Albert Oosterhof
Ghent University
Belgium

Generic noun phrases in Dutch[1]

The aim of this paper is to explain the syntax and semantics of kind-referring noun phrases in standard Dutch and some related language systems (Flemish dialects, English, German and French). This paper explores Longobardi's (2003) assumption that referential interpretations of noun phrases are possible if and only if N raises to D (at LF or in overt syntax) or if the noun phrase is introduced by an expletive article. We observe that in Flemish dialects of Dutch kind-referring noun phrases cannot be generated by inserting an expletive article. Attention will be paid to the conditions that have to be met for N-to-D raising to take place in the languages under consideration. We assume that raising is possible only if it is a last resort for convergence, i.e. in order to fulfil a lexical government requirement, which is evaluated in overt syntax in French but at LF in Dutch, German, English and Flemish. So, if a noun phrase without determiner appears in preverbal subject position, N must raise to D in order to avoid the presence of an empty head that is not lexically governed. A consequence of this is that common nouns in subject position are expected to be kind-referring expressions. This prediction turns out to be correct for Dutch. The object position is not a lexically governed position. This means that D can stay empty. We argue that the nouns which can be selected by empty determiners and the interpretation of these empty determiners, largely depend on language-particular constraints. We conclude that French empty determiners cannot be interpreted at all. If we make the additional assumption that common nouns must head the N-projections at S-structure, we predict that French bare nouns are unacceptable, which turns out to be correct.

1. INTRODUCTION. English, French and German are probably the best-studied languages with regard to the syntax and semantics of generic noun phrases and sentences (cf. Carlson & Pelletier 1995, inter alia). This paper pays attention to the syntax and semantics of generic noun phrases in another language: Dutch. A comparison will be made with French, English and German. Occasionally, reference will be made to data from Italian as well.

A first observation that can be made with regard to the Dutch language is that the variation between varieties of Dutch is at least as impressive as the differences between Dutch, French, English and German. For example, in Belgian (or Flemish) dialects of Dutch only bare common nouns are acceptable in kind-referring contexts, while standard Dutch kind-referring noun phrases can be introduced by a definite article. This paper tries to deal with this language-internal variation, by exploring the possibilities of the DP-hypothesis (cf. Abney 1987), and some recent elaborations of this hypothesis (Longobardi's 1994, 2003 and Chierchia 1998).

In the next section the relevant data will be presented. Section 3 comprises the discussion of some crucial aspects of the analysis, while the actual analysis of the data is presented in section 4. In the final section, some of the conclusions will be discussed.

2. SYNTAX AND SEMANTICS OF GENERIC NOUN PHRASES: THE DATA. In the presentation of the data difference will be made between two subkinds of generic sentences: PERSONAL GENERICS and SIMPLE GENERICS. I will make clear which types of noun phrases can be used in these sentences in Dutch with subsequent comparison of the Dutch data with English, German and

French material. Attention will also be drawn to differences between standard Dutch and Flemish dialects. Many of the data that will be presented in this section were also discussed in earlier work and were gathered on the basis of corpus- and questionnaire-based studies (see Oosterhof 2004, Oosterhof & Rys 2004 and Oosterhof to appear, for further information).

2.1. PERSONAL GENERICS. The (standard) Dutch determiner system is in many respects similar to that in German. Dutch definite singular, indefinite singular, bare plural and definite plural count noun phrases can be used in personal generic contexts (cf. 1 and 2), just like German (cf. 3) (Torsten Leuschner p.c.):

(1) a. De Zwitser eet graag chocolade.
The Swiss eats ADV chocolate.
'The Swiss likes to eat chocolate.'
b. Een Zwitser eet graag chocolade.
A Swiss eats ADV chocolate.
c. Zwitsers eten graag chocolade.
Swiss eat ADV chocolate.
d. De Zwitsers eten graag chocolade.
The Swiss eat ADV chocolate.

(2) a. De spreeuw voedt zich met insecten en vruchten.
The starling feeds REFL on insects and fruit.
b. Een spreeuw voedt zich met insecten en vruchten.
A starling feeds REFL on insects and fruit.
c. Spreeuwen voeden zich met insecten en vruchten.
Starlings feed REFL on insects and fruit.
d. De spreeuwen voeden zich met insecten en vruchten.
The starlings feeds REFL on insects and fruit.

(3) a. Der Star ernährt sich von Insekten und Früchten.
b. Ein Star ernährt sich von Insekten und Früchten
c. Stare ernähren sich von Insekten und Früchten.
d. Die Stare ernähren sich von Insekten und Früchten.

So, Dutch and German behave differently from English with respect to definite plurals, as they cannot be interpreted generically in English (cf. for example Ter Meulen 1995):

(4) a. The starling feeds on insects and fruit.
b. A starling feeds on insects and fruit.
c. Starlings feed on insects and fruit.
d. # The starlings feed on insects and fruit.[2]

Apart from this, there seem to be no differences between English, German and Dutch with regard to count noun subjects in personal generics.

In French, bare plurals are impossible in personal generics (cf. for example Devos, De Muynck & Van Herreweghe 1991 : 43). The same holds for plural nouns introduced by a partitive article, as in *des lions* (Bart Defrancq p.c.):

(5) a. Le lion sait grimper aux arbres.
The lion can climb into trees.
b Un lion sait grimper aux arbres.
A lion can climb into trees
c. (*Des) *lions savent grimper aux arbres.
(Of-the) lions can climb into trees
d. Les lions savent grimper aux arbres.
The lions can climb into trees.

I now move on to the discussion of the behaviour of mass noun phrases. In Dutch, only bare singular mass terms can be used in personal generic contexts. This is illustrated in 6b and 7b.

(6) a. # De melk is ongezond voor katten.
The milk is unhealthy for cats.
b. Melk is ongezond voor katten.
Milk is unhealthy for cats.
(7) a. # Het kwik is vloeibaar bij kamertemperatuur.
The mercury is liquid at room temperature.
b. Kwik is vloeibaar bij kamertemperatuur.
Mercury is liquid at room temperature.

The same holds for English (Devos, De Muynck & Van Herreweghe 1991 : 31-32, Peter Flynn p.c.):

(8) (#The) milk is unhealthy for cats.

Here, English and standard Dutch diverge from German. In many varieties of German, it is possible to use mass nouns with a definite article in generic contexts in colloquial contexts (cf. Longobardi 1994: 653 and Krifka 2001). This point is illustrated in 9.

(9) (Die) Milch ist weiss.
(The) milk is white.
'Milk is white'

In French, a personal generic reading is possible only if a definite article is inserted:

(10) a * (*Du) lait est blanc.
(Of-the) milk is white.
b. Le lait est blanc.
The milk is white.

In sentences 1-10, a predicate is used which refers to a property of instances of a particular kind. In the literature sentences like these have been called PERSONAL GENERICS (cf. Cohen 1999). The generic interpretation of such sentences seems to be the result of an invisible adverbial operator underlying sentences as a whole (cf. for example Krifka et al. 1995).

2.2. SIMPLE GENERICS. Reference to kinds is a phenomenon that is encoded in the nominal system. We can verify which noun phrases can be interpreted in this way by attributing so-called KIND PREDICATES to them. Kind predicates can be defined as predicates which necessarily refer to properties of kinds. Dutch examples are given in 11 and 12. Cohen (1999) refers to such sentences as SIMPLE GENERICS.

(11) a. De tijger wordt met uitsterven bedreigd.
The tiger is with extinction threatened.
b. #Een tijger wordt met uitsterven bedreigd.
A tiger is with extinction threatened.
c. Tijgers worden met uitsterven bedreigd.[3]
Tigers are with extinction threatened.
d. De tijgers worden met uitsterven bedreigd.
The tigers are with extinction threatened.
'Tigers are threatened with extinction.'

(12) a. De Neanderthaler is uitgestorven.
The Neanderthal is extinct.
b. #Een Neanderthaler is uitgestorven.
A Neanderthal is extinct.
c. Neanderthalers zijn uitgestorven.
Neanderthals are extinct.
d. De Neanderthalers zijn uitgestorven.
The Neanderthals are extinct.
'Neanderthals are extinct.'

So, indefinite singulars cannot be used as kind-referring terms. This holds for the Germanic and Romance languages in general. German and English examples are given in 13 and 14.

(13) # Ein dodo ist ausgestorben.
(14) # A dodo is extinct.

In French (as well as in other Romance languages), there is a syntactic requirement that every noun needs a definite article in order to refer to a kind (cf. Krifka et al. 1995: 68):

(15) a. Le dodo est éteint.
The dodo is extinct.
b * (*Des) Dodos sont éteints.
(Of-the) Dodos are extinct-PL.
c. Les dodos sont éteints.
The dodos are extinct- PL.
'Dodo's are extinct.'

I now move on to the discussion of the behaviour of mass terms. For Dutch mass nouns there is only one possibility, as was the case in personal generics:

(16) a # Het staal werd uitgevonden door Henry Bessemer.
The steal was invented by Henry Bessemer.
b. Staal werd uitgevonden door Henry Bessemer.
Steal was invented by Henry Bessemer.

(17) a. De kwark is een soort kaas.
The curd is a kind cheese.
b. Kwark is een soort kaas.
Curd is a kind cheese.
'Curd is a kind of cheese'

The same holds for English:

(18) (#The) steal was invented by Henry Bessemer.

In many varieties of German, it is possible to use mass nouns with a definite article in simple generics as well (cf. Krifka 2001):

(19) (Die) Bronze wurde bereits 3000 v. Chr. erfunden.
(The) Bronze was already 3000 B.C. invented
'Bronze was invented already 3000 B.C.'

French basically disallows bare nominals in argument position (cf. section 2.3). Mass terms in their turn need to be introduced by a definite article:

(20) * (Le) Camembert est une espèce de fromage.
(The) Camembert is a kind of cheese.

2.3. LEXICALLY GOVERNED VS. UNGOVERNED POSITIONS. As is well-known from the literature, French disallows bare arguments (cf. Chierchia 1998: 355, inter alia):

(21) * J'ai mangé biscuits dans mon lait.
'I ate cookies with my milk'

Other Romance languages, like Italian, do allow bare arguments. Romance bare arguments always get indefinite interpretations.

Chierchia (1998: 355-356) assumes that Romance bare arguments are introduced by an empty determiner and that "phonologically null structure needs (...) to be flagged" In line with Chierchia (1998) we assume that Romance bare nouns are subject to licensing conditions. A familiar way to license null structure is a position close to a suitable head (cf. Rizzi 1990). Chierchia (1998), and Longobardi (1994), among others, assume that Romance bare arguments are allowed only in positions governed by a lexical head.

Thus we can explain that Italian 22a is ungrammatical, while 22b is acceptable: in object position the null determiner will be licensed by the verbal head, but in (preverbal; cf. Longobardi 1994) subject position there is no suitable head that can act as a licenser (cf. Chierchia 1998: 356).

(22) a. * Bambini sono venutti da noi.
'Kids came by us'
b. Ho preso biscotti con il mio latte.
'(I) had cookies with my milk.'

It is interesting to verify whether syntactic or semantic subject-object assymetrical patterns can be found in Dutch. In 23 examples are given of Dutch noun phrases in object position. In 23a, 23c and 23d the object noun phrases can be interpreted generically. *De egels* in sentence 23d can only get a definite interpretation.

(23) a. Onze tuinman haat de egel.
Our gardener hates the hedgehog.
b. # Onze tuinman haat een egel.
Our gardener hates a hedgehog.
c. Onze tuinman haat egels.
Our gardener hates hedgehogs.
d. Onze tuinman haat de egels.
Our gardener hates the hedgehogs.

German (cf. 25) and English (cf. 24) pattern with Dutch (apart from the fact that English definite plurals are unacceptable in generic contexts):

(24) a. Our gardener loves the hedgehog.
b. # Our gardener loves a hedgehog.
c. Our gardener loves hedgehogs.
d. # Our gardener loves the hedgehogs.
(25) a. Unser Gärtner liebt den Igel.
b. # Unser Gärtner liebt einen Igel.
c. Unser Gärtner liebt Igel.
d. Unser Gärtner liebt die Igel.

At this point, it should be clear that the determinerless forms are unacceptable in French:

(26)	a.	Notre	jardinier	déteste	le	porc-épic.
		Our	gardener	hates	the	hegdehog.
	b.	# Notre	jardinier	déteste	un	porc-épic.
		Our	gardener	hates	a	hedgehog.
	c.	* Notre	jardinier	déteste	(??des)	porcs-épics.
		Our	gardener	hates	(of-the)	hedgehogs.
	d.	Notre	jardinier	déteste	les	porcs-épics.
		Our	gardener	hates	the	hedgehogs.

The sentences in 23-26 are examples of personal generics. In 27-31 examples are given of kind-selecting predicates: only kinds can be invented or wiped out. Interestingly, only noun phrases that are introduced by a definite article can be used in object position of these sentences. This is illustrated for Dutch in 27 and 28, for German in 29 and for English in 30.

(27) a. Edison vond de gloeilamp uit.
Edison found the light bulb out.
'Edison invented the bulb'
b. # Edison vond een gloeilamp uit.
Edison found a light bulb out.
c. # Edison vond gloeilampen uit.
Edison found light bulbs out.
d. ? Edison vond de gloeilampen uit.
Edison found the light bulbs out.
'Edison invented the light bulb'

(28) a. De Hollanders roeiden de dodo uit.
The Dutchmen wiped the dodo out.
b. # De Hollanders roeiden een dodo uit.
The Dutchmen wiped a dodo out.
c. # De Hollanders roeiden dodos uit.
The Dutchmen wiped dodos out.
d. De Hollanders roeiden de dodo's uit.
The Dutchmen wiped the dodos out.
'The Dutchmen wiped out the dodo.'

(29) a. Die Holländer haben den Dodo ausgerottet.
The Dutchmen have the dodo exterminated.
b. # Die Holländer haben einen Dodo ausgerottet.
The Dutchmen have a dodo exterminated.
c. # Die Holländer haben Dodo's ausgerottet.
The Dutchmen have dodo's exterminated.
d. Die Holländer haben die Dodos ausgerottet.
The Dutchmen have the dodo's exterminated.

(30) a. The Dutchmen exterminated the dodo.
b. # The Dutchmen exterminated a dodo.
c. # The Dutchmen exterminated dodos.
d. The Dutchmen exterminated the dodos.

The example in 30d seems to be a counterexample against the claim that English definite plurals are not allowed to be interpreted generically. There could be some interspeaker variation here. According to Zamparelli (1995: 31), sentence 30d is ill-formed, while 30c is acceptable. The judgements given in 30, however, are based on the intuitions of a native speaker (Peter Flynn p.c.).

French examples are given in 31:

(31) a. Edison a inventé l'ampoule électrique.
Edison has invented the lightbulb electric.
b. # Edison a inventé une ampoule électrique.
Edison has invented a lightbulb electric.
c. # Edison a inventé (des) ampoules électriques.
Edison has invented (of-the) lightbulbs electric-PL
d. Edison a inventé les ampoules électriques.
Edison has invented the lightbulbs electric.

2.4. BELGIAN VS. NETHERLANDIC DUTCH. In personal generic contexts, the forms with a definite article are unacceptable in many dialects of the Dutch-speaking part of Belgium (and in the south of the Netherlands). According to speakers of Flemish, sentences 32a and 32d are unacceptable in Flemish (Liliane Haegeman p.c.).[4]

(32) (Flemish)
a. # De spreeuw eet insecten en vruchten.[5]
The starling eats insects and fruit.
b. Een spreeuw eet insecten en vruchten.
A starling eats insects and fruit.
c. Spreeuwen eten insecten en vruchten.
Starlings eat insects and fruit.
d. # De spreeuwen eten insecten en vruchten.
The starlings eat insects and fruits.

In subject position of kind predicates like *voorkomen* ('occur'/'be found') the definite singular is not the most natural form, but according to some of my informants 33a is better than 32a.[6] Liliane Haegeman (p.c.) judges sentence 33a to be acceptable.

(33) (Flemish)
a. ? De egel komt hier veel voor.
The hedgehog comes here much for.
'The hedgehog occurs in great numbers here.'
b. # Een egel komt hier veel voor.
A hedgehog comes here much for.
c. Egels komen hier veel voor.
Hedgehogs come here much for.
d. # De egels komen hier veel voor.
The hedgehogs come here much for.

In object position of kind predicates like *uitvinden* ('invent') Flemish patterns with standard Dutch 27: in this position the definite singular is fully well-formed:

(34) (Flemish)

a.	Edison	heeft	de	gloeilamp	uitgevonden.
	Edison	has	the	lightbulb	invented.
b.	# Edison	heeft	een	gloeilamp	uitgevonden.
	Edison	has	a	lightbulb	invented.
c.	# Edison	heeft	gloeilampen		uitgevonden.
	Edison	has	lightbulbs		invented.
d.	? Edison	heeft	de	gloeilampen	uitgevonden.
	Edison	has	the	lightbulbs	invented.

In object position of personal generics, only bare plurals can take a generic reading:

(35) (Flemish)

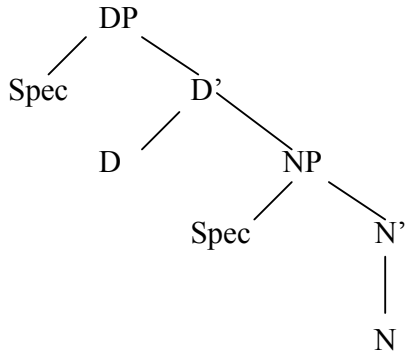
a.	# Onze	tuinman	ziet	de	egel	graag	/	graag	de egel.
	Our	gardener	sees	the	hedgehog	ADV	/	ADV	the hedgehog.
b.	# Onze	tuinman	ziet	een	egel	graag	/	graag	een egel.
	Our	gardener	sees	a	hedgehog	ADV	/	ADV	a hedgehog.
c.	Onze	tuinman	ziet	* egels		graag	/	graag	egels.
	Our	gardener	sees	hedgehogs		hADV	/	ADV	hedgehogs.
	'Our gardener loves hedgehogs.'								
d.	# Onze	tuinman	ziet	de	egels	graag	/	graag	de egels. .
	Our	gardener	sees	the	hedgehogs	ADV	/	ADV	the hedgehogs.

2.5. CONCLUSION. In this section, attention has been concentrated on the form of noun phrases in generic contexts and the differences between English, French, German, Dutch and Flemish. The rest of this paper focuses on explaining these observations. Section 3 discusses some crucial aspects of Longobardi's (1994, 2003) approach. Section 4 applies Longobardi's proposals to our data.

3. KEYSTONES OF OUR ANALYSIS. Many of the data discussed above can be explained in the framework of Longobardi (1994, 2003). In this section I will discuss some crucial aspects of Longobardi's (1994, 2003) approach. These aspects will play a crucial role in section 4.

3.1. THE STRUCTURE OF NOUN PHRASES. Longobardi (1994) assumes that a functional projection, Determiner Phrase (DP), is the maximal category projected by the class of determiner elements (cf. Abney 1987). This category DP heads the noun phrase (NP) (cf. 36).

(36)



For an in-depth discussion of arguments in favour of this hypothesis, I refer to Bernstein 2001. One merit of this hypothesis is that it explains word order patterns in proper noun phrases in the Romance languages. Consider the following Italian paradigm (cf. Longobardi 1994: 623):

(37) a. Il mio Gianni ha finalmente telefonato.
the my Gianni has finally called.
b. * Mio Gianni ha finalmente telefonato.
My Gianni has finally called.
c. Gianni mio ha finalmente telefonato.
Gianni my has finally called.
d. Il Gianni mio ha finalmente telefonato.
the Gianni my has finally called.

When the proper name is introduced by the definite article, two word order possibilities are acceptable: AN as in 37a and NA as in 37d. An unexpected gap appears with names that have no article: although many varieties of Italian accept 37c, none accepts the order in 37b. One can come to understand this rather surprising fact if it is assumed that the structure in 36 corresponds to the subject noun phrases in 37 and that the D position is basically empty in 37c. If these assumptions are made, one can claim that the proper name needs to move from the N position in order to fill in this otherwise empty D position. In this way, it crosses over the adjective presumably lying in the specifier position of NP.

For this explanation to be viable, Italian adjectives should to be able to occur in prenominal or in postnominal position, but never before D. This turns out to be correct:

(38) * mio il Gianni.
my the Gianni.

Now we can claim that the sentences 37b and 38 are ill-formed for the same reason: Italian adjectives may never occur before D.

Notice that the D position c-commands the N position in the structure in 36. This is important, as any current theoretical approach bans movement to a non c-commanding position.

3.2. REFERENCE IF AND ONLY IF N-TO-D. In section 3.1 some evidence was presented suggesting that proper names need to move from the N position in order to fill in an otherwise empty D position. The next question we might ask is: why do proper names raise to D? It is unclear why the D position is not allowed to stay empty.

According to Longobardi (1994) this is because D is the locus of referentiality. The following implications seem to hold:

(39) a. Object reference if N-to-D
b. N-to-D if object reference.

It is a widely held view that kind-referring noun phrases are "referential" as well. Since Carlson (1977) KINDS and OBJECTS have been treated as separate entities in the ontology. Referential expressions can refer to both types of entities. This suggests that both types of noun phrases can be considered as names, be it for kinds or for objects, and thus should be treated semantically

alike. If we want to claim that D is the locus of referentiality, it seems coherent to replace the original generalization in 39 by 40. Longobardi (2003: 16) comes to the same conclusion.

(40) a. Reference if N-to-D.
b. N-to-D if reference.

3.3. CHAINS AND CHAINS. The generalization in 40 confronts us with two problems. Firstly, languages that allow bare kind-referring nouns do not seem to raise them to D. The following Dutch examples illustrate this point:

(41) a. Echte communisten zijn uitgestorven.
Real communists are extinct.
b. * Communisten echt(e) zijn uitgestorven.
Communists real(-PL) are extinct.

A second problem relates to strategies that generate kind-referring noun phrases. In most languages under consideration the normal strategy for generating kind-referring noun phrases is to insert a definite article (cf. section 2). Moreover, in many languages, object-referring noun phrases (proper names) can be introduced by a definite article as well. Examples can be found in some (Flemish) varieties of Dutch:

(42) Non-standard Dutch
De Frank is nog altijd niet gekomen.
The Frank has still not come.

Let us first try to deal with the second problem. The insertion of a definite article and N-to-D raising seem to be two different ways of achieving the same goal. Longobardi (1994) assumes that the link between D and N established through a chain created by N-to-D raising in some cases (i.e. in Italian proper names) must then hold in other cases by means of a relationship between the head noun and the overt article. Longobardi proposes that the two relevant positions are related by a CHAIN and that the overt definite article heading generic DPs is an EXPLETIVE one.

The abstract notion CHAIN was introduced by Chomsky (1986: 132). It was put forward in order to account for the similarity in behaviour between the linked elements of an expletive-argument pair and a chain created by raising. Both types of syntactic relations (chains and CHAINS) have the same implications for semantic interpretation.

The first problem mentioned in this section still needs to be accounted for. How do we analyse cases like 41a? In his exploration of derivational processes of Generative Grammar Longobardi (1994: 649) assumes that in English, N-to-D raising takes place at the covert level of Logical Form (LF): English kind-referring bare plurals create a chain between D and N at LF.

Thus, the generalization in 40 can be restated as follows:

(43) A DP directly refers to an entity iff a chain/CHAIN is created between D and N.

3.4. COMMON NOUNS IN N^0 AT S-STRUCTURE. In the previous section we claimed that N-to-D raising in cases like (41) takes place LF. The next question we might ask is: why is it in cases like 41 necessary to delay N-to-D raising? Longobardi (1994) makes the following assumption:

(44) In order to refer to a kind, a noun must head the N-projections at S-structure.

This formulation needs some clarification. Longobardi (1994) seems to make no difference between common nouns that refer to kinds and common nouns that do not. Common nouns are always understood as kind-referring. As a consequence, even *een spreeuw* in 2b, repeated 45a, indirectly refers to a kind. This is in contradiction with the widely held assumption that the noun phrase in 45 does not refer to a kind, but introduces a variable. The most important argument supportin the view that *een spreeuw* does not refer to a kind resides in the fact that indefinite singulars are incompatible with kind-selecting predicates like *be extinct*. According to recent formal literature on genericity, the generic interpretation of 45 is the result of an invisible generic operator, which binds the variable that is introduced by *een spreeuw*.

(45) Een spreeuw voedt zich met insecten en vruchten.

So, 44 amounts to the following:

(46) Common nouns must head the N-projections in overt syntax.

Although 46 does not have any additional explanatory power it is nonetheless an improvement on the assumption in 44, which causes conceptual problems. Firstly, this approach does not make clear whether it is possible to have common nouns which (a) head the N-projections in overt syntax and (b) do not refer to kinds (cf. 45). Secondly, if kind-referential readings are a result of N-to-D raising, it is difficult to understand why a noun must head the N-projections at S-structure in order to refer to a kind. Longobardi (1994) does not give any further arguments for the assumption in 44.

3.5. EMPTY DETERMINERS. As discussed in 2.3, Italian bare noun phrases only occur in lexically governed argument positions. In these cases, the interpretation of the nominal seems to be roughly similar to that of an indefinite, existentially quantified NP. This suggests that an empty D head in need of some kind of lexical government is necessarily present in these bare noun phrases. Longobardi (1994: 617-618) proposes that the empty D instantiates some sort of existential operator. It is more correct, however, to assume that empty determiners receive an indefinite interpretation, in the sense of Diesing (1992) (cf. Longobardi 2003, who draws a comparable conclusion). Diesing (1992) assumes that indefinites are in fact variable-introducing expressions (cf. 3.3). The variables they introduce can be bound by operators which are available in the context. They can, for example, be bound by adverbial elements, such as *soms* (‘sometimes’) or *vaak* (‘often’):

(47) Ik kom daar vaak idioten tegen.
I come there often idiots across.
‘I often meet idiots there’

In fact, this means that generically interpreted bare plurals are ambiguous between a kind-referring reading and a generic reading which is caused by sentential genericity. In Oosterhof (2004a and b) I give a handful of independent arguments for this conclusion. One of the most important arguments is that according to many speakers of Dutch bare plurals are ill-formed under kind-referring reading. There is no consensus among linguists. Devos, De Muynck & Van

Herreweghe (1991:43) and Ter Meulen (1995:356) judge sentences like 48a to be well-formed, while Haeseryn et al. (1997:812) and Broekhuis, Keizer en Den Dikken (2003:609) judge them ungrammatical (cf. note 2). Interestingly enough, 48b is acceptable beyond doubt. This can only be explained if we assume that bare plurals are in fact ambiguous between kind-referring and personal generic readings. If this is not the fact, we expect that language users who judge 48a to be impossible, will immediately judge 48b to be ill-formed as well.

(48) a. Olifanten sterven uit.
Elephants die out.
'Elephants are dying out.'
b. Olifanten hebben een slurf.
Elephants have a trunk.
'Elephants have trunks.'

So, it can be tentatively concluded that the following statements are accurate:

(49) a. Empty determiners are subject to a lexical government requirement (like other empty heads).
b. They receive an indefinite interpretation (cf. Diesing 1992).

4. ANALYSING THE DATA. In the previous section the following principles and assumptions were discussed:

(50) a. A DP directly refers to an entity iff a chain/CHAIN is created between D and N.
b. Common nouns must head the N-projections at S-structure.
c. Empty determiners:
- are subject to a lexical government requirement.
- receive an indefinite interpretation.

My analysis of the data will be guided by these principles and assumptions. Some of these 'rules' will be revised.

4.1. KIND REFERENCE IN SUBJECT AND OBJECT POSITION. I take the contrast between 11a,c and 27a,c, repeated in 51 and 52 as a starting point.

(51) a. De tijger wordt met uitsterven bedreigd.
b. Tijgers worden met uitsterven bedreigd.
(52) a. Edison vond de gloeilamp uit.
b. # Edison vond gloeilampen uit.

Sentence 52b is not marked with an asterisk, because this sentence can get a marginal non-generic interpretation, which corresponds to the following paraphrase: Edison invented some (types of) light bulbs. Syntactically, there seems to be nothing wrong with 52b but the resulting interpretation is semantically odd and conflicts with our knowledge of the world.

In the generative literature, it is assumed that the (preverbal) subject position in which the kind-referring noun phrase appears in 51 is not governed by a lexical head, while the internal argument position in 52 is a lexically governed position (cf. for example Longobardi 1994: 616).

Consequently, the situation illustrated in 51 and 52 is at first sight unexpected. If we assume that bare nouns contain an empty determiner we do not expect them to be acceptable in a position which is not lexically governed and unacceptable in a lexically governed environment.

It is possible, however, to explain the difference between 51 and 52. If a noun phrase appears in internal argument position, the head D is allowed to stay empty, because this position is lexically governed. This, however, means that the noun phrase receives an indefinite interpretation, in the sense of Diesing (cf. 50c). This explains why 23c, repeated as 53 is acceptable. The bare plural *egels* introduces a variable which can be bound by a generic operator (or by a default existential operator, cf. Diesing 1992).

(53) Onze tuinman haat egels.

This way of reasoning can also be applied to sentence 52b, but it seems to be incompatible with the kind-selecting predicate. This analysis explains the fact that 52b can in principle get an indefinite interpretation: Edison invented some (types of) light bulbs.

Although we now understand that an indefinite interpretation of 52b is problematic, we still have to explain why N-to-D raising cannot be a way out. In order to do so, an economy constraint is needed, as presented in the following principle (cf. Longobardi 2003: 26):

(54) Move only if it is a Last Resort for convergence (i.e. to obtain a grammatical output)

In sentences like 52b a grammatical output can be obtained without N-to-D raising at LF. So, as a consequence 54 forbids N-to-D raising.

This analysis has implications for our view on the architecture of the language faculty. We have to assume that syntax and semantics function independently from each other, because an output which we assume to be "a grammatical output" can be semantically ill-formed (or odd) at the same time.

In 52a, a CHAIN is created by the presence of an expletive article. This is not forbidden by the economy principle in 54.

In 51b the noun phrase does not appear in a lexically governed position. This means that D is not allowed to stay empty. In other words: there is a trigger for N-to-D raising. Convergence can only be reached if we raise D at LF. A consequence of this raising is that the noun phrase takes a kind-referring reading as a result of 50a. This interpretation is compatible with the kind-selecting character of the predicate.

4.2. EXISTENTIAL INTERPRETATIONS OF BARE SUBJECTS. If this analysis is correct, we predict that Dutch bare nouns in subject position cannot get an existential reading. A relevant example is given in 55. The use of the construction *zitten te* + infinitive enforces an existential reading. This construction is comparable to the English progressive. The word order of sentence 55 is not so natural. So, our prediction seems to be borne out.

(55) ??Zwitsers zaten aan een tafel een reep chocolade te eten.

Sentence 55 becomes better in pragmatic contexts such as the following:

(56) Het was een vredig tafereeltje in de gelagkamer. Belgen zaten aan een
It was a peaceful scene-DIM in the barroom. Belgians sat at a
trappist te nippen; Fransen aten met veel smaak een stuk Camembert
Trappist to sip; French ate with much taste a piece Camembert
op; Zwitsers zaten een reep chocolade te eten.
up; Swiss sat a bar chocolate to eat.
'It was a peaceful scene. Belgians were sipping Trappists; French were eating a piece of Camembert; Swiss were eating a bar of chocolate.'

In this fragment a special informational pattern is used. Each sentence begins with a constituent corresponding to a nationality name, which indicates the sentence topic. Probably, such readings are only possible if the relevant noun phrase is located in specifier position of a specialized projection (in the literature TopicP is proposed). If this is the case, we can give such bare nouns a treatment that is analogous to Longobardi's (2003: 15) proposal for preverbal Romance bare nouns:

> "(…) they are possible in postverbal subject position, in object position, and preverbally only in focused or left-dislocated functions that can be supposedly be traced back to a postverbal, lexically governed extraction site. Clearly, their status is clearly degraded in normal preverbal subject position."

This explanation cannot be maintained for English. According to the literature, 57 is unmarked (cf. for example Carlson 1977: 2, Longobardi 1994: 645).

(57) Dogs were sitting on my lawn.

Longobardi (1994) proposes an analysis along the lines of Diesing (1992), Kratzer (1995). Diesing and Kratzer have independently argued that in English the subjects of stage-level predicates (i.e. exactly those allowing the existential interpretation found in cases like 53) can be reconstructed into a VP-internal position at LF even though occurring in a VP-external position (which is, in their framework, SpecIP). Diesing (1992: 22) formulates the following principle about the possible syntactic position of bare plural subjects at LF:

(58) Subjects of stage-level predicates can appear either in [Spec,IP] or in [Spec,VP]. Subjects of individual-level predicates can appear only in [Spec,IP]

According to Longobardi (1994: 646) the VP-internal position is likely to satisfy the lexical government conditions for empty categories, probably by virtue of the head V, a lexical governor. This explains that 57 is acceptable.

4.3. EXPLETIVE ARTICLES. This section focuses on the use of expletive articles. Longobardi (1994) treats the distribution of expletive definite articles as a lexical matter. There is considerable variation between the languages under consideration:

Table 1: Expletive definite articles in some languages

Language	sing. count nouns	plur. count nouns	mass nouns	proper names
Flemish	*/ok	*	*	ok/*
English	ok	*	*	*
Standard Dutch	ok	ok	*	*
High German	ok	ok	*	ok
French	ok	ok	ok	*
Non-standard German	ok	ok	ok	ok

Although Flemish kind-referring noun phrases normally cannot be generated by inserting an expletive article, Flemish definite singular count nouns are not ill-formed in two circumstances: if the noun phrase contains a nationality name or with (kind-selecting) predicates like *zeldzaam* or *uitvinden*.

It seems corrects to treat the distribution of expletive articles as a lexical matter. There is considerable variation between closely related languages. So, it is a welcome result that the distribution of expletive articles is not attributed to "a deep interpretive difference" (cf. Longobardi 1994: 629).

Another possibility would be to assume a principle like 59:

(59) Expletive articles are licensed only as a last resort.

As a last resort in this case means "if no synonymous raising derivation is available"(cf. Longobardi 1994: 653). An advantage of such a proposal would be that the ill-formedness of English bare singular count nouns can be connected with the fact that expletive articles in English are only possible with singular count nouns. However, this approach causes more problems than it solves, because in (some varieties of) Dutch and German, proper names (cf. 42) and generic plural nouns (cf. 2c,d and 3c,d) can appear with or without an expletive determiner. The same holds for mass terms in colloquial German (cf. 19).

4.4. EMPTY DETERMINERS. In this section I consider cases where D is base-generated empty. There are two scenarios here. If D is lexically governed this position can stay empty. According to 50c, this leads to an indefinite interpretation. If D is not lexically governed N-to-D raising has to take place. As a consequence, the noun phrase gets a referential reading.

There are three problems with these assumptions. Firstly, in French it is not possible to interpret empty determiners as receiving an indefinite interpretation. The data section has shown that in French arguments without determiners do not exist. Secondly, the possibility of indefinite interpretation of empty determiners in some languages, cannot be extended to bare singular count nouns. Bare singular count nouns are unacceptable in virtually every Germanic or Romance language (cf. Longobardi 1994: 633-634). Thirdly, in the Dutch dialect of the province Groningen bare counts as well as bare mass terms and plurals are acceptable under a definite interpretation (Jack Hoeksema, Siemon Reker p.c.):

(60) a. Mos (*de) maaid moar mied'n.
Must (the) girl PRT avoid.
'You should avoid that/the girl.'
b. Guster heb ik melk dronken
Yesterday have I milk drunk.
'Yesterday, I drank the/some milk.'
c. Ik heb maaiden zain.
I have girls seen.
'I have seen some/the girls.'

Probably, the generalization that empty determiners are subject to a lexical government requirement can be maintained for all languages under consideration. There is, however, interlanguage variation as to which interpretation empty determiners can get and what types of noun phrase they can select. This is shown in table 2.

Table 2: Empty determiners in some languages

Type	languages	selected nouns
indefinite empty determiner	English, Dutch, German, Flemish	mass nouns, bare plurals
definite empty determiner	Groningen dialect	mass nouns, bare plurals, singular count nouns

So the original 50c ignores the fact that some aspects of this machinery correspond to language-particular rules. We have to distinguish between a universal rule (cf. 61) and some language-particular rules (cf. 62).

(61) universal rule:
Empty determiners are subject to a lexical government requirement.
(62) language-particular rules:
a. Empty determiners can take an indefinite interpretation (English, Dutch, German, Flemish).
b. Empty determiners select mass nouns and bare plurals (English, Dutch, German, Flemish).
c. The lexical government requirement must be fulfilled at LF (English, Dutch, German and Flemish).
d. The lexical government requirement must be fulfilled in overt syntax (French).

An additional proposal is that the level at which the lexical government requirement has to be fulfilled is subject to interlanguage variation (cf. 62c and 62d). Why do we have to make this assumption? We can deduce from examples like 5c, repeated as 63 that the lexical government requirement must be fulfilled in overt syntax. If N-to-D-raising at LF were possible in French, we would expect it to be available in cases like 63 as well. As a consequence, we expect a kind-referring reading to be acceptable for *lions*. We can deduce from this that in French N-to-D raising cannot be applied at the level of LF. Our conclusion must be that the lexical government requirement is evaluated in overt syntax. In this way, the ill-formed nature of 63 can be

explained. According to 50b common nouns must head the N-projections in overt syntax. As a result, D has to stay empty, which leads to a violation of 61.

(63) * Lions savent grimper aux arbres.

4.5 CONCLUSIONS AND DISCUSSION. The syntax and semantics of kind-referring noun phrases in Dutch, English, German, Flemish and French can be accounted for on the basis of the following assumptions:

(64) universal rules:
- a. A DP directly refers to an entity iff a chain/CHAIN is created between D and N.
- b Common nouns must head the N-projections in overt syntax.
- e. Move only if it is a Last Resort for convergence (i.e. to obtain a grammatical output)
- f. Empty determiners are subject to a lexical government requirement.

(65) language-particular rules:
- a. Empty determiners can take an indefinite interpretation (English, Dutch, German, Flemish).
- b. Empty determiners select mass nouns and bare plurals (English, Dutch, German, Flemish).
- c. The lexical government requirement must be fulfilled at LF (English, Dutch, German and Flemish).
- d. The lexical government requirement must be fulfilled in overt syntax (French).

There are three suggestions for further research. Firstly the problem as to why generic bare singular count nouns, as is illustrated in 66, are ill-formed is still unresolved. The rules in 65a and 65b do not account for this.

(66) * Spreeuw voedt zich met insecten en vruchten.
Starling feeds REFL on insects and fruit.

According to Longobardi (1994) bare singular count nouns are unacceptable in almost any Germanic or Romance language. Longobardi (1994: 633-634) gives the following explanation for this cross-linguistic observation:

> "the only nouns in argument function that are allowed to appear at LF without any overt determiner are proper names, pronouns, plurals, and singular mass nouns (...) singular count nouns are *always* (my italics, AO) excluded (...) Why should this be so? (...) the empty determiner of the Romance and Germanic languages seems to impose quantification over subparts and exclude quantification over individuals whenever the head noun following it is in the singular. (...) Determiners are semantically understood as operators binding a variable, whose range is always the extension of the natural kind referred to by the head noun: (...) in the singular it is the choice of the determiner that decides whether the range is constituted by members of the extension of the kind (count interpretation) or by parts of its members (mass interpretation)"

The assumption that empty determiners "impose quantification over subparts", amounts to saying that empty determiners can only take mass nouns.

There seems to be a contradiction in this analysis. It is Longobardi's intention to explain the fact that singular count nouns are *always* excluded in argument function: not only under non-kind-referring readings but in kind-referring contexts as well. However, in cases where a purely referential interpretation of the noun phrase is achieved (by forming a chain), determiners are not understood as "operators binding a variable". In this case, it is unclear in what sense the choice of this "empty determiner" decides that the range is constituted by subparts (cf. Chierchia 1998 for an attempt to explain the ill-formedness of bare singular counts from a semantic point of view).

A second problem still unaccounted for is the fact that 23b, repeated as 67 cannot take a personal generic reading.

(67) # Onze tuinman haat een egel.

Noun phrases introduced by indefinite articles behave like indefinites in the sense of Diesing (1992). Evidence for this claim comes from 2b, repeated as 68. The indefinite singular *een spreeuw* can be analysed as an element introducing a variable, which is bound by an invisible generic operator.

(68) Een spreeuw voedt zich met insecten en vruchten.

So, why is it impossible for the variable to be bound by a generic operator in 67? A possible solution is that we conclude that *een egel* in 67 is located in the VP and that VP-internal material must be existentially bound (cf. Diesing 1992).

This solution, however, becomes problematic in the face of sentences like 23c, repeated as 69. This sentence expresses a generalization about hedgehogs: our gardener hates (almost) any hedgehog. We can derive this reading if we assume that the bare plural *egels* introduces a variable, which is bound by an invisible generic operator, just like in 67. So, variables introduced by object noun phrases can in principle be bound by generic operators.

(69) Onze tuinman haat egels.

Interestingly, there is a difference between bare plurals and singulars introduced by an indefinite article. In one of their readings, bare plurals can refer to kinds, while indefinite singulars never refer to kinds. Probably, the following observational conclusion can be drawn: Variables which are introduced by VP-interal noun phrases can only be bound by generic operators, if the noun phrases (can) refer to kinds.

A third issue is that noun phrases which normally cannot be introduced by a definite article, can be introduced by an expletive article in object position of kind-selecting predicates like *exterminate*. Examples are given in 30d, repeated as 70 (but cf. Zamparelli 1995: 31) and 34a, repeated as 71. Normally, English definite plurals and Flemish definite singulars (as well as definite plurals) cannot be used in generic contexts. It is not difficult to understand that there could well be a relation with the fact that bare plurals are unacceptable in object position of kind-selecting predicates like *exterminate*. How this observation can be formalized is a point of interest for future research.

(70) The Dutchmen exterminated the dodos.
(71) (Flemish)
Edison heeft de gloeilamp uitgevonden.

5. CONCLUSION. This paper has tried to deal with the syntax and semantics of kind-referring noun phrases in Dutch, French, English and German.

We conclude that in Dutch (as well as in English, German) the lexical government requirement is evaluated at LF (cf. 65c). In this way, we can explain the contrast between kind-referring objects and subjects (cf. 51 and 52): Dutch, English, German and Flemish bare plurals in object position cannot refer to kinds, while kind-referring bare plurals are well-formed in subject position. Our analysis is that D cannot stay empty in subject position, because this position is not lexically governed. So, there is a trigger for N-to-D raising. As a consequence a kind-referring interpretation is generated (cf. 64a).

The object position is a lexically governed position. As a consequence, D is allowed to stay empty. This means that an indefinite interpretation can be achieved without N-to-D raising (cf. 65a). According to 64c, N-to-D raising is only possible if it is a Last Resort for convergence. As a consequence N-to-D raising is forbidden in object position. So, the only possible interpretation for Dutch, German, English and Flemish bare plural objects is an indefinite interpretation. This interpretation is incompatible with the meaning of kind-selecting predicates like *exterminate*.

French empty determiners cannot get an indefinite interpretation. N-to-D raising at LF does not provide a way out, because French bare nouns are unacceptable under kind-referring interpretations as well. Our conclusion, then, is that the lexical government requirement must be fulfilled in overt syntax in French (cf. 64d). This, in combination with the rule that common nouns must head the N-projections in overt syntax (cf. 64b), explains that French determinerless arguments are ill-formed.

In Flemish dialects noun phrases with definite articles cannot take a kind-referring reading. Following the work of Longobardi, we assumed that definite articles can in fact be treated as expletive articles, which create a CHAIN between N and D (cf. 64a). We assume that it basically depends on lexical information which nouns can be selected by an expletive article. Our conclusion is that, although in some Flemish dialects expletive articles can select proper names, Flemish expletive articles never select common nouns.

---

[1]I am grateful to Johan De Caluwe, Liliane Haegeman and Jack Hoeksema for their advices and to Bernard De Clerck for his comments.

[2]I use the symbol '#', because this sentence seems to be acceptable under a "taxonomic" reading: The (contextually identified) (sub)species of starling (for example the pink starling and the black starling) feed on insects and fruit.

[3]There is some interspeaker variation here (cf. the judgements in Haeseryn et al. 1997, Devos, De Muynck & Van Herreweghe 1991, Broekhuis, Keizer & Den Dikken 1997 and Ter Meulen (1995)). Sentences like 11c do appear in text corpora. Most speakers of Dutch seem to accept them, although with some hesitation.

[4]The definite singular is better if the subject noun phrase refers to a nationality, as in 1.

[5]No attempt has been made to 'translate' the sentences in Flemish. There are lexical differences between Flemish dialects and my point can be made without translating the sentences in Flemish.

[6]In the literature, predicates like *voorkomen* and *zeldzaam* are called *quantificational predicates* (cf. Krifka et al. 1995). They are often treated on a par with predicates like *uitgestorven* because the same noun phrase types can be used in subject position of these predicates.

REFERENCES

ABNEY, STEVEN. 1987. *The English noun phrase in its sentential aspect*. PhD. Dissertation, MIT.

BERNSTEIN, JUDY B. 2001. The DP Hypothesis: identifying clausal properties in the nominal domain. *The handbook of contemporary syntactic theory*, ed. by Mark Baltin and Chris Collins, 536-561. Malden, Mass./Oxford: Blackwell,

BROEKHUIS, HANS; EVELIEN KEIZER; and MARCEL DEN DIKKEN 2003. *Modern grammar of Dutch*. *Nouns and noun phrases. Occasional papers 4*. Tilburg.

CARLSON, GREGORY N. 1977. *Reference to kinds in English.* Ph. D. dissertation, University of Massachusetts, Amherst.

CARLSON, GREGORY N., and FRANCIS JEFFRY PELLETIER. 1995. *The generic book.* Chicago/London: The University of Chicago Press.

COHEN, ARIEL. 1999. *Think generic! the meaning and use of generic sentences.* Stanford: CSLI.

CHIERCHIA, GENNARO. 1998. Reference to kinds across languages. *Natural Language Semantics* 6.339-405.

CHOMSKY, NOAM. 1986. *Knowledge of language: its nature, origin and use.* New York: Praeger.

CHOMSKY, NOAM. 1995. *The Minimalist Program.* MIT Press, Cambridge, Mass.

DEVOS, FILIP; RIK DE MUYNCK; and MIEKE VAN HERREWEGHE. 1991. *Nederlands, Frans en Engels in contrast 1. De nominale constituent.* (Dutch, French and English in contrast 1. The nominal constituent) Leuven : Peeters.

DIESING, MOLLY. 1992. *Indefinites*. Cambridge, Mass.: MIT Press.

HAESERYN, W.; K. ROMIJN; G. GEERTS; J. DE ROOIJ; and M.C. VAN DEN TOORN. 1997. *Algemene Nederlandse spraakkunst.* (General Dutch grammar) 2 Volumes. Groningen: Martinus Nijhoff.

KRATZER, ANGELIKA. 1995. Stage-level and individual-level predicates. *The generic book*, ed. by Gregory N. Carlson and Francis Jeffry Pelletier, 125-175. Chicago/London: The University of Chicago Press.

KRIFKA, MANFRED. 2001. Kinds of kind reference. Talk held at the *Workshop on genericity*. University of Cologne.

KRIFKA, MANFRED; FRANCIS JEFFRY PELLETIER; GREGORY N. CARLSON; ALICE TER MEULEN; GODEHARD LINK; and GENNARO CHIERCHIA. 1995. Genericity: an introduction *The generic book* ed. by Gregory N. Carslon, and Francis Jeffry Pelletier, 1-124. Chicago/London: The University of Chicago Press.

LONGOBARDI, GIUSEPPE. 1994. Reference and proper names: a theory of N-movement in syntax and Logical Form. *Linguistic Inquiry* 25.609-665.

LONGOBARDI, GIUSEPPE. 2003. Toward a unified grammar of reference. To appear in: *Zeitschrift für Sprachwissenschaft.*

MEULEN, A. TER, 1995. Semantic constraints on type-shifting anaphora. *The Generic Book* ed. by Gregory N. Carlson, and Francis Jeffry Pelletier, 339-357. Chicago/London: The University of Chicago Press.

OOSTERHOF, ALBERT. 2001. Tempus en genericiteit. (Tense and genericity) *Tabu* 31.153-182.

OOSTERHOF, ALBERT, and KATHY RYS. 2004. Variatie in generieke NPs. Een suggestie voor vervolgonderzoek. (Variation in generic NPs. A suggestion for future research) *Taeldeman, man van de taal, schatbewaarder van de taal*. Liber Amoricum, ed. by Johan de Caluwe, Georges de Schutter, Magda Devos, Jacques van Keymeulen, 677-691. Ghent: Vakgroep Nederlandse Taalkunde Universiteit Gent/Academia Press.

OOSTERHOF, ALBERT. to appear. Reference to hierarchically ordered kinds in Dutch. *Leuvense Bijdragen/Leuven Contributions in Linguistics and Philology* 92.
OOSTERHOF, ALBERT. 2004. De empirische Basis van Semantisch Onderzoek naar Genericiteit. (The empirical base of semantic research into genericity) Ghent: Ghent University, MS.
RIZZI, LUIGI. 1990. *Relativized minimality.* Cambridge, Mass: MIT Press.
ZAMPARELLI, ROBERTO. 1995. *Layers in the Determiner Phrase.* Ph. D. dissertation, University of Rochester (page numbers refer to a 2000 revision).

Blandijnberg 2
9000 Ghent
Belgium
[albert.oosterhof@ugent.be]