the present theory.

4. ON ARTICLES AND ARTICLE SYSTEMS

In this section we will demonstrate further how the theory outlined in section 3 is intended to work by considering articles and article systems. We start by discussing the complementary distribution of the indefinite and the definite article in section 4.1. In section 4.2 we consider indefinite and definite articles from a comparative perspective, and in 4.3 we discuss the fact that languages with an indefinite article differ as to whether they have both a singular and a plural indefinite article. In section 4.4 we discuss the French article system, which includes a 'partitive' article, in some detail in the light of the theory proposed. In section 4.5 we consider Northern and Northeastern Swedish which also has a partitive article, but where the partitive article has a different kind of etymological origin than in French. Section 4.6 summarizes the findings of the various subsections.

4.1. *The complementary distribution of the definite and the indefinite articles*

The fact that the definite and the indefinite articles cannot co-occur in English is illustrated in (72).

(72) a. *the a chair
b. *a the chair

Intuitively one would perhaps say that the two articles cannot co-occur since they have incompatible semantic properties (say 'definiteness' versus 'indefiniteness'), but in the present account they do not have semantic properties in and of themselves—rather, it is the functional categories which they identify that have the semantic properties. And consider then the fact that the English definite article does not show any variation in number.

(73) a. the car
b. the cars

(74) a. a car
b. cars

A natural conclusion to draw from this observation is that the definite article does not contain the feature [num]. The indefinite article on the other hand we would assume does, and the feature specifications of the articles would then be something like those given in (75).

(75) a. *the*: [deix]
[ ]
[nominal]

b. *a*: [num]
[nominal]

If we next evaluate the articles with respect to the Preference Principle, the indefinite article will be the preferred identifier for ν whereas the definite article will be the preferred identifier for δ. On that account, we could expect that both were merged, the indefinite

article in NumP and the definite article in DP. However, as we know that does not happen: the two articles cannot co-occur (cf. (72) above).

On the other hand, given the Availability Principle it follows that only one of the articles may be merged. The question then is why the definite article is merged when a definite noun phrase is derived and the indefinite article when an indefinite one is derived; in other words when the structures in (76) are derived (assuming for the sake of the argument that the indefinite is one which is non-specifically referring).

(76)	a.	[KP	$\kappa_{\mathbf{[+u]}}$	[DP	δ	[NumP ν	[NP]]]]	(definite)
	b.	[KP	$\kappa_{\mathbf{[-u]}}$			[NumP ν	[NP]]]	((non-specific) indefinite)

The answer is that the appropriateness of the articles as identifiers must be evaluated for all the functional categories. What we find then is that whereas the definite article is the preferred identifier for δ and $\kappa_{[+\text{unique}]}$, the indefinite article is the preferred identifier for ν and $\kappa_{[-\text{unique}]}$. As for $\kappa_{[-\text{unique}]}$ both articles contain one relevant feature ([nominal]), but since the definite article contains more irrelevant features, the indefinite article is the preferred one.

Summing up, the definite article is the preferred identifier for most functional categories in (76a) whereas the indefinite article is the preferred identifier for most functional categories in (76b), and this matches the empirical facts the structures are intended to cover.

It is also worth mentioning that under the present theory there is nothing peculiar about the fact that the definite article and the numeral 1 can co-occur, i.e. as for example in *the one car*. The numeral is quite close to the indefinite article with respect to the semantic properties its presence entails, but since it is not a functional element (it has denotative content of its own, i.e. 'cardinality') the Availability Principle does not bar it from being merged along with the definite article. On the other hand, the fact that the numeral 1 and the indefinite article cannot co-occur naturally follows from the fact that the indefinite article is not a better identifier than the numeral for any functional category.

The Availability Principle is thus of great importance for understanding the article system of a language.

4.2. *Indefinite and definite articles from a comparative perspective*

The Availability Principle is also important and interesting from a cross-linguistic perspective. The explanation for why an English common noun cannot be the single constituent of a discourse anaphoric and uniquely referring noun phrase is that the definite article is always available, and since it is a better identifier for the functional categories, it must be merged.

In turn the explanation for why a Finnish common noun may constitute the single constituent of a discourse anaphoric and uniquely referring noun phrase, is that this language unlike English has no definite article, i.e. it has no functional element which is a

better identifier for the functional categories δ and $\kappa_{[+u]}$ than the noun. It does not have an indefinite article either, and a common noun may therefore also be the single constituent of a countable non-unique, non-specific noun phrase (i.e. a "non-specific indefinite").

Icelandic has a different system. This language has a definite article, but as we recall from section 2.5 it does not have an indefinite one. Accordingly, a common noun may be the single constituent in a countable non-specific and non-unique noun phrase, but not in a noun phrase which denotes a unique discourse referent—in the latter case the definite article must be present in the derivation.

Returning to English we find a third system with both a definite and an indefinite article. This is also the system of Mainland Scandinavian with the difference that the definite article there typically is a suffix on the noun,[29] and in (77)–(79) the difference between Finnish, Icelandic, and Norwegian (representing Mainland Scandinavian) is illustrated—notice that the definite article is suffixed in both Norwegian and Icelandic. (The Icelandic and Finnish examples are in the nominative.)

(77)	a.	tuoli chair 'a chair'		b.	tuoli chair 'the chair'	*Finnish*
(78)	a.	stóll chair 'a chair'		b.	stóllinn chair-DEF 'the chair'	*Icelandic*
(79)	a.	*(en) a 'a chair'	stol chair	b.	stolen chair-DEF 'the chair'	*Norwegian*

By hypothesis the noun phrases in the a.- and b.-examples, respectively, have the same phrase structure across the three languages, i.e. the ones given above in (76) (still assuming that we have indefinite noun phrases with a non-specific reading).

In all cases just a noun would in principle suffice for identifying the functional categories since a noun carries the feature [nominal]. In Finnish this is what we find for both the definite and the indefinite noun phrase since this language has neither a definite nor an indefinite article.

Moreover, just a common noun is also what we find in the Icelandic indefinite noun phrase. As argued in Vangsnes (1999a) the noun carries an affix which is marked for case and number, and although the suffixed definite article carries a number feature too it will also carry features irrelevant for the identification of ν, and the bare noun therefore

[29] There also exists a lexical definite article which is required when a definite noun phrase contains an attributive adjective, cf. footnote 45. (See otherwise e.g. Delsing 1993 for details.).

"wins"[30]. For the definite noun phrase on the other hand the N+DEF will be preferred over the bare noun.[31]

Lastly, in the Norwegian pair of noun phrases in (79) articles must be generated in both cases. They are available, and since they are more appropriate identifiers for the functional categories than the noun, they must be merged. In that respect Norwegian works like English (abstracting away from the differing status of the definite article).

The general conclusion from this comparison of Norwegian, Icelandic, and Finnish is then that if a language has articles it must use them when possible. The question why some languages have articles whereas others do not is clearly a diachronic one. In that respect, the present theory offers an account of why definite articles typically have developed from demonstratives and indefinite articles from the numeral 1, respectively. The etymological origins of the articles are ideal identifiers for certain functional categories (with a particular semantic content), and at some point in the evolution of a language they have been interpreted as "mere" identifiers with no denotative content of their own. At that point they are no longer optional with respect to possible numerations and the evaluation of numerations—they have become 'functional elements' which must be used whenever possible.

The general line of reasoning in this respect should not be very controversial. Many factors, ranging from language contact to "accidental" phonological innovations, seem to be involved when we consider grammaticalization processes, and it is beyond the scope of the present paper to discuss the evolution of article systems from a diachronic point of view. We will nevertheless touch on the issue again in later sections, although only in terms of speculative notes rather than in-depth studies.

4.3. *Singular and plural indefinite articles*

Norwegian and English both have an indefinite article which is obligatory in a noun phrase which denotes a non-unique countable referent and which otherwise only contains a common noun in the singular. This is illustrated by the examples in (80).

(80)	a.	Det	er	*(en)	hund	i hagen.	*Norwegian*
		EXPL	is	(a)	dog	in garden-DEF	
	b.	There is *(a) dog in the garden.					*English*

[30] The nominative and accusative forms of the indefinite and definite paradigms for the noun *stóll* 'chair' are as given in table 3.

	INDEF	DEF
NOM-SG	*stól-l*	*stól-l-inn*
ACC-SG	*stól*	*stól-inn*
NOM-PL	*stól-ar*	*stól-ar-nir*
ACC-PL	*stól-a*	*stól-a-na*

Table 3: Nominative and accusative forms of the noun 'chair' in Icelandic

[31] Remember otherwise that, as noted in section 2.5, a count reading for a mass noun does not require the presence of a determiner in Icelandic.

However, in the plural there is no corresponding requirement for a determiner, cf. the examples in (81).

(81) a. Det er hunder i hagen *Norwegian*
EXPL is dogs in garden-DEF
b. There are dogs in the garden. *English*

This raises two questions: (i) why is an indefinite article required in the singular, and (ii) why is there no obligatory indefinite article in the plural.

Given the theory advocated here, the first question may be rephrased as follows: why is the indefinite article a better identifier for ν than the singular noun? The answer I offer hinges on the assumption that there is no number affix on singular nouns in these languages and that they therefore do not carry the lexical feature [num]. If then the only feature they carry is [nominal], and if the indefinite article carries both [nominal] and [num] (cf. section 4.1), the indefinite article will be the preferred identifier.

For English the conjecture that singular nouns do not carry an affix should be fairly straightforward, but as discussed in Vangsnes (1999a) for Norwegian (and Mainland Scandinavian) it is slightly more complicated since there arguably exist Norwegian (and Mainland Scandinavian) nouns which have a suffix in the singular (indefinite). It will however lead too far to review that discussion here, but the conclusion drawn from it is that since the majority of Norwegian nouns do not have an affix in the singular (indefinite) the class as such does not have it, and the overall morphological property of the class is what counts syntactically speaking.[32]

On plural nouns on the other hand, there is a number affix in Norwegian and English, cf. the pairs *hund – hunder* and *dog – dogs*. The number affix arguably carries the feature [num], and hence a plural noun does too. If we in turn assume the potential existence of a plural counterpart of the indefinite article in Norwegian and English, i.e. a functional element which contains the features [nominal] and [num], and where the specification of [num] is 'plural' rather than 'singular', this element would not be preferred over the (plural) noun: the two elements would be equally well suited as identifiers (at least as long as both are X^0s). Let us take it that this is the reason why no functional element is *required* in plural indefinites.

However, as noted in section 2.5 a determiner is required in English if the plural is specifically referring. The same holds for Norwegian, and the Norwegian counterpart of the English examples in (57) in section 2.5 are given in (82).

(82) a. Jeg vil snakke med **leger**. #**De** var her i går. *Norwegian*
I want-to speak with doctors. They were here yesterday.
b. Jeg vil snakke med **noen leger**. **De** var her i går.
I want-to speak with some doctors. They were here yesterday.

[32] Conversely there are classes of nouns where there is no plural affix, but these classes are in an insignificant minority and do therefore not have an impact on the syntactically relevant properties of the class of nouns.

In the a.-example the pronoun in the second sentence cannot denote the referent of the bare plural in the preceding sentence. In the b.-example on the other hand such coreference is quite felicitous. Some speculations as to why the determiner is required for specificity to obtain are in order.

As discussed in section 2.5 bare plurals represent a way of creating uncountable noun phrases with a count noun, and in section 3.2 I made the assumption that the plural affix contains the feature [mass]. If we then take it that the Norwegian determiner *noen* and its English counterpart *some* contain the feature [num] but not [mass], we can give an account of the facts in (82).

The determiner and the plural noun will carry equally many relevant features for the identification of ν and δ, but the determiner carries fewer irrelevant features than the noun and is therefore preferred (i.e. since it does not carry the feature [mass]). On the other hand, for the identification of $\kappa_{[-u]}$ the plural noun will be the preferred identifier since it carries the feature [mass]. Consider then the possibility that the determiners *noen* (Norw.) and *some* (Eng.) in fact are plural indefinite articles and therefore necessarily merged when preferred as identifiers (cf. the Availability Principle).[33]

Given that the bare plural in (82a) is uncountable and moreover not specifically referring we may conjecture that its phrase structure has only one functional category, namely $\kappa_{[-u]}$: the phrase is neither discourse anaphoric nor countable. The plural indefinite article *noen* is then not merged since the plural noun is preferred as identifier for the only functional category and hence for the noun phrase as such.

As for the plural noun phrase in (82b) it is both specific and countable, and in addition to $\kappa_{[-u]}$ it should therefore consist of both ν and δ. Since the plural indefinite article is the preferred identifier for both of these functional categories, and thus preferred for more functional categories than the plural noun, it seems reasonable to expect it to be the chosen identifier. This accounts for the fact that it must be present when a plural indefinite is specifically referring.[34]

A final possibility is that we would have an indefinite plural noun phrase that is non-unique and countable, but not specific, i.e. where the phrase structure consists of $\kappa_{[-u]}$ and ν, but not δ. In that case the plural noun and the plural indefinite article would be preferred for one functional category each, and we could take that to be in agreement with the fact that such a noun phrase may but need not contain the plural indefinite article.

In any event we can conclude that languages like Norwegian and English in general allow plural nouns to be the single constituent of a noun phrase. Other languages work differently, however, and in French for example an indefinite article is required both in the singular and the plural. The French article system also has another property which distinguishes the language from Norwegian and English, more specifically the existence of a

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[33] Treating (unstressed) *some* as a plural indefinite article is not a novel suggestion—the matter has to some extent been debated in the literature, cf. Chesterman (1991:44ff) and references cited there.

[34] Strictly speaking we should also take into consideration the definite article. Although it is preferred as the identifier of δ the plural indefinite is preferred for ν and moreover carries fewer irrelevant features than the definite article on an overall account (cf. the discussion of the singular articles in section 4.1).

partitive article, i.e. an article which is obligatory in mass denoting singular noun phrases. Let us therefore take a closer look at the French article system.

4.4. *The French article system*

The examples in (83), taken from Sanchez-Lefebvre (1999), are the French counterparts of the Norwegian and English examples in (80) and (81).

(83)	a.	Il y a	*(un)	chien	dans	le jardin.	*French*
		There's	a	dog	in	the garden	
	b.	Il y a	*(des)	chiens	dans	le jardin.	
		There's	PL	dogs	in	the garden	

As we see French has an obligatory singular indefinite article just like Norwegian and English, but unlike the latter two languages a determiner is also required in a plural noun phrase.

However, a crucial difference between on the one hand French and on the other hand Norwegian and English is that the distinction between singular and plural forms of nouns is rarely audible—there is no distinction in the pronounciation of *chien* and *chiens* in the examples in (83), and apart from a few idiosyncratic nouns (cf. e.g. Togeby 1965: 27f; Doetjes 1997:20f and references cited there), this reflects the general situation in French.[35]

On that basis, and given that it is the morphological properties of a class which are syntactically relevant (cf. above), we can argue that French nouns carry neither of the features [num] or [mass]—there is no plural affix which contributes these features.

In turn, given the existence of an indefinite article where the [num] feature is specified 'plural', this will be the preferred identifier for ν in a noun phrase denoting a non-unique (non-specific) countable referent in French, and the ungrammaticality of the version of (83b) without the plural indefinite article is thus accounted for.

Unlike in Norwegian and English, French mass nouns cannot be the single constituent of a noun phrase. This difference is illustrated by the examples in (84) and (85).

(84)	a.	Il y a	*(du)	vin	dans	le	réfrigérateur.	*French*
		There's	ART	wine	in	the	fridge	
	b.	Det er	vin	i	kjøleskapet.			*Norwegian*
		EXPL is	wine	in	fridge-DEF			
	c.	There's wine in the fridge						*English*

[35] A plural *-s* does however occur in so-called 'liason contexts', i.e. where the plural noun is followed by an adnominal constituent (e.g. an attributive adjective) with an initial vowel, and one could therefore argue that there is an underlying plural affix which only surfaces in certain phonological contexts. In turn, however, one could argue that the affix surfaces so seldom that it is not syntactically relevant. This line of argument would then be on a par with the arguments for saying that the instances of nouns with a singular affix in Norwegian (cf. section 4.3) are not many enough to mark singular nouns as carrying the feature [num].

(85) a. Je veux *(du) vin. *French*
I want ART wine
b. Jeg vil ha vin. *Norwegian*
I will have wine
c. I want wine. *English*

The element whose presence is obligatory in the French examples is often referred to as the 'partitive' article, and etymologically, and perhaps synchronically, it consists of the partitive preposition *de* 'of' and the definite article (*du* is the masculine form which is derived from *de+ le,* and the feminine form is *de la* which is etymologically transparent). Interestingly, the plural indefinite article also has a similar etymology: whereas the singular indefinite article is derived from the numeral 1, the plural indefinite article (*des*) is derived from *de* plus the plural definite article *les.*

This fact is of course not unexpected given that indefinite plurals and indefinite noun phrases consisting of mass nouns typically denote masses. French simply marks these two types of uncountable noun phrases in the same manner, and in a way one could say that so do English and Norwegian where absence of a determiner is the common grammatical trait. In a certain sense the plural indefinite article in French thus equals the number affix in Norwegian and English,[36] and in that respect it is interesting that whereas an indefinite noun phrase containing the singular indefinite article may be specific, the same appears to not hold for an indefinite noun phrase containing the plural indefinite article. Consider the following examples and judgments due to Natalia Sanchez-Lefebvre (p.c.).

(86) a. Je veux voir **un médecin**. J'ai parlé avec **lui** hier.
I want-to see a doctor. I've spoken with him yesterday.
b. Je veux voir **des médecins**. #J'ai parlé avec **eux** hier.
I want-to see PL doctors. I've spoken with them yesterday.

Now, let us assume for the sake of the argument that the etymological origin of both the partitive article and the plural indefinite article were reflected in the feature compositions of the functional elements in such a way that the partitive preposition has "contributed" the feature [mass] and the definite article the features [deix] and [ ]. The plural indefinite and the partitive article then both have all three of these features. (See however below for another, in fact less problematic, view.) On this basis let us next compare the feature compositions of the various French articles.

The singular articles including the partitive one show gender agreement with the noun. The plural articles on the other hand do not. This is illustrated in (87) and (88) where the various articles co-occur with the masculine noun *garçon* 'boy' and the feminine noun *femme* 'woman'. (The partitive article is glossed as 'of' and the plural indefinite one as 'PL'.)

[36] This is essentially what is argued by Delfitto and Schroten (1991).

(87)	a.	**un**	garçon	(88)	a.	**une**	femme
		a	boy			a	woman
	b.	**le**	garçon		b.	**la**	femme
		the	boy			the	woman
	c.	**du**	vin		c.	**de la**	bière
		of	wine			of	beer
	d.	**des**	garçons		d.	**des**	femmes
		sm	boys			sm	women
	e.	**les**	garçons		e.	**les**	femmes
		the	boys			the	women

Given these agreement patterns and given the assumption above about the etymological reflex of the partitive and the plural indefinite articles, we can take the feature compositions of the article types, five in total, to be as rendered in (89) where the masculine forms are taken to represent the singular articles.[37].

(89)	*un*:	[nominal]	*le*:	[nominal]	*du*:	[nominal]	*des*:	[nominal]	*les*:	[nominal]
		[num]		[num]		[num]		[num]		[num]
		[gen]		[gen]		[gen]		[deix]		[deix]
				[deix]		[deix]		[ ]		[ ]
				[ ]		[ ]		[mass]		
						[mass]				

We may then calculate which articles it is we expect to occur in the various types of noun phrases. In order to ease the calculation we repeat the definition of identification of noun phrase internal functional categories as well as the Preference Principle.

The identification of noun phrase internal functional categories$_{def}$:

(i) κ $_{[-unique]}$ must be identified by an element containing at least one of the following features: [mass], [case], [nominal],

(ii) κ $_{[+unique]}$ must be identified by an element containing at least one of the following features: [ ], [case], [nominal],

(iii) δ must be identified by an element containing at least one of the following features: [gender], [deixis], [nominal],

(iv) ν must be identified by an element containing at least one of the following features: [number], [nominal].

[37] We could argue that the plural articles are just the plural versions of the singular articles and that they too therefore carry the feature [gen] since other members of the class do so. Nothing will hinge on the choice we make in this respect, and let us therefore assume that the feature is not present since that requires less problematization. It should however be mentioned that in Vangsnes (1999a) the opposite view is taken for Mainland Scandinavian where gender oppositions only are present in singular forms of determiners.

Preferred identifier$_{def}$:
When there are several candidates, the preferred identifier of a functional category F will be:

(i) the constituent containing *most* agreement features relevant for identifying F,
(ii) the constituent containing most lexical features relevant for identifying F if the candidate constituents have the same number of relevant agreement features,
(iii) fewest irrelevant lexical features if the candidate constituents have equally many relevant agreement features and lexical features,
(iv) an X^0 if an X^0 and an XP are equally well suited for identification in terms of the features they contain.

Moreover, we assume that the singular articles only compete with each other and likewise that the plural ones only compete among themselves—in other words *un*, *le,* and *du* do not compete with *des* and *les* and vice versa. When we consider the four functional categories in isolation we then arrive at the following conclusions with respect to which of the articles are preferred as identifiers for the various functional categories.

(90) (i) *un* is preferred over *le* and *du* as identifier of ν. All articles carry equally many relevant features ([nominal] and [num]), but whereas *un* carries no irrelevant features, both *le* and *du* do ([deix], [ ], and [mass]).
(ii) *les* is preferred over *des* as identifier of ν. Both articles carry two relevant features ([nominal] and [num]) and two irrelevant features ([deix] and [ ]), but *des* also carries an irrelevant feature ([mass]) which *les* does not carry.

(91) (i) *le* is preferred over *un* and *du* as identifier of δ. Both *le* and *du* carry one more relevant feature than *un* ([deix]). In turn they both carry the irrelevant feature [ ], but since *du* also carries the irrelevant feature [mass], *le* is preferred.
(ii) *les* is preferred over *des* as identifier of δ. Both carry the same number of relevant features, but since *des* carries one more irrelevant feature ([mass]) *les* is preferred.

(92) (i) *le* is preferred over *un* and *du* as identifier of $\kappa_{[+u]}$. Both *le* and *du* carry one more relevant feature than *un* ([ ]), and since *du* carries one more irrelevant feature than *le* ([mass]), the latter is preferred.
(ii) *les* is preferred over *des* as identifier of $\kappa_{[+u]}$ since *des* carries one irrelevant feature ([mass]) more than *les.*

(93) (i) *du* is preferred over *le* and *un* as the identifier of $\kappa_{[-u]}$ since it carries one relevant feature more than the other articles ([mass]).
(ii) *des* is preferred over *les* as the identifier of $\kappa_{[-u]}$ since *des* carries one relevant feature more than *les* ([mass]).

Summarizing we may represent the findings as in (94).

(94)

κ[+u]	κ[–u]	δ	ν
|	|	|	|
le	*du*	*le*	*un*
les	*des*	*les*	*les*

The possibly most surprising finding here is that the plural indefinite article is not the preferred identifier of ν—rather the plural *definite* article is preferred. Intuitively, we would perhaps expect the situation to be the opposite, and let us therefore consider the identification of a plural non-unique, non-specific, countable noun phrase in French, i.e a reading available for the postverbal noun phrase *des chiens* in the existential sentence in (83b) which is repeated here as (95a) and compared with an example which shows that the plural definite article is not possible.

(95)

a.	Il y a	des	chiens	dans	le jardin.	*French*
	there's	sm	dogs	in	the garden	
b.	*Il y a	les	chiens	dans	le jardin.	
	there's	the-PL	dogs	in	the garden	

According to the present theory the type of noun phrase we are discussing will contain the functional categories $\kappa_{[-u]}$ and ν. In French the plural indefinite article (*des*) will be the preferred identifier of the former functional category ($\kappa_{[-u]}$) whereas the plural definite article (*les*) will be the preferred identifier of the latter (ν; cf. above). Hence, the two articles are "best" for one functional category each, but given the Availability Principle only one of them can be merged.

Still, there is a difference with respect to *how* the articles are best for their respective functional categories: whereas the definite article (*les*) "wins" for ν because the indefinite article (*des*) has more irrelevant features than it, the indefinite article wins for $\kappa_{[-u]}$ because it has one *relevant* feature more than the definite article, namely the feature [mass]. Let us take it that this difference is the deciding factor for the overall choice between the two functional elements, i.e. that a relevant feature is more important (positively) than an irrelevant feature (negatively).

For noun phrases that are uniquely referring the conclusions summarized in (94) seem to make the desired predictions whether or not they also are specifically referring. However, a singular noun phrase which is specific and countable but non-unique will contain the singular indefinite article (*un*) in French just like in Norwegian and English, and it is not entirely clear how this choice may be predicted in such a case since the three functional categories present, $\kappa_{[-u]}$, δ, and ν, will have one identifier each when considered in isolation ($\kappa_{[-u]}$ will have *du*, δ will have *le*, and ν will have *un*).

In this case the following may be the deciding factor. The three articles are preferred identifiers for one functional category each, but on an overall account the singular indefinite article is the one with fewest irrelevant features. In fact, it is the functional element with fewest features altogether ([nominal], [gen], and [num] only), and since agreement features do not count for irrelevance, only the [num] feature is irrelevant (i.e. with respect

to the identification of $\kappa_{[-u]}$ and δ). This account for why the indefinite article is chosen is thus but a variant of the one given above for the choice of the plural indefinite article, i.e. that relevant features are more important than irrelevant features.[38]

The French article system could certainly be discussed in greater detail, and it is worth pointing out that some of the issues discussed above would have been more straightforward had we not assumed that the etymological origin of the partitive and indefinite plural articles should be reflected in their feature composition. That assumption is strictly speaking not necessary from a synchronic point of view, and if we conjectured for example that these articles do not contain the features [ ] and [deix], the discussion above would have proceeded differently—on that account the plural indefinite article (*des*), and not the plural *definite* article, would have been the preferred identifier for ν, and the solution to why *des* is the functional element chosen for a plural non-unique countable noun phrase would be quite unproblematic.

Other issues would also have been more straightforward: for instance, the account of why the singular definite article is preferred over the partitive article as identifier of $\kappa_{[+u]}$ and δ would be less convoluted since the former (*le*) then would contain more relevant features than the latter (*du*)(i.e., it would not contain the features [deix] and [ ]).

And in fact, as pointed out to me by Helge Dyvik (p.c), it is quite plausible also from a diachronic point of view to say that only the feature [mass] is "carried over" to the new elements (i.e. the partitive and indefinite plural articles) since that then would amount to saying that only the feature of the "head" of the original structure, i.e. the preposition *de*, is the one that "survived". In conclusion, it seems that an equally natural pre-theoretical assumption about the partitive and plural indefinite articles would have been that the only feature reflecting their etymology is the feature [mass].

A highly interesting question is why and how French has developed its article system. It will lead too far here to discuss that issue in detail, but it seems quite plausible that an important factor has been the loss of overt plural marking on nouns: once the plural marking was lost the singular and plural forms of count nouns would be homophonous, and the strategy of using the plural form of the noun in order to get an uncountable noun phrase was no longer available, and instead a different strategy, a syntactic one, emerged.

In the next subsection we will consider another language which also has a partitive article, but where the partitive article has a slightly different etymological origin, and synchronic status, than in French: it is in fact homophonous with the definite article.

4.5. *The Northern and Northeastern Swedish suffixed article*

Like Scandinavian dialects in general, Northern Swedish dialects and the Swedish dialects spoken in Österbotten on the western coast of Finland (henceforth 'North-Northeastern Swedish', abbreviated 'NN-Swedish') have an element suffixed to nouns which is

[38] One could also consider the choice of the indefinite article in this case as the most economical in terms of 'markedness': 'when there are several candidates, pick the one that is least marked'.

present in noun phrases denoting a unique discourse referent (i.e. a suffixed definite article). In for instance the examples in (96) and (97) the suffixed article is used in the same way in NN-Swedish and Standard Swedish, i.e. on a par with the English definite article. (It is worth mention that the Standard Swedish article system parallels the Norwegian system in the relevant aspects, and what we have said about Norwegian earlier thus can be carried over to Standard Swedish.) The examples in (96) are from NN-Swedish and those in (97) from Standard Swedish.[39] We gloss the suffixed article as 'ART' in the following discussion.

(96) a. Om **vårn** då **isn** jick bårt sä fann däm **flicka**.
about spring-ART when ice-ART went away so found they girl-ART
'In the spring when the ice disappeared they found the girl.'

b. **Bjärn'n** tågga **armen** hans nästan oppvä **axla**
bear-ART bit arm-ART his almost up-with shoulder-ART
'The bear bit his arm almost by the shoulder.'

(97) a. Om **våren** då **isen** gick hittade de **flickan.**
about spring-ART when ice-ART went found they girl-ART
'In the spring when the ice disappeared they found the girl.'

b. **Björnen** bet honom i **armen** nästan vid **axeln**.
bear-ART bit him in arm-ART almost by shoulder-ART
'The bear bit him in the arm almost by the shoulder.'

However, a fact which is fairly well known within traditional Scandinavian dialectology is that in NN-Swedish we also find uses of the suffixed article in noun phrases which clearly denote entities that are neither individualized nor have an extension which is identifiable for the listener. As Delsing (1993:49ff) shows, in this use the suffix may occur on singular mass nouns and plural count nouns, but not on (typical) singular count nouns. The phenomenon, which is not found in other Scandinavian dialects, can be illustrated by the NN-Swedish existential sentences in (98) (in part excerpted from Delsing 1993)—for comparison their Standard Swedish counterparts are given in (99).

(98) a. He jer mjölka/*mjölk i kylskåpe. *NN-Swedish*
EXPL is milk-ART/milk in fridge-ART
'There is milk in the fridge.'

b. He jer moröttren/*morötter i kylskåpe.
EXPL is carrots-ART/carrots in fridge-ART
'There are carrots in the fridge.'

c. He sitt en katt/*katta/*katt dera trappa.
EXPL sits a cat/cat-ART/cat on stairs-ART
'There is a cat sitting on the stairs.'

[39] The NN-Swedish examples in (96) are excerpted from texts in the Skellefteå dialect in Dahlstedt and Ågren (1980), and the orthography is slightly altered.

(99) a. Det finns mjölk/*mjölken i kylskåpet. *Standard Swedish*
EXPL exists milk/milk-ART in fridge-ART
'There is milk in the fridge.'

b. Det finns morötter/*morötterna i kylskåpet.
EXPL exists carrots/carrots-ART in fridge-ART
'There are carrots in the fridge.'

c. Det sitter en katt/*katten/*katt på trappan
EXPL sits a cat/cat-ART/cat on stairs-ART
'There is a cat sitting on the stairs.'

As we see from the c.-examples NN-Swedish and Standard Swedish behave alike with respect to disallowing the suffixed definite article on a singular count noun appearing in the postverbal argument of an existential sentence, but the a.- and b.-examples show that they differ with respect to singular mass nouns and plural count nouns.

Delsing (op.cit.) considers the suffixed article in examples like these an element homophonous to, but lexically distinct from, the suffixed definite article. The present theory however supports the view that we are talking about one and the same element: an article which carries the feature [mass] in addition to [deix] and [ ].

If we assume that the difference between NN-Swedish and the other Scandinavian dialects is the presence versus absence of the [mass] feature on the suffixed definite article, the syntactic difference with respect to mass terms and plural uncountable noun phrases illustrated above will follow since in NN-Swedish a noun carrying the article will be a more appropriate identifier for $\kappa_{[-u]}$ than a noun which does not carry it.

For the sake of completeness let us give the feature specifications for the singular indefinite and singular suffixed articles in NN-Swedish. As in Scandinavian more generally the suffixed article shows both gender and number agreement (cf. Vangsnes 1999a); the indefinite article also agrees in gender and it of course carries the feature [num], and accordingly the feature compositions of the articles may be taken to be as in (100).

(100)

en:	*-a*:	*NN-Swedish*
[nominal]	[nominal]	
[num]	[num]	
[gen]	[gen]	
	[deix]	
	[mass]	
	[ ]	

The interesting cases will then be singular indefinites denoting a countable entity such as in (98c) where we find an indefinite article rather than the suffixed one just as in Standard Swedish. As long as the noun phrase is not specifically referring, and hence δ is not present in the numeration, the choice of the indefinite article will follow from the fact that although the two articles are preferred for one functional category each (the indefinite

article for ν, and the suffixed one for $\kappa_{[-u]}$), the indefinite article will carry less irrelevant features on an overall account (cf. the discussion of French above).

On the other hand, if the indefinite singular noun phrase is specifically referring the situation will be different. In that case δ would be present in the numeration, and since the suffixed article would be the preferred identifier for two of the three functional categories in the phrase ($\kappa_{[-u]}$ and δ) we would expect it to be the functional element chosen. However, as far as I know such a noun phrase will also contain the indefinite article in NN-Swedish just like it will in Standard Swedish and English.

This could mean two things. We could conclude that the theory makes wrong predictions and therefore is erroneous. However, another possibility is that the mismatch tells us that the way we have reasoned about how the theory works is incorrect. Maybe the procedure for choosing among functional elements is not as straightforward as simply picking the one that is preferred for most functional categories in the numeration: maybe the fact that the suffixed article carries so many features in NN-Swedish is what makes the indefinite article win in our problematic case.

At present I have no obvious solution to the problem, but I do believe that the idea that the suffixed article is one lexical/morphological entity with two uses is preferable over the alternative which is to consider the two uses as involving two separate but homophonous elements, i.e. a definite and a partitive article. In that respect assuming that the suffixed article carries the feature [mass] in NN-Swedish but not in other Scandinavian dialects appears to be a frutiful idea to explore.[40]

4.6. *Finnish case marking*

As mentioned in section 2.5 Finnish, which lacks articles, may in some syntactic contexts mark the distinction between a mass and a count reading of a singular noun phrase by case marking. When a predicate denotes a non-negated, telic state-of-affairs the postverbal argument (i.e. the direct object) shows an alternation between on the one hand partitive case and on the other accusative or nominative: if the noun phrase is uncountable it will carry partitive, otherwise it will carry accusative (if there is a nominative subject) or nominative (if there is no nominative subject, e.g. in passives, imperatives, unaccusative constructions, and constructions with an oblique subject). If the predicate is atelic the

[40] Given that we maintain this it is interesting to ask why NN-Swedish has developed the partitive use of the suffixed article. I believe that the development somehow is related to the fact that there is widespread homonymy between indefinite and definite plural forms of nouns in NN-Swedish. The degree of homonymy however ranges from being total (e.g. in the Karleby dialect, cf. Hagfors 1891:93) to being found in only a certain class of nouns (e.g. in the Västerbotten dialects, cf. Larson 1929:113ff). Nevertheless, in the latter dialects the noun class in question is a big and productive one, and importantly, a comparable degree of homonymy between indefinite and definite plural forms is not found in Standard Swedish and Scandinavian more generally. The development of the partitive use of the article may then have proceeded as follows: since a large number of plural uncountable noun phrases involved a noun where the plural affix was invariant with respect to definiteness, the plural definiteness affix became analysed as a preferred identifier of the functional categories in such noun phrases, analysed as carrying the feature [mass], and in turn the whole class 'suffixed (definite) article' was given this feature specification.

postverbal argument always carries partitive case, and partitive case thus has both a 'VP-related function' and an 'NP-related function'—see Kiparsky (1998) and references cited there for details. The NP-related function is illustrated by example (59), repeated here, and the VP-related function is illustrated in (101).

(59) Ostin olutta / oluen. *Finnish*
bought-1SG beer-PAR / beer-ACC
'I bought beer/a beer.'

(101) a. Kirjoitin kirjettä. *Finnish*
wrote-1SG letter-PAR
'I was writing the/a letter.'
b. Kirjoitin kirjeen.
wrote-1SG letter-ACC
'I wrote the/a letter.'

The principles for case assignment to the postverbal argument (i.e. direct object) apply uniformly to singular and plural noun phrases, and an uncountable plural noun phrase thus carries partitive case in the same syntactic contexts as a singular mass denoting noun phrase. This can be illustrated by the following unaccusative constructions, based on Itkonen (1979), where a unique interpretation for the postverbal argument is not allowed due to the Definiteness Effect (cf. Vangsnes 1994). ('ILL' stands for illative case.)

(102) a. Verkoon tuli kalaa / kala *Finnish*
net-ILL came fish-PAR / fish-NOM
'There came fish/a fish into the net.'
b. Verkoon tuli kaloja / kalat
net-ILL came fish-PL-PAR / fish-PL–NOM
'There came fishes/some fishes into the net.'

In other words, an uncountable postverbal argument will always carry partitive case in Finnish, and singular and plural uncountable noun phases are thus grammatically marked uniformly in this language just as we have seen for English, Norwegian, French, and NN-Swedish above. Accordingly, all in all this supports the (fairly uncontroversial) view taken in section 2.5 that the two noun phrase types share central semantic properties and that they therefore together constitute a class. Their common denominator is that they denote uncountable referents and in the present approach that means that the functional category ν is absent from their phrase structure.

A question that arises is how the dependency between partitive case and lack of ν should be captured within the present theory. It would lead too far to consider the issue in detail, but some notes are in order.

Kiparsky (1998) unifies the NP-related and VP-related functions of partitive case by saying that partitive case on a postverbal argument marks the predicate as 'homogen-

ous', having either a homogenous head (the VP-related function, yielding atelicity) or a homogenous argument (the NP-related function, yielding mass denotation). Simplifying Kiparsky's analysis, he takes assignment of partitive case to be dependent on the presence of a morphosyntactic feature [+H] either on the predicate or on the postverbal argument, or both. Conversely, the presence of the feature [–H] (i.e. 'non-homogeneity') is required on *both* the predicate and the postverbal argument for accusative/nominative case to be assigned.

Let us then take the functional category ν to be the noun phrase internal correlate of Kiparsky's [–H] feature: its presence, and hence 'countability', is required for assignment of accusative/nominative objective case to be licit. What the clausal correlate of Kiparsky's [–H] is, I will leave for future research to decide, but evidently such a clausal correlate is also required for accusative/nominative objective case assignment to obtain.

Importantly however, the case assignment has no consequence for the calculation of the identification of the noun phrase internal functional categories. If we for example compare the partitive and nominative arguments in (102a), *kalaa* and *kala*, respectively, the noun will raise and identify the functional categories in both cases as discussed in section 3.2: the difference is that in the former case there is one functional category less (i.e., since ν is absent).

This is in line with what we have said about the specification of features like [case]: what is relevant is its presence, not its specification. In that respect the system of Finnish case marking is not equivalent to article systems in other languages: from a noun phrase internal point of view it does not involve the Availability Principle, but rather pertains to issues of agreement, a matter we must leave out of the present discussion.[41]

4.7. *Conclusion*

The preceding subsections have served to illustrate how the theory presented in section 3 accounts for the fact that when a language has articles it must use them whenever possible and moreover how the use of the various articles in a language can be taken to follow from their feature specifications and in turn suitability for identification.

The statement that articles must be used whenever possible may appear so self-evident that it hardly deserves to be mentioned. However, if one assumes that the principles for syntactic structure are uniform across languages, and moreover one chooses to attribute syntactic structure semantic relevance, one needs to account for how languages can "manage" without articles and with differing article systems. I believe the discussion above has shed some light on these issues.

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[41] Agreement and more specifically checking of agreement is discussed in Vangsnes (1999a). There it is argued that checking of agreement obtains between heads in an extended projection (non-locally) and between an agreeing head and its specifier (locally). In the case of Finnish accusative/nominative case marking, we would take it that if these cases is assigned to a KP, ν is required to be present in the extended projection of the noun phrase, and its presence is controlled for through the non-local checking relation.

5. INTERMEZZO: SOME OBSERVATIONS CONCERNING RELATIVE CLAUSES

Fodor and Sag (1982) note that non-restrictive relative clauses force a specific reading of a weak noun phrase. Restrictive relative clauses on the other hand allow non-specific readings although they tend to make specific readings salient since they add more descriptive material to the noun phrase. Still, when uttering (104), for instance, the speaker necessarily must have a particular individual in mind. The same does not apply to the sentence in (103). (The examples are based on Fodor and Sag's (22) and (23).)

(103) A student in the syntax class who has a Ph.D. in astrophysics can be expected to cheat on the exam. (restrictive)
(104) A student in the syntax class, who has a Ph.D in astrophysics, can be expected to cheat on the exam. (non-restrictive)

The correlation between non-restrictive relative clauses and specificity is supported by the fact that a weak noun phrase with a non-restrictive relative may not appear in a negated existential sentence. A relative containing the adverb *by the way* necessarily must be non-restrictive, and as illustrated in (105) and (106), such a relative clause can only appear in non-negated existentials (unless, of course, the negation is external).

(105) There were some students, who by the way passed the exam, waiting in the professors office.
(106) *There weren't (any) students, who by the way passed the exam, waiting in the professors office.

A diagnostic for non-restrictive relatives is that the relative pronoun (or complementizer) is obligatory, whereas it may be dropped if the relative is restrictive and the gap a non-subject position. As shown by (107) a restrictive relative sentence is felicitous in a negated existential.

(107) There weren't (any) students professor Smith had given good grades waiting in the office.

The fact that there is a correlation between non-restrictive relatives and specific readings seems intuitively straightforward—non-restrictive relatives give additional information about a referent and thus requires the existence of a discourse referent established "in its own right", as it were. Restrictive relatives on the other hand contribute in defining the extension of the noun phrase by delimiting the set of possible referents.

In the light of the last point there is an interesting observation to be made concerning restrictive relatives and uncountable noun phrases. Compare the three sentences in (108).

(108) a. Water (that) we spill on this floor will evaporate quickly.
b. *Water (that) we spilled on this floor evaporated quickly.
c. The water (that) we spilled on this floor evaporated quickly

In the first sentence where the relative clause (and the matrix clause too) denotes a potential state-of-affairs, its presence in the uncountable noun phrase is felicitous. However, in (108b) where the relative clause is temporally anchored, and thus denotes an event, it cannot occur with the mass noun. In turn, if the uncountable noun phrase is uniquely and specifically referring as in (108c), the occurrence of the restrictive relative is again fine.

A comparable effect, i.e. the ungrammaticality of a restrictive relative, is not found in a noun phrase with a count noun, as shown by the examples in (109).

(109) a. A vase (that) we drop will break on this floor.
b. A vase (that) we dropped broke on this floor.
c. The vase (that) we dropped broke on this floor .

Arguably, the noun phrase in (109b) is specifically referring, and the effect we observe in (108b) may be due to the impossibility of getting a specific reading for a bare singular. However, notice that the effect does not pertain to non-restrictive relatives. This is shown in (110).

(110) a. Water, which we had just fetched in abundance from the well, was floating all over the floor.
b. A vase, which we had brought from home, broke on the hard floor.

Moreover, the effect seems to be restricted to singular uncountable noun phrases—as shown in (111) an event denoting restrictive relative clause is possible with a bare plural in English.

(111) a. Potatoes that my granny had grown in her backyard, were served with the meal.
b. Potatoes, which by the way my granny grows in her backyard, were served with the meal.

Let us then conclude that for an event denoting restrictive relative clause to be felicitous in a noun phrase, the noun phrase must contain an element which enables a countable reading of it. If we consider this conclusion together with Fodor and Sag's observation that restrictive relatives do not necessitate a specific reading of a weak noun phrase, we may, under the present theory, interpret this to mean that an event denoting relative clause requires the presence of the functional category ν in the phrase structure. The category δ on the other hand may, but need not, be present. This finding will be of some importance in the next sections, in particular in section 6.2.

As for non-restrictive relatives, we could, based on Fodor and Sag's original observation, be tempted to say that their presence in a noun phrase is dependent on the presence of the functional category δ since they yield a specific reading for weak noun phrases. However, the subject noun phrases in examples like (110a) and (111b) are not specifically referring any more than the versions without the relative clause—they denote a mass which need not be given in the context.

Still, when we study the examples in (110) more closely we see that there is a difference regarding what the correlate of the non-restrictive relative clause is: whereas the water that was fetched from the well need not be the same water that was spilled on the floor, the vase which was brought from home is necessarily the same vase as the one that broke against the floor. In other words the denotation of the object gap in (110a) is inferred from the denotation of the correlate, whereas the gap and the correlate must be coreferent in (110b).[42]

We may thus assume that there is a certain affinity between non-restrictive relatives and the functional category δ, i.e. the one that yields a specific interpretation for a noun phrase—at least it seems that when δ is present, the relative clause and the matrix clause denote the same entitiy. This finding will also be of some importance in later sections.

6. ON DEFINITE DETERMINERS AND DEFINITENESS

6.1. *'Specific' articles?*

From the discussion of referentiality in section 2 we recall that the presence of a definite element in a noun phrase, i.e. either a demonstrative or a definite article, typically entails that the noun phrase denotes a discourse referent which is identifiable for the listener. In other words definite noun phrases are typically uniquely referring.

Still, there are several examples, from a variety of languages, of definite noun phrases which are not uniquely referring. In English we have so-called indefinite-*this* noun phrases and absolute superlatives, and in both Norwegian and Icelandic we find noun phrase types containing definite determiners (demonstratives and the definite article) with special intensified interpretations. As illustrated by the examples in (112)–(114), none of these types of noun phrases is subject to the Definiteness Effect of existential sentences and other unaccusative constructions (cf. Vangsnes 1994b, ch. 5 and references cited there). In none of the three languages are uniquely referring noun phrases allowed in the postverbal position of such sentences.[43]

(112) a. There was this girl at the party yesterday. *English*
b. There was the most gorgeous girl at the party yesterday.

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[42] Notice that the inference involved in (110a) is similar to the example discussed in footnote 16, repeated here, where the denotation of a pronoun is inferred from the content of a preceding noun phrase which denotes an empty set.

(i) There were no students at my lecture. I had forgotten that I had given **them** a day off.

[43] The Icelandic example is due to Gunnar Ólafur Hansson (p.c.).

(113) Det var DEN dama på festen i går. *Norwegian*
EXPL was that lady-DEF on party-DEF yesterday
'There was this really good-looking babe at the party yesterday'

(114) fia› var komin flessi líka gullfallega stelpa í part‡i›. *Icelandic*
EXPL was come this PRT gold-beautiful girl in party-DEF
'This really good-looking girl had come to the party.'

Although these types of definite noun phrases are not uniquely referring, they seem to be unambiguously specific. Remember the test for specificity: I suggested that negated existential sentences predicate the non-existence of the referents denoted by the noun phrase in the postverbal position. If we negate the sentences in (112)–(114) we get ungrammatical results in all cases, a fact suggesting that these types of noun phrases presuppose the existence of their referents.

(115) a. *There wasn't this beautiful girl at the party. *English*
b. *There wasn't the most gorgeous girl at the party.

(116) *Det var ikke DEN dama på festen i går. *Norwegian*
EXPL was not that lady-DEF on party-DEF yesterday

(117) *fia› var ekki komin flessi líka gullfallega stelpa í part‡i›. *Icelandic*
EXPL was not come this PRT gold-b.ful girl in party-DEF

These construction types thus support the view that 'definiteness' as a grammatical category bears a strong relation to specificity, an observation which is line with what we have seen earlier (cf. for instance section 2.1).

The Norwegian intensifying noun phrase type will be discussed in section 6.2. As for the phenomenon of indefinite-*this* it appears to be a wide-spread trait of colloquial English, perhaps especially American English. That noun phrases involving this variety of the proximal demonstrative are specifically referring is not a novel observation (cf. Prince 1981), but as far as I know it has not been suggested that this element in fact may be a 'specific' article.

Let us consider that as a possibility, at least for certain varieties of English. That would then mean that the element should be obligatory in specifically referring noun phrases in those varieties—by definition an article is a functional element, and thus available for evaluation of economy throughout a derivation. If, moreover, the same varieties of English also have a definite and an indefinite article, we must consider how we can predict the co-existence of the three articles. More specifically, there must be cases where each article is the preferred one.

Consider first the most straightforward case: indefinite *this* versus the indefinite article. If indefinite *this* carries the feature [deix] we immediately predict that it will be

preferred over the indefinite article for identification of δ, and hence that it will be the chosen identifier in a non-unique specifically referring noun phrase.

Still, what would make indefinite *this* different from the definite article or, for that matter, the regular "definite" this? These elements also contain the feature [deix], and, in particular, we need an account of why there exist cases where indefinite *this* is preferred over the definite article, the latter being a functional element and hence generally available. Conversely, there also exist cases where the definite article is preferred over indefinite *this*.

One possibility is to assume that indefinite *this* lacks the feature [ ]. Then the definite article will be the preferred identifier in a noun phrase containing δ and $\kappa_{[+u]}$ whereas indefinite *this* will be the preferred identifier in a noun phrase containing δ and $\kappa_{[-u]}$, i.e. a non-unique specific noun phrase. In turn, the indefinite article will be the preferred identifier in a (countable) noun phrase lacking the functional category δ. Summarizing, the three articles will have the following feature specifications.

(118)

the:	*this*:	*a*:
[nominal]	[nominal]	[nominal]
[deix]	[deix]	[num]
[ ]	[num]	

Whether or not such a system exists—i.e. where indefinite *this* is obligatory in certain cases—in some variety of English is an empirical question, and I have not carried out any research, nor do I know of any existing research which gives an answer to the question. Still, if such a system does exist in colloquial (American) English, it may shed some light on the phenomenon of demonstrative reinforcement in some American English dialects discussed by Bernstein (1997) where a deictic adverb co-occurs with demonstrative. One of Bernstein's examples is given in (119).

(119) this here guy *colloquial American English*

If the feature [ ] is absent from *this*, and the determiner thus no longer has the canonical feature specification of a demonstrative, the emergence of a new determiner with the properties of the "old" *this* would not be unexpected.[44]

Another issue pertaining to specificity is the standard view that *a certain* entails this referential property. *Certain* is traditionally regarded as an adjective, but I will argue that it has the status of being a determiner, i.e. an element merged in the extensional domain of the noun phrase and not in the intensional domain like adjectives (cf. section 3.1). One

[44] In fact, as shown by Haspelmath (1993:282f) the etymology of the English (and more generally West Germanic) proximal demonstrative *this* is an exact parallel to the (potential) grammaticalization process witnessed in the modern American English dialects: it emerged from the combination of the simple demonstrative *sa* (masc. sg. nom.) (with an initial dental fricative in many of the other case and gender forms) and the deictic particle *se*/*si*, and in fact the original demonstrative became the Old English definite article, and later the present-day Modern English 'the'.

The existence of complex demonstratives consisting of a determiner and a deictic adverb or clitic is moreover well known from other languages, and for discussion of such demonstratives in contemporary Scandinavian dialects see Vangsnes (1999a).

straightforward argument for that is that *certain* occurs to the left of numerals. This is illustrated for English and Norwegian in (120) and (121), respectively.

(120)	a.	certain	three	linguists	*English*
	b.	*three	certain	linguists	
(121)	a.	visse	tre	lingvister	*Norwegian*
		certain	three	linguists	
	b.	*tre	visse	lingvister	
		three	certain	linguists	

The English example in (120b) is strictly speaking not ungrammatical, but on the grammatical reading *certain* cannot have the same meaning as in (120a)—the noun phrase is only grammatical under an interpretation which is closely equivalent to 'three determined/sure linguists' (i.e. where *certain* contributes to the content/intension rather than to (just) the extension of the noun phrase). Given that *certain* in these examples is a determiner, it seems reasonable to take the singular form *a certain* to be a complex determiner and that *a* is not, synchronically speaking, the indefinite article.

To account for the fact that *a certain* is a determiner which yields specificity, we may take it to carry the feature [deix] but not [ ], somewhat on a par with what we have argued for indefinite *this*, and that it therefore is a well-suited element for identifying δ.

Let us next turn to another type of unambiguously specific noun phrases which involves definiteness but which nevertheless is not uniquely referring, namely intensifying noun phrases in Norwegian.

6.2. *Intensifying noun phrases in Norwegian*

The intensifying noun phrase type in Norwegian is discussed in Vangsnes (1994a, 1994b, 1997). These noun phrases have the same syntactic structure as demonstrative noun phrases involving the distal demonstrative, but they have a characteristic prosodic pattern where the determiner carries stress and the following word a secondary stress. The same prosodic pattern may however also be found in demonstrative noun phrases, and whereas the noun phrase in (122a) in isolation is ambiguous between an intensifying reading and a demonstrative one, the one in (122b) can only have a demonstrativereading.[45] The different intonational patterns which result from the difference in stress assignment are marked with accents.

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[45] In both demonstrative and intensifying noun phrases the determiner co-occurs with the suffixed definite article, and notice furthermore that the distal demonstrative is also homophonous with the preadjectival definite article in Norwegian, i.e. an article which is required in definite noun phrases containing an attributive adjective. Such noun phrases differ from demonstrative and intensifying ones in that the determiner never carries stress. Accordingly, the following noun phrase is either, on the one hand, demonstrative or intensifying, or, on the other, "plainly" definite depending on whether the determiner carries stress or not.

(i)	den	lille	rotta	*Norwegian*
	DET	little	rat-DEF	
	'that/the little rat'			

(122) a. dèn rótta *intensifying or demonstrative*
that rat-DEF
b. dèn rotta *demonstrative*
that rat-DEF

Henceforth, the characteristic prosodic pattern found in intensifying noun phrases will be indicated by capitalizing the determiner.

The reason why such noun phrases are called intensifying, is that they have an interpretation where some property of the referent is intensified, and the property intensified is either overtly expressed, say by an adjective, or it may simply be a salient marked and gradable property inherent to the noun. It may also be quite arbitrarily inferred from the situational context, and all in all the bottom line is that whenever an intensifying noun phrase is used, the referent must be understood as having some remarkable property—the demonstrative "points" to a property rather than to a referent, as it were. (Cf. Vangsnes 1997 for details.) These aspects of the intensifying effect may be illustrated by the following examples.

(123) a. Det var DEN rotta på badet vårt i morges. *Norwegian*
EXPL was that rat-DEF on bathroom-DEF ours in this-morning
'There was an incredible rat in our bathroom this morning.'
b. Det var DEN lille rotta på badet vårt i morges.
EXPL was that little rat-DEF on bathroom-DEF ours in this-morning
'There was an incredibly small rat in our bathroom this morning.'
c. De har meldt DET været til i morgen.
They have forecasted that weather-DEF for to morrow
'They have forecasted incredible weather for tomorrow.'

The most natural interpretation of (123a) is that the sentence involves a big, maybe fat and ugly, rat, probably because this/these are salient properties of rats for most people. However, such an interpretation is not possible in (123b) where the relevant noun phrase contains the adjective 'little'—then it is the property denoted by this adjective which is intensified. Lastly, in isolation the sentence in (123c) may either mean that very nice weather or very bad weather has been forecasted, and thus shows that the intensifying effect in some cases may apply quite arbitrarily.

In addition to their intensified interpretation we have seen that intensifying noun phrases have other referential properties than demonstrative noun phrases. As shown in the preceding subsection they are not subject to the Definiteness Effect of existential sentences (and expletive constructions more generally), and thus denote referents that are not identifiable for the listener. However, they share with demonstrative noun phrases the property of being specifically referring as they cannot be the postverbal argument of a negated existential sentence.

Now, there are some highly interesting formal restrictions pertaining to possible adnominal constituents in the Norwegian intensifying noun phrases that are not found in demonstrative noun phrases. For one thing they cannot contain numerals—the noun phrase in (124a) can only be interpreted as demonstrative, and the asterisk thus is intended to mark it as an impossible intensifying noun phrase. The example in (124b), which can only be demonstrative, shows that there is no general restriction on numerals in demonstrative noun phrases.

(124)	a.	*DE	fire	flotte	stolene	*Norwegian*
		those	four	fine	chairs-DEF	
	b.	disse	fire	flotte	stolene	
		these	four	fine	chairs-DEF	

Moreover, intensifying noun phrases may not contain restrictive relative clauses. Non-restrictive relatives on the other hand are fine. This is shown in (125) and the example in (125c) gives a sentence where the allowed noun phrase could occur.

(125) a. DE flotte stolene, som Per for øvrig likte godt *Norwegian*
those nice chairs-DEF that Per by-the-way liked well

b. *DE flotte stolene Per likte veldig godt.
those nice chairs-DEF Per liked very well

c. Marit har kjøpt DE flotte stolene, som Per for øvrig likte godt, til kjøkkenet.
Marit has bought those nice chairs, which Per btw liked well, for the kitchen

Given the observations made in section 5 concerning restrictive relative clauses, we may take the two restrictions seen on these noun phrases to stem from the same source: absence of the functional category ν. The question then is why this functional category cannot be part of the numeration in an intensifying noun phrase in Norwegian. The answer, I believe, lies in the fact that it is difficult to conceive of countability as a property that can be intensified.

If the intensifying effect in these noun phrases is related to the definite determiner in D^0, and what the determiner intensifies is the property of the first projection D' dominates, it follows that ν, the functional category which entails countability, cannot be present. Next, since numerals are merged within the NumP domain they cannot be present in the numeration either, and lastly, given that restrictive relatives are dependent on the presence of the functional category ν, the fact that they are not allowed in intensifying noun phrases is given an account.

The possibility of having a non-restrictive relative is of course unproblematic since intensifying noun phrases are specifically referring. As we would expect, the gap of the relative clause and the matrix noun phrase refer to the same entity.

In the next subsection we will consider some interesting issues concerning the correlation between non-restrictive relatives and the functional category δ that are related to universal quantifiers.

6.3. *'Each' as identifier of* δ

The Norwegian univerally quantifying determiners *all(e)* 'all', *hver* 'each/every', and *enhver* 'free choice *any*' differ with respect to whether they can co-occur with other determiners, and they basically pattern with their English equivalents: whereas *all(e)* may co-occur with both definite and weak determiners, *hver* and *enhver* may not occur with any other determiners, and moreover *all(e)* is compatible with both singular and plural morphology on the noun (and the other determiners) whereas *hver* and *enhver* require singular morphology. These facts are shown in (126)

(126) *Norwegian*

a. alle disse tre berømte lingvistene
   all these three famous linguists-DEF
   'all of these three famous linguists.'

b. alt dette gode ølet
   all this good beer-DEF
   'all of this good beer'

c. alle lingvister
   all linguists
   'all linguists'

d. alt øl
   all beer
   'all beer'

(127)

a. hver bil
   each car

b. *hver denne bilen
   each this car-DEF

c. *hver den gule bilen
   each the yellow car-DEF

d. *hver noen bil
   each some car

e. *hver min bil
   each my car

(128) *Norw.*

a. enhver bil
   any car

b. *enhver denne bilen
   any this car-DEF

c. *enhver den gule bilen
   any the yellow car-DEF

d. *enhver noen bil
   any some car

e. *enhver min bil
   any my car

Attributive adjectives may co-occur with all three determiners, and in that respect the determiner *hver* shows an interesting behavior. In Norwegian, and Scandinavian more generally, there are two types of adjectival inflection; one which co-occurs with definite determiners within the noun phrase and one which occurs otherwise, i.e. in indefinite noun phrases and predicatively. (See Delsing 1993, Kester 1996 for details.) The two types are traditionally referred to as 'weak' and 'strong' inflection, respectively, but in order to avoid confusion with the usage of these labels here, we may refer to them as 'definite'

and ‘indefinite’. The examples in (129) give an illustration of which contexts the two types of adjectives occur in.

(129) a. en **liten**/*lille bil *Norwegian*
a little-IND/little-DEF car
‘a small car’
b. denne **lille**/*liten bilen
this little-DEF/little-IND car-DEF
‘the small car’
c. min **lille**/*liten bil
my little-DEF/little-IND car
‘my small car’

The adjective type co-occurring with *all(e)* will depend on whether or not a definite determiner is present in the noun phrase, and since *enhver* (‘free choice any’) and *hver* cannot co-occur with such determiners, we would perhaps expect them to be compatible with indefinite adjectives only. That is the fact for *enhver*, but interestingly *hver* may co-occur with both types of adjectives. These facts are shown in (130).

(130) a. all **god**/*gode vin *Norwegian*
all good-IND/-DEF wine
b. all denne **gode**/*god vinen
all this good-DEF/good-IND wine-DEF
c. hver **liten**/lille bil
each little-IND/-DEF car
d. enhver **liten**/*lille bil
any little-IND/-DEF car

This difference between *hver* and *enhver* as well as the obvious etymological relationship between the two (*enhver* is literally ‘one/a’+*hver*), makes it desirable to compare them with each other.

Interestingly, in a noun phrase with *hver* a non-restrictive relative can only co-occur with an adjective if the adjective is definite. In an *enhver* noun phrase, on the other hand, a non-restrictive relative clause is not allowed at all. Restrictive relative clauses are allowed in both noun phrase types, however. These facts are illustrated in (131) and (132).

(131) a. Hver nye bil, som for øvrig har kollisjonspute, er importert av Jæger.
each new-DEF car which by-the-way has airbag is imported by Jæger
b. *Hver ny bil, som for øvrig har kollisjonspute, er importert av Jæger.
each new-IND car which by-the-way has airbag is imported by Jæger
c. Hver nye/ny bil som har kollisjonspute, er importert av Jæger.
each new-DEF/-IND car which has airbag is imported by Jæger

(132) a. *Enhver ny bil, som for øvrig har kollisjonspute, er importert av Jæger.
any new-IND car, which by-the-way has airbag, is imported by Jæger.
b. Enhver ny bil som har kollisjonspute, er importert av Jæger.
any new-IND car which has airbag, is imported by Jæger

Now, let us assume that definite adjectival inflection is triggered by agreement with the feature [deix] when the identifier of δ carries this feature.[46] Within the present theory we could then account for the difference between *hver* and *enhver* by saying that the former but not the latter carries the feature [deix].

In turn, if we idealize and say that *enhver* is never merged when the noun phrase contains δ since there exists another element which has much of the same properties, but which is a better identifier for δ, namely *hver*, we have prepared the ground for an account of why non-restrictive relatives are only possible with *hver*, and only when co-occurring attributive adjectives are definite.

Since *hver* may identify δ, and noun phrases containing it thus may be specifically referring, the presence of non-restrictive relative clauses in such noun phrases should be unproblematic. As for noun phrases containing *enhver* on the other hand, if δ cannot be identified, the referent for the gap in the relative clause must be inferred. For some reason such inference appears to be difficult when the matrix noun phrase denotes a referent whose existence is only potential (cf. footnote 6).

In this respect it is worth noticing that there seems to be a dependency between non-restrictive relatives and definiteness also in noun phrases containing the universally quantifying determiner *all*. The examples used here are English, but the same facts can be illustrated for Norwegian.

(133) a. ?*All famous linguists, who by the way speak several languages fluently, wrote at least one textbook.
b. All the famous linguists, who by the way speak several languages fluently, wrote at least one textbook.

Moreover, I believe that there is a fairly strong independent semantic basis for assuming that the presence of definite adjectives with *hver* entails a discourse anaphoric reading of the noun phrase whereas presence of indefinite adjectives entails the opposite. Consider the following.

[46] As to how agreement obtains technically I assume that it is triggered through head-head agreement between D^0 and the adjective on the assumption that adjectives are heads in the extended projection of the noun. See Vangsnes (1999a) for details.

(134) a. Legg hvert **umodent** eple i denne kassen. *Norwegian*
put every unripe-IND apple in this box-DEF
'Put every unripe apple in this box'

b. Legg hvert **umodne** eple i denne kassen.
put every unripe-DEF apple in this box-DEF
'Put each unripe apple in this box'

c. Legg ethvert **umodent** eple i denne kassen.
put any unripe-IND apple in this box-DEF
'Put any unripe apple in this box'

By uttering the sentence in (134a) the speaker means that if you should happen to come across unripe apples, you should put them in the relevant box. The same can be said about the sentences in (134b) and (134c), but when uttering the sentence in (134b) the speaker in addition takes it for granted that you *will* come across unripe apples. The same cannot be said about (134a) and (134c). In fact, if the instruction is preceded by a sentence like e.g. 'Here we have a heap of apples some of which are ripe and some unripe', only the version in (134b) would be felicitous.

This strengthens the view that a *hver* phrase with a definite adjective presupposes the existence of its referent, and hence is specifically referring, whereas a *hver* phrase with an indefinite adjective does not.

In relation to this we may note that Kester (1996:105f) reports an interesting fact about adjectival inflection in Dutch. Although Dutch adjectival inflection does not exactly parallel the adjectival inflection found in Norwegian and other Scandinavian lanugages, the form of Dutch attributive adjectives is sensitive to (among other things) definiteness. This sensitivity can however only be witnessed in noun phrases with neuter nouns, and in such noun phrases adjectives will normally lack inflection if the noun phrase contains a weak determiner or no determiner at all whereas they will carry the ending *-e* if the noun phrase contains a definite determiner.

Still, in certain neuter noun phrases containing a weak determiner and denoting humans, we find a possibility for either an inflected or an uninflected adjective. Kester (op. cit.) gives the examples in (135).

(135) a. Welk ziek_/ziek*e* kind kun je in bed houden? *Dutch*
which sick child can you in bed keep
'What/which sick child can you keep in bed?'

b. Met welk mooi_/mooi*e* meisje heb je gedanst?
with which beautiful girl have you danced
'Which beautiful girl have you danced with?'

Interestingly, the choice of form for the adjective seems to have a semantic effect. Kester (op. cit:106) comments on the examples in (135) in the following way: "[i]nformally speaking, the inflected form [...] presupposes a set previously introduced in the dis-

course." Given that the form of the adjective is triggered by δ being identified by an element containing the feature [deix] (say the determiner *welk*), this is another instance showing the referential property entailed by the presence of this functional category in a noun phrase.

Issues related to the matters discussed above surely await further studies, but let us conclude that it appears quite promising to attribute the syntactic (and semantic) differences between the Norwegian determiners *hver* and *enhver* to the presence/absence of the feature [deix].

As for the feature specification of these determiners more generally, we noted above that *hver* and *enhver* require singular morphology on the noun whereas *all(e)* is compatible with both singular and plural morphology. This could be captured by saying that whereas the former two determiners carry the lexical feature [num] (in turn specified 'singular'), *all(e)* carries the *agreement* feature [num] (whose specification then is determined by agreement with other constituents). Since all three determiners arguably are universally quantifying, and with the additional information that they all are specified for gender in Norwegian, their feature composition would be as given in (136).

(136)

hver:	*enhver*:	*all(e)*:
[nominal]	[nominal]	[nominal]
[gen]	[gen]	[gen]
$[num]_{lex}$	$[num]_{lex}$	$[num]_{agr}$
[deix]	[ ]	[ ]
[ ]		

Furthermore, the structures for the phrases *hver nye bil* and *hver ny bil*, i.e. 'each new car' with definite and indefinite adjectival inflection, respectively, would be roughly as in (137), assuming that both the the determiner and the adjective are heads.

(137) a. $[_{KP}\ [_{K^0}\ hver_i]\ [_{DP}\ [_{D^0}\ t_i]\ [_{NumP}\ [_{Num^0}\ t_i]\ [_{AP}\ [_{A^0}\ nye\ [_{NP}\ bil\ ]]]]]]$

b. $[_{KP}\ [_{K^0}\ hver_i]\ [_{NumP}\ [_{Num^0}\ t_i]\ [_{AP}\ [_{A^0}\ ny\ [_{NP}\ bil\ ]]]]$

6.4. *Generics*

The preceding subsections have demonstrated the close affinity between definiteness and the functional category δ. There are cases of grammatically definite noun phrases which are not uniquely referring but which nevertheless are unambiguously specific. Under the present theory that follows fairly straightforwardly from the assumptions that definite elements carry the feature [deix] which is of relevance for the identification of the functional category δ.

Nevertheless, it is important to keep in mind that the theory allows for definite elements to be present in a noun phrase even when δ is not a part of the numeration—most definite elements are assumed to also carry the feature [ ] relevant for identification of the functional category $\kappa_{[+u]}$. Generic definite noun phrases constitute a case in point.

As we remember from section 2.4 there are clear parallels between universally quantifying non-definite noun phrases and generic noun phrases: in both cases co-reference with a following pronoun is dependent on special grammatical and situational contexts. The examples discussed previously are repeated here.

(49) a. **All Swedes** speak English quite well. **They** learn it at school.
b. **All Swedes** speak English quite well. #**They** learned it at school.
c. **All the Swedes** speak English quite well. **They** learned it at school.

(50) a. **The potato** originally came from South America, and **it** became a blessing for the peoples of Northern Europe.
b. **The potato** originally came from South America, and **it** was consumed at a dinner party in London last week.
c. **The potato** originally comes from South America, and #**it** was consumed at a dinner party in London last week.

Without recapitulating the discussion, we may claim that what definite generic noun phrases and non-specific universally quantifying noun phrases have in common is the absence of the functional category δ. The effect of assuming this has been demonstrated for universally quantifying noun phrases in the preceding subsection, and, extending the argument to generic noun phrases, the difference between a unique, specific reading and a generic reading for the noun phrase *the potato* would be as illustrated in (138). (138a) gives the structure and derivation for the regular definite reading and (138b) the structure and derivation for the generic reading.

(138) a. [KP **the$_i$ – κ$_{[+u]}$** [DP **t$_i$ – δ** [NumP **t$_i$ – ν** [NP **potato**]]]]
b. [KP **the$_i$ – κ$_{[+u]}$** [NumP **t$_i$ – ν** [NP **potato**]]]

6.5. *Conclusion*

The present theory offers an account of why definite elements typically occur both in specifically referring and uniquely referring noun phrases. Specificity and uniqueness are correlated with distinct functional projections, headed by the functional categories δ and κ$_{[+u]}$, respectively, and since we assume that definite elements may have a feature relevant for the identification of both of the functional categories, [deix] and [ ] respectively, it will follow that definite elements can be preferred identifiers for both functional categories.

Several additional issues concerning the various referential properties found in noun phrases with definite elements could be considered further, but at least it seems that the issues we have addressed have provided us with interesting results.

This section concludes the investigation of the correlation between functional categories and referential properties in the noun phrase. In the remaining section we will extend the application of the theory to the the clausal domain.

7. THE CLAUSAL DOMAIN: SOME REMARKS ON FINITE CLAUSES VERSUS INFINITIVALS

The central claim that has emerged so far in this paper is that there is, or at least can be, a close affinity between noun phrase internal functional projections and the extensional interpretation of the noun phrase: extensional relations are in fact taken to be dependent on the very presence of particular functional categories in the architectural base of the noun phrase.

This way of thinking of functional categories may in my opinion fruitfully be extended to clauses: the semantic contribution of elements merged in verbal functional projections can be said to anchor the act denoted by the main verb with respect to time, participants in the act, and so forth. A full discussion of this is beyond the scope of the present paper, but we may get an idea of how the general theory may be extended to the clausal domain by considering how the difference between finite clauses and infinitivals may be handled in a way parallel to the treatment given for noun phrases above.

From a morphological point of view the difference between finite verbs and infinitives in languages like English is that infinitives have no tense morphology. Moreover, one could claim that infinitivals have no independent temporal semantics (though see Stowell 1982 for claims to the contrary), and under the present theory we could interpret this to mean that a functional category related to tense interpretation and tense morphology is not present in infinitival clauses, more specifically that they do not contain any TP.

This is a fairly non-standard conjecture, mainly having to do with how the Extended Projection Principle and Case assignment to the subject is conceived of (cf. Thráinsson 1993 and references cited there for details). However, the suggestion has an obvious conceptual advantage, and moreover I think that it provides an interesting basis for analyzing a certain well-known difference between Icelandic and Mainland Scandinavian infinitival control complements. As shown in (139)–(140) the verb must "move" across a sentential adverb in Icelandic infinitival control complements, whereas it cannot in Mainland Scandinavian, represented here by Norwegian.

(139) a. Jólasveinarnir lofu›u a› bor›a aldrei bú›ing. *Icelandic*
Santa-Clauses-DEF promised to eat never pudding
b. *Jólasveinarnir lofu›u a› aldrei bor›a bú›ing.
Santa-Clauses-DEF promised to never eat pudding
'The Santa Clauses promised to never eat pudding'

(140) a. *Julebukkene lovte å spise aldri pudding. *Norwegian*
Xmas-goats-DEF promised to eat never pudding
b. Julebukkene lovte å aldri spise pudding.
Xmas-goats-DEF promised to never eat pudding
'The Christmas goats promised to never eat pudding'

This parallels the situation found in embedded finite clauses where there is finite verb movement in Icelandic but not in Mainland Scandinavian. Consider (141) and (142).

(141)	a.	... a›	jólasveinarnir	bor›u›u	aldrei	bú›ing.	*Icelandic*
		that	the-Santa-Clauses-DEF	ate	never	pudding	
	b.	*... a›	jólasveinarnir	aldrei	bor›u›u	bú›ing.	
		that	the-Santa-Clauses-DEF	never	ate	pudding	

(142)	a.	*... at	julebukkene	spiste	aldri	pudding.	*Norwegian*
		that	the-Xmas-goats-DEF	ate	never	pudding	
	b.	... at	julebukkene	aldri	spiste	pudding.	
		that	the-Xmas-goats-DEF	never	ate	pudding	

The movement found in Icelandic but not in Mainland Scandinavian is generally referred to as V-to-I-movement, and since Holmberg and Platzack (1988) it has been widely accepted that the difference between the languages on this point in some way or another is related to a very clear difference in the verbal morphology of Icelandic on the one hand and Mainland Scandinavian on the other: Icelandic has a rich inflectional system with both person and number subject-verb agreement on finite verbs, whereas Mainland Scandinavian finite verbs only carry tense morphology. This difference is captured by Holmberg and Platzack (op.cit, 1995) by postulating the so-called "AGR-parameter", and the idea is basically that a positive setting for this parameter triggersV-to-I-movement whereas a negative setting does not. A number of other syntactic properties have been related to this parameter, but that need not concern us here.

However, Icelandic infinitives have neither person nor number agreement, and Thráinsson (1993:188), who assumes a checking based account of verb movement, states that it is unclear how "richness of agreement" can serve to explain the fact that there is verb movement across sentential adverbs in Icelandic infinitival clauses but not in Mainland Scandinavian ones. We can offer the following clarification.

We assume the clausal functional projections CP, AgrSP, and TP, and we take it that they are ordered from left to right so that CP dominates AgrSP which dominates TP which in turn dominates VP. Moreover, the three projections are headed by the functional categories κ^{v}, σ, and τ, respectively.

The functional category heading, κ^{v}, is the clausal counterpart of the κ we have been discussing above in connection with the noun phrase, and in order to keep the two apart we can assign the label 'κ^{n}' to 'nominal κ'. Just like its nominal counterpart κ^{v} exists in two varieties: $\kappa_{[+finite]}$ and $\kappa_{[-finite]}$, and these two varieties both mark the phrasal object as 'clausal': κ^{v} is thus a categorial functional category and its presence is obligatory in any clause.

As for σ and τ on the other hand, they are extensional functional categories on a par with δ and ν in the nominal domain. Their presence is not obligatory, but when present, they yield certain semantic properties for the clause. The function of σ is to anchor the state-of-affairs denoted by the verb to the most prominent participant, i.e., in the unmarked

case, the subject. The function of τ on the other hand is to anchor the state-of-affairs with respect to time.

Like the nominal functional categories the clausal functional categories also need to be identified, and the features relevant for their identification are as follows ([±finite] is henceforth abbreviated as [±fin]).

The identification of clausal functional categories$_{def}$:

(i) $\kappa_{[-fin]}$ must be identified by an element containing at least one of the following features: [wh], [verbal],

(ii) $\kappa_{[+fin]}$ must be identified by an element containing at least one of the following features: [wh], [finite], [verbal],

(iii) σ must be identified by an element containing at least one of the following features: [person], [deixis], [Case], [verbal],

(iv) τ must be identified by an element containing at least one of the following features: [tense], [number], [verbal].

The preference principle of course applies as discussed earlier.

It would lead too far here to discuss all the issues that arise given this approach, but some discussion can be found in Vangsnes (1999b) where differences between Null Subject languages, Icelandic, and Mainland Scandinavian with respect to expletive constructions (and hence subject anchoring, i.e. issues related to the AgrSP domain) are considered in the light of the present theory. In the present discussion we will confine ourselves to those aspects that are relevant to what we have said above about infinitivals.

As for the features involved in the identification of clausal functional categories, [person] is an agreement feature, more specifically e.g. the subject agreement feature found on verbs (and in some languages on complementizers). The feature [number] is also an agreement feature, but the remaining features are lexical, and an important one for the following discussion is [deixis]: this feature of course has a clear affinity to the feature [deix] that is relevant for the identification of nominal functional categories, and the crucial point is that the feature will be assumed to be present in definite descriptions, i.e. in strong noun phrases where the functional category δ is identified by an element carrying the feature [deix], pronouns included.[47]

There is also a close relation between the feature [Case] within the clausal domain and the feature [case] within the nominal domain, but notice that the former is a lexical feature whereas the latter is an agreement feature. This then captures the distinction between 'abstract Case' and 'morphological case', and importantly we assume the Case Filter which says that all phonetically realized KPs (i.e. noun phrases) must be assigned (abstract) Case (cf. Chomsky 1981:49, 1995:111ff).

Given the claim that infinitivals do not have any temporal anchoring of their own, τ is not present in the phrase structure of an infinitival. As for subjects, we follow the

[47] We have not discussed pronouns earlier, but I will assume that they in the core cases have essentially the same phrase structure as uniquely referring discourse anaphoric (full) noun phrases.

traditional view that control infinitivals involve a covert pronoun which carries a θ-role but no Case, i.e. big 'PRO', and which is coreferent with (i.e. 'controlled by') an argument of the matrix verb (normally either the subject or the object), and in order for anchoring of PRO to the state-of-affairs denoted by the infinitive to obtain, σ must be present in the phrase structure. Moreover, $\kappa_{[-fin]}$ is present, marking the phrasal object as a clause, and accordingly we assume that the structure of a control infinitival is as follows.

(143) [CP $\kappa_{[-fin]}$ [AgrSP σ [VP]]]

The identifier of $\kappa_{[-fin]}$ in the Icelandic and Norwegian control infinitivals is the complementizer *að*/*å* which we assume carries the features [wh] and [verbal]. The interesting question is however how σ is identified.

Consider then first finite clauses with a definite subject, and to ease the discussion we confine ourselves to *embedded* finite clauses like the ones above in (141) and (142): we assume that the complementizer is merged, and identifies $\kappa_{[-fin]}$ in this case too. Since a finite clause will have a temporal anchoring of its own, the functional category τ is by hypothesis present in its phrase structure, and we take it that τ is identified by the tensed verb which carries the relevant feature [tense] in both Icelandic and Norwegian. In turn this means that the finite verb has moved (from V^0) to T^0 in both the Icelandic and the Norwegian example, and moreover it means that the adverb *aldrei*/*aldri* 'never' occurs to the left of the TP projection. This is in line with the assumption made by Bobaljik and Jonas (1996) that the adverb is adjoined to TP in finite clauses.

As for the identification of σ the definite subject will carry two lexical features relevant for the identification of σ in both Icelandic and Norwegian, namely [deix] and [Case]. On the other hand, with respect to the finite verb there is a difference between the languages: in both languages it carries the lexical feature [verbal], but in Icelandic, which has overt subject/verb agreement on finite verbs, the verb also carries the agreement feature [person]. In Norwegian, and Mainland Scandinavian in general, there is no subject/verb agreement and accordingly finite verbs do not carry the feature [person].

The features relevant for identification of σ present on the definite noun phrase and the finite verb in Icelandic (Ice.) and Mainland Scandinavian (MSc.), respectively, can thus be summarized as follows.

(144) a. Ice.: V_{fin}: [verbal] [person] KPδ: [deixis] [Case]

b. MSc.: V_{fin}: [verbal] KPδ: [deixis] [Case]

Given the Preference Principle this means that in Icelandic the verb will always be the preferred identifier for σ since it carries one agreement feature more than the (definite) noun

phrase. In Mainland Scandinavian on the other hand it will be the noun phrase since the noun phrase carries more features than the verb.

This is then our version of the AGR-parameter: the finite verb raises to $AgrS^0$ in Icelandic (i.e. past a TP-adjoined adverbial) because it is the preferred identifier, but in Mainland Scandinavian it does not raise since there is another preferred identifier. (The question why the definite subject also raises to the AgrSP domain in Icelandic (i.e. to Spec-AgrSP) is a different story, and the reader is referred to Vangsnes 1999b—an important point is that there is a difference between discourse anaphoric noun phrases and other noun phrases).

Turning now to infinitivals we reason as follows. Finite verbs and infinitives constitute one class with respect to whether or not they carry the feature [person], i.e. they are members of the same morphological paradigm. Accordingly, when a child is confronted with the task of deciding whether there is evidence for assuming a syntacticallyrelevant feature on verbs in its language, it must make the same conclusion for finite verbs and infinitives alike. Since, on an overall account, there is "massive" subject/verb agreement in Icelandic the infinitives will carry the feature [person] just like the finite verbs, but in Mainland Scandinavian, where there is no subject/verb agreement, none of them will.

In an Icelandic control infinitival the infinitive will thus raise to $AgrS^0$ since it is the preferred identifier of σ just like the finite verb in a finite clause. In Mainland Scandinavian on the other hand, the infinitive will not raise—instead σ is identified by PRO.

The problem raised by Thráinsson (1993) now finds a solution in a theory which assumes the absence of TP but the presence of AgrSP in control infinitivals,[48] and which does not make reference to 'checking' of morphological features.

Several issues pertaining to Scandinavian infinitivals must be rethought given the analysis just outlined (cf. Thráinsson op.cit. for an overview), and needless to say, in order to fully judge whether the present approach is on the right track we must consider a variety of issues pertaining to sentence structure in general. (For some considerations concerning the proper formulation of the Extended Projection Principle and Case assignment, see Vangsnes 1999a.) The general point as to the architecture of infinitval control complements should be clear, however.

8. RESIDUAL ISSUES AND SOME FURTHER SPECULATIONS

In the introduction we noted the existence of (American) English and Icelandic noun phrases where the order of constituents did not follow the general pattern on which we have developed the present theory. The relevant examples are repeated here.

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[48] From other languages we also have overt morphological evidence for the presence of AgrSP in infinitivals: in European Portugese we find overt subject-verb agreement on infinitives in certain constructions, cf. Raposo (1987).

Furthermore, the non-presence of TP in infinitival clauses fits well with the two standard assumptions that (i) subjective Case assignment is related to tense and (ii) that PRO cannot be assigned Case.

(9) a. all three of the linguists *(American) English*
b. *all three the linguists

(10) a. allir málvísindamennirnir flrír *Icelandic*
all linguists-DEF three
b. allir flrír málvísindamennirnir
all three linguists-DEF
Both: ‘all the three linguists’

In (9a) the cardinal determiner precedes the definite article, and in (10a) the noun precedes the cardinal determiner, and hence these orderings do not conform to the general pattern: ∀ *D – definite D – weak D – N*.

However, that does not necessarily mean that there is no underlying general pattern. An important point regarding the (American) English example is that the presence of the ‘partitive’ preposition *of* is required. That could indicate that we are dealing with another construction, i.e. another kind of noun phrase than we have been discussing, perhaps a ‘partitive construction’ where the *of* is a preposition taking a noun phrase complement, and where (9a) then would be comparable with noun phrases like the ones in (145).

(145) a. many of the linguists
b. some of the linguists
c. three of the linguists

On the other hand, it might be that both (9a) and the noun phrases in (145) actually have the same phrase structure as other noun phrases we have been discussing in this paper, more specifically where *of* is merged in K^0, adjoined to k, and where the weak determiners have raised from Num^0 and adjoined to *of*. The structure for (145a) would then roughly be as in (146).

(146) $[_{KP}\ [_{K^0}\ \mathbf{many_i}–\mathbf{of}–\kappa\ [_{DP}\ [_{D^0}\ \mathbf{t_i}–\mathbf{the}–\delta\ [_{NumP}\ [_{Num^0}\ \mathbf{t_i}–\nu\ [_{NP}\ \mathbf{linguists}]]]]]]]$

There are certain attractive sides to such a line of reasoning. KP is by hypothesis associated with Case, and *of* being a preposition (the least marked one in English) surely could be regarded as a partitive Case marker, i.e. yielding a subset interpretation, not to be confused with morphological partitive case in Finnish. Moreover, the affinity between this partitive preposition and the partitive article in French, which is an identifier of κ and which is etymologically speaking derived from the French equivalent of *of* (i.e. *de*) is highly suggestive.

The reason why the cardinal determiner would raise in this construction could possibly for reasons of scope—it must take scope over the whole of the KP in order to quantify over the denoted set.

Another phenomenon which involves the preposition *of* in English was noted in section 2.5 in connection with the discussion of the distinction between mass and count nouns. As we remember some nouns that typically denote masses, e.g. *beer*, may be used with a simple determiner, e.g. the indefinite article, to form a noun phrase which denotes an individualized entity, hence *a beer*. With other mass nouns this is difficult, and a more complex expression is then needed in order to yield a countable noun phrase. The relevant examples is repeated here.

(53) a. I want (?*a) water.
b. I want (a glass of) water.

This case may seem unrelated to the ones in (9a) and (145), but under the present theory that need not be so. In (53b) there are two functional categories that must be identified, κ and ν, and a not altogether implausible analysis seems to be that the preposition serves as the identifier of κ, whereas the "individualizing element", *a glass*, is a phrasal category merged in Spec-NumP where it serves as the identifier of ν, and that it subsequently raises to Spec-KP to take scope over the entity that it quantifies over. In other words it would have roughly the structure in (147).

(147) $[_{KP}$ **a glass$_i$** $[_{K0}$ **of**–κ $[_{NumP}$ **t$_i$** $[_{Num0}$ ν $[_{NP}$ **water**]]]]]

We must leave it for future research to work out the details of an analyses along these lines, but there are clearly reasons to believe that the theory advocated here opens up for interesting perspectives.

Coming now to the Icelandic example in (10a) it is quite clear that the construction involves noun phrase internal movement of an XP which contains the noun and the suffixed defintie article. The matter is more fully discussed in Vangsnes (1999a) where it is shown that adjectives and possessives "move along" with the noun. Consider the examples in (148)—the example in (148b) is based on an example (without the possessive) given in Sigur›sson (1993:194).

(148) a. hinar **flrjár** frægu bækur *mínar* *Icelandic*
the three famous books my
b. frægu bækurnar *mínar* **flrjár**
famous books-DEF my three
c. *frægu bækurnar **flrjár** *mínar*
famous books-DEF three my
d. *bækurnar **flrjár** frægu *mínar*
books-DEF three famous my
e. flessar **flrjár** frægu bækur *mínar*
these three famous books my

These examples clearly show that the phenomenon involves phrasal movement, and moreover that the movement is obligatory in definites containing no lexical definite determiner. In the latter respect it should however be noted that the examples in (10) show that the movement is optional in noun phrases containing a universally quantifying determiner but no lexical definite determiner.

It would lead too far here to consider the phenomenon in detail, but as argued in Vangsnes (1999b) the XP-movement witnessed in Icelandic definites containing a numeral can be taken to represent a strategy whereby the identification of δ is met by phrasal movement to Spec-DP of a suitable identifier in cases where the numeral blocks head movement of the identifier. The obligatoriness of the movement in definite noun phrases with no universally quantifier and no lexical definite determiner suggests that this is the case, and moreover its optionality when there is a universal quantifier suggests that the quantifier may meet the identification requirement on δ, say by being merged in D^0 and subsequenbtly moved to K^0—the numeral will not block this instance of head movement.[49]

9. CONCLUSION

The present paper has advocated a theory of noun phrase structure in which referential properties are taken to be directly reflected in the phrase structure in the form of abstract functional categories implying the referential properties. We have discerned three such referential properties, and thus limited the inventory of noun phrase internal functional categories to three, albeit one of these (κ) exists in two varieties so as to allow us to preserve various formal syntactic requirements pertaining to the relation between noun phrases and other constituents (in e.g. the clause).

We have furthermore postulated a formal licensing requirement on the abstract functional categories, namely that they must be 'identified' by an element which carries relevant features, and the investigation of a variety of phenomena has given us an important understanding of the principles that govern the construction of noun phrases in particular and, presumably, phrasal objects in general. Although many interesting problems still lay ahead, we may conclude that the overall goal of the paper has been reached—the goal was to show that we can model referential properties of noun phrases in a manner which at the same time reflects their internal syntactic structure, and that such a theory of noun phrases would provide us with valuable insights.

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[49] Þorsteinn Indriðason (p.c.) informs me that in universally quantifying noun phrases (with no lexical definite determiner) the "heaviness" of the moved XP plays a certain role—movement seems to be dispreferred if the XP contains an adjective, but preferred if it does not, hence as exemplified in (i).

(i) a. allir þrír ?(frægu) málvísindamennirnir *Icelandic*
all three famous linguists-DEF
b. allir (?frægu) málvísindamennirnir þrír
all famous linguists-DEF three

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