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The emergence of the D system and the demise of morphological case in English[*]

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Abstract

In this paper I discuss the English NP and its diachronic development into DP via the introduction of a D system within nominals. Since NPs are inherently predicative, and N has a R(eferential)-role, that R-role must be bound, if NP is to be used as an argument. Either a functional category D or morphological case binds the R-role. Since there was no DP in OE, and the status of nominal projections was NP, morphological case bound the R-role. When morphological case disappeared, a syntactic D system was introduced to bind the R-role. Further evidence for this assertion is the absence of gerund constructions in OE, since gerunds are one instantiation of a D system.

1 Introduction

In this paper I will discuss the English NP and show how it developed diachronically into DP via the introduction of a functional category D within nominals, invoking the theory of theta-binding proposed by Higginbotham (1985). As is claimed in Stowell (1991) and Longobardi (1994), NPs are inherently predicative and not referential, and as Williams (1981) argues, N has an external R(eferential)-role. If NP is to be used as an argument, its R-role must be bound. This is the task of determiners in PE as Higginbotham argues (1985).

There is empirical evidence that in OE there was no DP; so the question arises of how the R-role in NPs in OE was bound without the D system. According to the theory of theta-binding to be developed here, morphological case that was attached to the head nouns could bind the R position. Two predictions follow from this: when morphological

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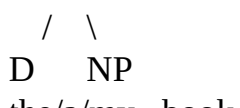
case disappears, a syntactic D system is introduced to bind the R-role. This is exactly what happened in the history of English. There was no functional projection, DP in OE, and at a certain stage a syntactic D-system was introduced. That is, a functional category emerged within the nominal projection and the whole structure NP changed into DP.

One more prediction is the absence from OE of gerund constructions, which have syntactic properties that are typical of VPs; taking nominal objects including double object constructions, and certain infinitival complements and being modified by adverbs. OE did not have gerund constructions and the ancestor of PE gerunds were pure nominals, since the affix (*ung/ing*) which derived a nominal from a verb, attached to a verb and the whole structure changed into a noun immediately. In fact, it had to, because of the requirement of morphological case. The emergence of a functional category, D, made it possible for a phrase to have a structure parallel to that of a clause.

This paper is organised as follows; in section 2, the difference between NP and DP is discussed and the theory of theta binding is explained. In section 3, I show that there was no DP in OE and discuss how the R role was bound in OE. In section 4, I take up gerund constructions and argue that the emergence of gerund constructions in English is dependent on the emergence of a functional category D within a nominal phrase. The paper ends with a summary of conclusions.

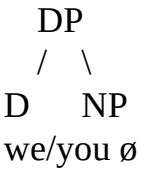
2 NP versus DP

In this section, I examine the difference between NP and DP, what task a functional D-system covers and how it is related to morphological case. First, I look at the structure of DP in PE. In line with the DP analysis (Abney 1987, Longobardi 1994), I assume the structure of PE adult nominals to be DP, projections of a head D. The structure of nominals is the following:

(1)


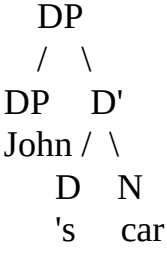
A head D takes an NP complement. A D position / a nominal head position is not necessarily occupied by lexical items, although both cannot be empty.

Pronouns are assumed to be determiners used without a complement:

(2)


That is, the person properties of the DP (first person, second person, etc.) are determined by those of its head determiner.

Genitive -*'s* in English is supposed to be a head determiner by Abney (1987) which takes a D projection as its specifier, and an N projection as its complement:

(3)


There is no agreement about the status of *this/that* in PE. They are used either as prenominal determiners or pronominally without any complement.

In this paper I limit the head determiner to articles, and assume that demonstratives, possessives and quantifiers occupy a different position.

The most relevant theory here is that of theta-binding proposed by Higginbotham (1985). A functional head theta-binds a particular position in the argument structure of its lexical complement. This pertains to both DP and VP/IP.

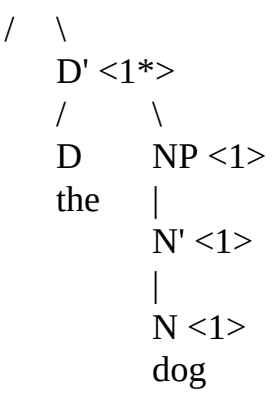
According to Higginbotham (1985) a simple noun like *dog* has an open place in it (and so denotes each of the various dogs). This open place is a referential argument in the thematic grid (or argument structure) of the word *dog*. The referential argument is very different from thematic arguments, which correspond to theta roles such as Agent, Theme, Goal, Experiencer, etc. The referential argument is the 'reference' (or referentiality) of that category (cf. Zwarts 1992). We call it R(eferential) role. This position can be discharged either by theta-marking or by theta-binding, which is necessary for a NP to be an argument. That is, a nominal must be specified, for example, as either definite or indefinite for interpretation at LF, although this does not exhaust the referential properties of nouns. This [+/- def] feature is responsible for the referential property of a nominal phrase. For an element to be an argument, it must be specified for [+/- def]. Then, the grammatical encoding of definiteness (indefiniteness) is the task of

a functional head D. The grammatical encoding of definiteness is taken care of either by morphological features of nouns in some languages or by functional categories (D) in languages like PE. I will return to this issue later. This difference between NP and DP is exemplified in the following sentences:

(4) a. John is champion.
b. We elected him chairman.
c. *Champion called my up yesterday.
d. *I met chairman yesterday.

Bare NPs can occur in non-argument positions as predicatives, but not in argument positions. As claimed in Stowell (1991) and Longobardi (1994), NPs are inherently predicative and not referential. Only DP can occur in argument positions. The reason is a D can bind the R-role in an NP:

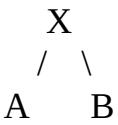
(5)



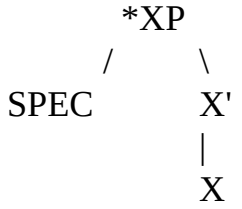
Theta-grids shown in angled brackets are projected from lexical items and are carried over by every node in the tree. The R argument position 1 is theta-bound by D, that is discharged by theta-binding. The asterisk indicates that the position closes or is discharged. When every theta role in an associated theta grid is discharged, we can say that a constituent is saturated. The complete phrase DP is saturated, i.e. all positions are discharged and the phrase is thematically complete (cf. Higginbotham 1985: 561).

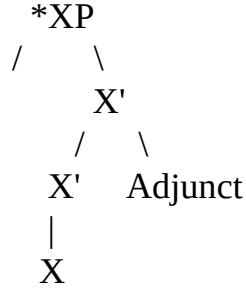
If a given language has overt case morphology, case morphology binds the R-role in an NP (decides the referential status of a noun), that position is discharged. If this option is not available, that is, there is no overt case morphology in a language, a syntactic operation becomes necessary, that is, the position must be bound by a determiner D, as observed above.

Theta-marking or theta-binding takes place only under government according to Higginbotham. Theta-binding takes place in the following configuration:

(6)


A and B must be sisters. In other words, functional heads cannot theta-bind a specifier or an adjunct:

(7) a.


b.


That is, theta-binding is effected only by an element attached directly to a nominal projection.

Accordingly, the task of D is to theta-bind a position in noun phrases, i.e. to decide the referential status of nouns and change them into arguments. D semantically binds a variable. D is a binder and there cannot be two binders. Chomsky (1982) notes that the impossibility of iterating determiners (**every the dog*) may be related to a prohibition against vacuous quantification: in the present terms, one determiner would have to be vacuous, since each is a binder. This explains the constraint on double determiners (Higginbotham 1985: 560).

3 NP in Old English

3.1 The absence of a D-system in early English

In this section I turn to the Old English period and support the main claim that there is no D system in OE by examining historical data. Although OE had two demonstratives, *se(seo /þæt)*, and *þes(þis/þeos)*, there were no articles(definite or indefinite) in the proper sense of the word. It is widely accepted among historical researchers that these demonstratives are not determiners. As was mentioned above, I limit D to articles, and assume that demonstratives, possessives and quantifiers occupy a different position. I argue that OE demonstratives have the status of N. First, look at the following OE paradigm in which nouns inflected for case, gender and number:

(8) OLD ENGLISH NOUN DECLENSION

Strong	**Masculine**	**Neuter**	**Feminine**
Singular	(stone)	(deer)	(love)
Nominative	stan	deor	lufu
Accusative	stan	deor	lufe
Genitive	stanes	deores	lufe
Dative	stane	deore	lufe
Plural			
Nominative	stanas	deor	lufa
Accusative	stanas	deor	lufa
Genitive	stana	deora	lufa
Dative	stanum	deorum	lufum

Weak	**Masculine**	**Neuter**	**Feminine**
Singular	(name)	(eye)	(sun)
Nominative	nama	eage	sunne
Accusative	naman	eage	sunnan
Genitive	naman	eagan	sunnan
Dative	naman	eagan	sunnan
Plural			
Nominative	naman	eagan	sunnan
Accusative	naman	eagan	sunnan
Genitive	namena	eagena	sunnena
Dative	namum	eagum	sunnum

The demonstratives were fully inflected, just like nouns, according to the case gender and number of the nouns they modified:

(9) PARADIGM OF *SE* DEMONSTRATIVE

	Masculine	**Neuter**	**Feminine**	**Plural**
Nom.	se	þæt	seo	þa
Acc.	þone	þæt	þa	þa
Gen.	þæs	þæs	þære	þara
Dat.	þæm	þæm	þære	þæm
Ins.	þy, þon	þy		

Where we would use a definite article, one of the two demonstratives could be used: and where we would use an indefinite article, either the numeral *an* (*one*) or *sum* (*a certain*) could be used. Numerals (from one to three) in OE inflected according to gender, case and number, too. However, more importantly, OE frequently had no word at all where we would expect an article today. Look at the following examples:

(10) wælstowe gewald
battlefield (fem. Gen.) command
'command of the battlefield'

(11) fram beaduwe
from battle (mas. Dat.)
'from the battle'

(12) Oddan bearn
Odda(gen. Sg.) son (neut. Nom. Pl.)
'the sons of Odda'

(13) Eall eorðe ys min
all earth is mine
'all the earth is mine' (Ælfric Exodus xix 5 (OED))

(14) besuðan Temese
south Thames
'south of the Thames' (CP 3, 18)

(15) holtes on ende
wood (neut. Gen.sg.) on end (mas.)
'at the edge of a wood'

(16) on beorg
onto mountain (mas. Acc.)
'onto a mountain'

(Cf. Mitchell and Robinson 1992: 107, Pyles and Algeo 1993: 128. The examples from (10) to (12) and (15) (16) are from Mitchell and Robinson.)

In (13) or (14) the definite article *the* is necessary in PE. Later, the form *þe* replaced the masculine nominative *se*: at first in the Northern dialect around 950. The nominative masculine and feminine *seo* had become *þe* almost everywhere by 1300. This new form *þe* came to be used as an invariable definite article *the* after 1400. The neuter form *þæt* and the plural form *þa*(*tho*) were left for the demonstrative function. PE *this* developed from the other OE demonstrative *þes*(*þis/þeos*). The singular nominative-accusative neuter *this* came to be used for all singular functions, and a new plural form, *thise* or *these* appeared, the ending *-e* as in the plural of adjectives. As Abney (1987) points out, one of the defining features of functional elements is that they lack descriptive content. Their semantic contribution is subsidiary. However, the demonstratives mentioned above had stronger meanings and made an important semantic contribution of their own. These demonstratives were used to denote a person or a thing pointed out or present deictically, and attention was directed on to them. Furthermore, although the use of *an* or *sum* is rare, when they are used, they mean something more than just 'one' (cf. Mitchell and Robinson, 1992: 107):

(17) an mægð 'a certain tribe'

(18) sum mon 'a certain man'

Sometimes, *an* and *sum* have an even stronger sense, e.g.:

(19) þæt wæs an cyning 'that was a peerless King'

where the meaning 'peerless' came from the numeral *an*.

(20) eower sum 'a particular one among you'

where the meaning 'particular' is ascribed to *sum*. It is safely said that when *an* was used, it almost always had more meaning than PE *a*.

Secondly, Abney says that articles are strictly inseparable from their complement: i.e. they cannot occur without their complements:

(21) a. Ho visto il/un *(raggazzo). (Italian)
have seen the/a *(boy)

b. I saw the/a *(boy).

c. *The is a great king.

However, demonstratives in OE were not dependent on the noun or nominal elements, but were independent lexical elements. The evidence to show this comes from the fact that they were used as demonstrative pronouns without the company of nominals as is shown in (22). Especially as an antecedent to a relative, meaning *man, he, that*, etc. as in (23) (cf. OED):

(22) a. þæt eart ðu
that are you
'you are that' (K. Ælfred Boeth. Xxxiii. §5(OED))

b. 7 se swiþe gewundad wæs
and he very badly wounded was
'and he was very badly wounded' (ASChron.48, 10 (755))

c. Se wæs feorða eac fiftegum from Augusto
He was forth also fifty from Augustus
'He was the fifty-fourth from Augustus. (Bede 54, 22-4)

(23) þe ðet bið mid þen halia gast itend
that he is with then holy ghost enclosed
'he/that man that is with enclosed the holy ghost(spirit)'
(Lamb. Hom. 95(OED))

The demonstrative *se/seo/þæt* was used as a relative pronoun, which inflected for gender,

number and case:

(24) Æþelswiþ cuen, sio wæs Ælfredes sweoster cyninges, forþ ferde
Athelswith queen who was Alfred's sister King's forward go
'Queen Athelswith, who was King Alfred's sister, passed away'
(ASChron. A 82/(1))

All the above examples strongly suggest that demonstratives in OE do not have the status of D, unlike articles in PE.

Concerning the numeral *an*, a number of examples to show that it is not an article, are available. In the following examples, *an* is used alone as a nominal, while PE *a/an* cannot occur alone '*A of them stood by', or '*A who was a lawyer...' :

(25) Soðlice an of þam þe ðar embe-uton stodon his swurd abræd
truly one of them that there by stood his sword drew
'And/truly one of them that stood by drew his sword' (Mark 14, 47)

(26) an þe wæs þære æ-ys lareow axode hyne
one who was there law teacher asked him
'And one who was a lawyer, asked him' (Matt 22, 35)

(27) oð ðæt an ongan fyrene fremman feond on helle
until that one began wickedness do fiend in hell
'until one creature, a fiend from hell, began to do wicked deeds'
(Beowulf 100)

All the above facts strongly suggest that OE numerals have the status of nouns in this usage. Likewise, I argue that OE personal pronouns occupy the N position. Although the genitive form of personal pronouns could occur in prenominal position like *his fæder (his father)*, it often appeared in postnominal position like *fæder min* (*my father*). Furthermore, as well as other substantives, the genitive form of personal pronouns served as an argument of a predicate verb:

(28) a. þonne ic his geþencean sceal
when I him(Gen.) think shall
'when I shall think of him' (Alfred's Orosius (ed.Bately) 77/11)

b. Nu þu his[i.e. þæs leohtes] hrinan meaht
Now you it [the light](neut.Gen.) touch can
'Now you can touch it.' (Cædmon's Genesis 616(gr.) (OED))

The verb *hrinan(touch)* took the genitive noun as an argument.

In the current framework all the prenominal elements like articles, demonstratives, possessives and quantifiers in PE are assumed to belong to the category determiner and hence occupy the head D position, the top position of the functional projection. Empirical evidence in favor of this assumption comes from English data that articles, demonstratives and possessives are in complementary distribution:

(29) *a my book/ *this your pencil/*the this hat/*some your friends

Although some multiple determiner sequences might be ruled out on semantic grounds, such as the incompatibility between definiteness and indefiniteness, this is not possible with the other examples, which are perfectly grammatical if they are paraphrased:

(30) a book of mine/ this pencil of yours/ some friends of yours

Moreover, this constraint on multiple determiners found in English is not universal. As is well known, many Romance languages have grammatical counterparts of (29):[1]

(31) a. un mio libro a my book (Italian)
la mia amica the my friend (Italian)

b. baiatul acesta frumos (Rumanian)
boy-the this nice 'this nice boy' Giusti (1997:100)

Thus, the ill-formedness of (29) must be based on syntactic reasons. Even in English some quantifiers may cooccur with articles and demonstratives:

(32) a. all the boys/ the many boys
b. *the all boys/*many the boys

[1]In Romanian a phrase initial demonstrative, however, is in complementary distribution with an article. In (31b) the initial noun is inflected with the enclitic definite article.

The possible cooccurrence of demonstrative, possessive and definite articles suggests that they cannot occupy the same position synchronically.

Turning to OE and ME, the genitive pronoun cooccurred with *se/seo/þæt* (example (c)is from early Modern English):

(33) a. ðæs mine word 'these words of mine' (WESGosp Matt. 7.24)
b. this my pour letter (Paston Letters II 144/2 15th century)
c. this my sudden choice (Sh Titus 1.1.318)

As the above examples show, this type of nominal phrase survived through the ME period into the beginning of the 18th century. The 'this word of mine' type phrase was attested from the 15th century. The cooccurrence of *ðæs* and *mine*, or *this* and *my* also suggests that they occupy different positions.

Concerning the genitive, as our example (28) shows, the genitive noun in OE served as a complement or rather an argument of a verb and had its own meaning: cause of the action. It was totally different from the modern *-'s* form since the modern one never stands as an argument of a verb on its own like **remind his*, or **think his*.

Even in the present languages, as Giusti (1997:100) suggests, a unified analysis of prenominal elements cannot provide a satisfactory explanation of all the data. In particular, if we assume that both articles and demonstratives occupy D, the cross-linguistic facts about the distribution of articles and demonstratives are hard to explain. Hence, I assume that demonstratives and articles do not constitute a homogeneous category. Only articles occupy D, and demonstratives are lexical elements. Therefore, the presence of demonstratives in OE does not provide evidence for the presence of a D system in OE. All the facts observed in this section suggest that OE demonstratives were not determiners, and we can say that demonstratives were lexical words rather than function words. The final conclusion in this part is that the nominal phrase observed in OE is a projection of N, NP, not DP.[2]

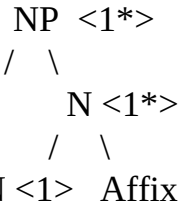
3.2 Binding of referential arguments in earlier English

In section 2, we have observed how functional heads theta-bind the referential argument positions in PE. In the previous section, turning to the earlier period, we have concluded

[2]I assume that demonstratives are not determiners in PE. I also assume an empty determiner to be present in bare plural nouns or mass nouns in PE.

on the basis of a considerable amount of evidence that a language like OE lacked a determiner system. Then, the question arises of how NP in OE was turned into an argument without a D system. That is, how was the R role bound in OE? In this section, I will discuss the binding of the R role in OE. The hypothesis is that referential argument positions can be bound by morphological case on the head nouns in earlier stages of languages. This hypothesis comes directly from the theory of theta-binding sketched in section 2. The R position can be discharged either by theta-marking or by theta-binding, which is necessary for a NP to be an argument. If case morphology can bind the R-role in an NP, or determines the referential status of a noun, that is, assigns (or discharges) a theta role, that position is discharged.[3] Morphological case marking is sufficient for an NP to be an argument. Thus, when morphological case distinctions were present in a language, the position was discharged by theta-marking, and there was no need for syntactic theta-binding. Therefore, no D-system was necessary. This is indeed the case with OE NPs.

The foregoing discussion correctly predicts possible structures and impossible structures not only for English but universally. This prediction matches well with the historical facts. First, the following is possible:

(34)


'Affix' is assumed here to denote case inflections. The R position is discharged by theta-marking. This process is exploited by languages in which morphological case distinctions on the head nouns are present and there are no D-systems, such as OE. Consider the structure of the OE word *stan* (*stone*):

(35) OE stanum NP <1*>

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[3]Why is the position discharged like this? In earlier English, morphological case was closely related to the thematic roles of nouns. A constituent was licensed to occur in a given A-position only if it was assigned an appropriate theta role. Only theta marking was a licensing condition for a constituent. In other words, nouns could become arguments by theta role assignment only. Theta roles are expressed in the form of morphological case.

```
          |
          N <1*>
         /      \
N<1>          case affix
stan          um (dative, plural)
```

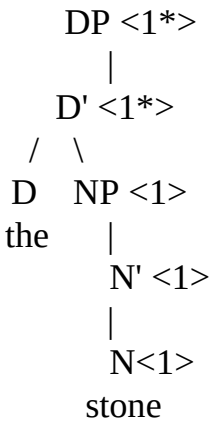
The prediction following from theta-binding is that when case distinctions disappear, a syntactic determiner system is introduced. Looking through the development of the D system in English, this prediction seems to be correct. By the early ME period, many OE inflectional distinctions were drastically reduced, a process which was definitely accelerated by the Norman Conquest, although the leveling of inflectional endings had already begun in the late OE period. The changes were so extensive that most of the elements with person/number/case distinctions in OE were profoundly affected. Now there are only two surface case forms on the head nouns in PE, the common case and the genitive case.

As a result of the demise of morphological case distinctions and the change in the case system from being morpho-semantically-based to being structurally based, theta-binding by a determiner has become necessary.

(36)

```
        DP <1*>
       /    \
D    NP<1>
          |
          N <1>
          binding
```

In (36) D binds the position in NP. This process is exploited by languages where there are no case realizations on nouns and there is a D-system, like PE:

(37)


4 Gerund constructions in English

4.0 Further evidence of the effects of the emerging D system in English comes from a consideration of gerunds.

4.1 Gerund constructions in PE

Gerunds in PE have the external distribution of a nominal phrase but the internal structure of VP. Their nominal status is clear from the fact that they can occur in all nominal positions, including subject positions in questions and object positions of preposition, where a clause complement or an infinitival complement cannot appear:

(38) What would John's leaving
*that John left reveal about him?
*for John to leave

(39) John's leaving.
I told you about *that John left.
*for John to leave (Jackendoff 1977: 222)

On the other hand, the gerund has a number of syntactic properties that are typical of VPs; taking nominal objects including double object constructions, and certain infinitival complements and being modified by adverbs (cf. Ouhalla, 1991: ch4, Roberts, 1997: 23,

etc.):

(40) a. John's destroying his career
b. *John's destruction his career

(41) a. John's giving Mary a book
b. * John's gift Mary a book

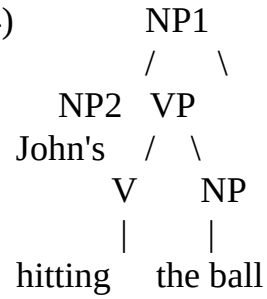
(42) a. John's appearing to be dead
b. *John's appearance to be dead

(43) a. John's deliberately destroying his career
b. *John's deliberately destruction of his career

Gerunds take IP adverb like *probably* as well as VP adverb. *Deliberately* in the above is an IP adverb.

From the above examples we can say that gerunds in PE are nominals containing a VP. These conflicting properties are not easily expressed in a single structure, although the point is clear. The structure must show that gerunds have a clausal structure up to some point in the derivation and change into a nominal. In a traditional analysis, gerund constructions are assigned a structure such as (44) (cf. Chomsky, 1986):

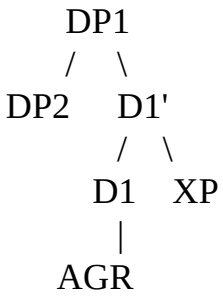
(44)



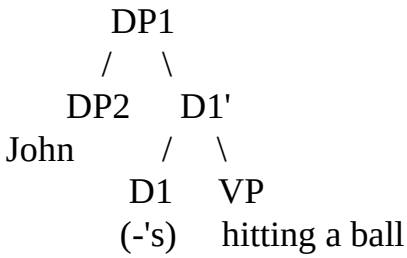
However, the structure (44) is ruled out by X'-theory, if VP is supposed to be analysed as the head of NP1. That is, NP1 lacks a corresponding N' and N-head. Besides, some exceptional mechanism is necessary to assign genitive case to the subject in Poss-ing gerunds. A verb in PE cannot assign genitive case.[4]

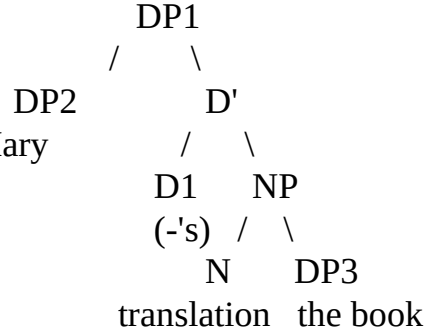
[4]However, as we have discussed in 3.1, an OE verb could assign genitive to its argument. The genitive noun served as an argument of the verb.

The DP analysis proposed by Brame (1982), Fukui and Speas (1986) and Abney (1987) correctly captures the parallelism between noun phrases and clauses by giving noun phrases an internal structure similar to that of a clause including a functional category. The DP analysis manages to solve the gerund problems mentioned above, giving the following structure:

(45)


If XP, the complement of D is VP, the whole structure is a gerund construction. Under the DP structure the head is D(eterminer) and AGR in D could assign genitive case to the subject of gerunds. If the complement of D is NP, the structure is a nominal.[5]

(46) a.


b.


[5]This DP is realized as PP of the book.

The DP analysis seems to be superior to the traditional one. What is relevant to this paper is how this DP analysis could explain the historical development of gerund constructions in English. The DP analysis can predict the absence of gerund constructions from OE correctly. In (46a) a D changes a complement VP into a gerund. In OE without a D system, a VP could become a gerund only by a case affix attached to a VP. However, a case affix could not attach to a VP: it morphologically selects a noun. Therefore, a VP could not change into a gerund in OE.

Assuming the DP analysis for PE, that is, the presence of a functional category within DP, and assuming that noun phrases and clauses have similar structures, we will turn to the OE period, leaving irrelevant details aside.

4.2 The historical development of gerund constructions in English

Since my main claim is that earlier stages of English, such as OE lack a syntactic D-system, we predict that gerund constructions which are one instantiation of a D-system should be lacking in OE. The historical facts support this prediction.

As is well known, the ancestor of gerunds did not have verbal properties at all in OE. The ancestor of PE gerunds in OE is formed by attaching the suffix *-ung, -ing* to a verb. The original function of the suffix *-ung, -ing* was to derive feminine abstract nouns from action verbs; *-acsung(asking*) from *acsian (to ask*), *bodung (preaching*) from *bodian (to preach)* and *ræding (reading)* from *rædan (to read)*, etc. In OE the more usual form was *-ung,* but *-ing* was also frequent. In early ME, *ung* rapidly died out, being scarcely found after 1250. These nominals inflected just like nouns. For example, *leornung (learning)* is derived from a verb *leornian (to learn)* which belonged to weak verbs class II. The paradigm of *leornung* is as follows:

(47)	singular	nominative	leornung
		accusative/genitive/dative	leornunge, -a
	plural	nominative/accusative	leornunga, -e
		genitive	leornunga
		dative	leornungum

The derivation of these forms is purely a morphological process, with no syntactic implications. These *-ung, -ing* forms were pure nouns syntactically as well as morphologically in OE, with nominal functions as enumerated below (cf. Ono and Nakao 1980):

(48) a. As subject:
þa wæs gefylled Hieremias witegung
then was fulfilled Jeremiah prohecy
'Then was fulfilled the prophecy of Jeremiah' (ÆCHom I, 80.18)

b. As object of a verb:
gearca us gereordunge on þinum huse
prepare us a meal in your house
'prepare a meal for us in your house' (ÆCHom I, 60.18)

c. As object of a preposition:
þurh unrehte willunge
through undue ambition
'through too much ambition' (Bede 278. 27-8)

d. As complement:
Nis ðis nan wiglung, ac is gecyndelic ðincg
is not this not any sorcery but is proper thing
'This is no charm, but is a natural thing' (ÆCHom I. 102.25)

e. Modification by adjectives:
þæt is eall for urum synnum and yfelum geearnungum
that is all for our sins and evil (dat.pl.) deserts
'that is all for our sins and evil deserts' (ÆCHom. I. 16.26)

f. Modification by demonstratives:
se sige 7 seo reafung þæs Persiscan feos
that victory and that plunder that(gen.) Persian treasure
'the victory and plunder of the Persian treasure' (Orosius 84.21)

Besides these functions, forms in *ung/ing* admitted a plural, although this was dependent on the meaning, and had the genitive form of an object noun, as shown in (48f). Thus, the verbal properties mentioned in §4.1 are unknown in OE and early ME until the 14th century. Even in the ME period the *-ing* form had one or more of the following properties: it had a demonstrative in front of it as in (49); it had the genitive form of an object noun or it needed a preposition *of* as in (50); and was modified by adjectives as

in (51) (cf. Nakao and Koma 1990):

(49) seo feding þara sceapa (genitive plural) OE
that feeding of the sheep (CP 43.5)

(50) for to be wise in byyng of vitaille ME
to be wise in buying victuals (Ch CT A 569)

(51) in vertuouse techynges of orisouns
in the virtuous teaching of prayers (Ch CT I 1038)

The introduction of gerund expressions to mark the perfect tense, and for the passive voice occurred around the 15th and the 16th century:

(52) 'Twill weep for having wearied you (Sh Tp 3.1.9)

(53) I spake ...of being taken by the insolent foe (Sh Oth 1.3.134-7)

From the OE period to the 13th century, the -*ing* form admitted a preceding possessive case or possessive pronoun. However, the sign of the possessive began to be dropped by 1600 (OED) and the common case began to be widely used around the 18th century; 'in the event of your expectations not being at once realized', 'in consequence of much snow having fallen'. This is not possible for a nominal phrase like '* in the event of your expectations realization'.

All the historical evidence shows that PE gerunds developed from pure nominals to their current status. The development of gerund constructions in English is the process of a pure nominal phrase acquiring verbal properties. In other words, a nominal phrase acquired a structure parallel to that of a clause. What made this change possible? Here theta-binding comes in. For a nominal phrase to have a structure parallel to that of a clause, a functional category within the phrase is necessary. That is, the emergence of gerund constructions in English is dependent on the emergence of a functional category D within a nominal phrase. I will give a detailed discussion of this in the next section.

4.3 The emergence of gerund constructions in terms of theta-binding

As discussed in 4.1, we can explain the absence of gerund constructions in OE and how they developed in English by using the theory of theta-binding and the DP analysis. In OE, a VP could not change into a gerund by a D, because there was no D system. Only a case affix attached to a VP could change a NP into a gerund. However, a case affix could not attach to a VP: it morphologically selects a noun. Therefore, a VP could not change into a gerund in OE.

An NP in a PE gerund cannot have the status of an argument until D theta-binds it, because no overt case marking is available any more. Before theta-binding, all the properties of VPs are available, for instance, containing a subject argument or an object argument as in (54), being modified by adverbials as in (55)and taking a passive voice as in (56b), or taking a perfect form as in (56c):

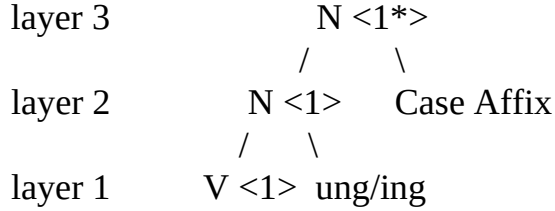
(54) a. I don't like you going out at night.
b. She hated his playing the piano.

(55) Reading aloud often sent him to sleep.

(56) a. John's giving Mary a book offended Joan.
b. He talked about the necessity of being loved.
c. There is no sign of his ever having lost his temper.

This process involves the lexical category incorporating a phrasal projection.

The OE derived nominals, the ancestor of gerunds, inflected just like nouns, and the morphological case attached to the derived nominals could bind the open position. The following was one possible structure for OE:

(57)


At layer 1, the suffix attaches to a verb, and the whole structure changes into a noun, and *ung/ing* is a head nominal. After this, no more operation on the verb is possible (at layer

2). As we have seen, this is the reason why verbal properties are not observed in OE derived nominals. That is, they cannot take an object argument or a subject argument. The morphological case attached to a derived N can bind the R-role and the constituent is saturated.

This case distinction has been completely lost in PE. Accordingly, some syntactic device is necessary to bind the open position in its thematic grid: the appearance of a functional category. This matches the historical development of gerund constructions from pure nominals. That is, the emergence of a functional category within a nominal phrase made it possible for a nominal phrase to have a structure parallel to that of a clause.

5 Conclusion

In this paper I have discussed the English NP and its diachronic development into DP via the introduction of a D system within nominals. I presuppose that NPs are inherently predicative and not referential, and that N has an external R(eferential)-role. So, if NP is used as an argument, its R-role must be bound. Based on the theory of theta-binding proposed by Higginbotham (1985), I have proposed that either a functional category D or morphological case binds the R-role in N. I have shown that there was no DP in OE, and the R-role was bound by morphological case. When morphological case disappeared, a syntactic D system was introduced in English to bind the R-role. Further evidence for this assertion is the absence of gerund constructions in OE. Since gerund are one instantiation of a D system, I predict their absence from OE. The historical development of gerunds in English supports this prediction.

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