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**IN SEARCH OF SYNTACTIC SYMMETRY:
On the Parallels between Clausal and Nominal
Hierarchical Structure**

by

Denise Douglas-Brown

a thesis submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy

Department of Linguistics and English Language
The University of Durham
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Abstract

This thesis is an expansion of the idea of clausal and nominal structural parallelism as originally investigated by Abney (1987). It attempts to address some of the particular asymmetries in generative grammar concerning the specifier position and the accommodation of multiple overt morphemes in CP and in DP. Syntactic *symmetry* in the sense of this work refers to the maximal uniformity of configurational structure in X-bar theory.

While structural standardisation has been a goal of GB-theory since the *Barriers* model of Chomsky (1986), there in fact remain a number of commonplace asymmetries concerning the morphemic *realisation* of the Spec and X^0 positions in X^{\max} . The operating premise is that symmetry of node realisation is desirable in hierarchical structure, and that it extends across head categories. That is to say, an X^0 element is constrained to occur under an X^0 node, and an X^2 element is constrained to occur under an X^2 node. Under this premise the morphemic *content* of X-bar nodes such as Spec and X^0 would be as restricted as the X-bar configurations themselves.

A central empirical problem that then arises is what is in Spec of XP, and what implications any resolution of this has for the postulation of various functional categories. Stowell's (1981, 1983) notion of subject specifiers provides the analytical starting point for this thesis, and Abney's (1987) parallelism between the clause and the nominal is considerably elaborated to explore a wide range of analogous *F*-categories in CP and in DP. I begin with an examination of the specifier position historically and the internal structure of NP, VP, AP, and PP with respect to the contents of Spec. In the course of examining Spec of NP, the DP-Analysis is reconsidered with respect to the D node. A case is then made for an articulated Infl in the nominal (i.e., an abstract composite consisting of a range of functional categories), coinciding with an equally elaborate and parallel Infl of CP. Specifically, I consider whether the ϕ -features of Agr of Infl (i.e., *person*, *number*, *gender*, and *Case*) should be broken down into independent *F*-categories for both the clause and the nominal, and conclude that only gender retains the status of feature. *D* and *Num* in the DP are investigated for their contents and their interaction.

The theme of structural symmetry (i.e., configurational uniformity) in X^{\max} revolves around three principal ideas: (i) that the specifier position of an XP is primarily a site for nominal subjects; (ii) that many elements previously hypothesised to occupy [Spec,XP] are actually in another node, *Num*; and (iii) that the ϕ -features of Agr of Infl are independent functional categories in their own right, with the exception of gender. Based on notions (i) to (iii), a complex hierarchy of functional categories is progressively developed for CP and DP. Nodes such as *Poss*, *Kase*, and *Num* are added to extant functional categories such as *Agr*, *T*, *C*, and *D*. *Agr* is redefined as the site of solely a person feature (*1p*, *2p*, or *3p*) in the clause and in the nominal. Finally, a fully articulated Infl is expounded for CP and DP.

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Table of contents

Abstract	ii
Acknowledgements	iii
	Page
Chapter 1: Introduction	1
1.1. Standardising the maximal projection within X-bar Theory	1
1.1.1. Historical background: standardising sentential analyses	2
1.1.1.1. Evidence for an I (or Aux) node in the X-bar schema	3
1.1.1.2. The Uniformity of IP	13
1.1.1.3. The Necessity for CP	15
1.2. Remaining discrepancies in X-bar structure	20
1.2.1. The specifier node	21
1.2.2. Specifiers as subjects	23
1.3. Base vs. Late Lexical Insertion	27
1.4. Base-generated vs. movement-generated subject specifiers	33
1.5. Theoretical premises concerning [Spec,XP]	34
Chapter 2: Asymmetries with the Spec position across categories	46
2.1. The position of the subject node in maximal projections and the 'Internal Subject' Hypothesis	46
2.2. Subject specifiers in VPs	49
2.2.1. The VP-Internal Hypothesis of Koopman and Sportiche (1988, 1991)	49
2.2.2. The Internal Subject position of Zagana (1982), Manzini (1983), and Kitagawa (1986)	50
2.2.3. The Internal Subject position of Hoekstra (1984), Bennis (1986), Fukui and Speas (1986), Kuroda (1986), Sportiche (1988), Fassi-Fehri (1988), Rizzi and Roberts (1989), and Speas (1990)	51
2.2.3.1. <i>Be</i> as a raising verb	52
2.3. Subject specifiers in NPs	57
2.3.1. The DP-Analysis and [Spec,NP]	61
2.4. Subject Specifiers in APs	65
2.4.1. The position of adjectival predicates in English	68
2.4.1.1. <i>Subject-Shift</i> in English APs	73
2.4.2. Attributive and Predicative As	76
2.4.3. Subjects in [Spec,AP] and a <i>Num</i> node for degree and measure elements	78
2.5. Subject specifiers in PPs	88
2.5.1. A recapitulation of [Spec,NumP] and [Spec,PP]	90
2.5.2. Num heads and P heads	90
2.5.3. Complex Num and P constructions	92

	Page
Chapter 3: The Case for Infl in the DP	98
3.1. Deixis and possession	98
3.2. Why DP needs more categories	100
3.3. The Status of Agr in DP	102
3.3.1. Agr as a feature of D (the <i>Agr-D</i> analysis)	102
3.3.2. Agr as a feature of Infl of DP (the <i>Agr-I</i> analysis)	104
3.3.2.1. Evidence for an Infl node in DP (evidence that DP = CP)	107
3.3.3. Agr as an independent category within DP (an incipient <i>split-Infl of DP</i> analysis)	115
3.3.3.1. Agr as <i>Person</i>	117
3.3.3.2. Agr and Spec	119
3.3.3.3. The <i>Agr-up or Agr-down</i> parameter	120
3.3.3.4. Agr-S and Agr-O in the nominal	123
Chapter 4: The ϕ -features of DP	
4.1. <i>Case</i> in the DP	126
4.1.1. Revising Abney's Co-Occurrence Constraint (for +Det and +Poss)	129
4.1.2. Case-marking of Possessor DPs in Hungarian	131
4.1.2.1. Dormancy of Poss in Possessor DPs	135
4.1.2.2. Case-marking of <i>wh</i> -Possessors	136
4.2. <i>Person</i> in the DP	137
4.3. <i>Gender</i> in the DP	145
4.3.1. Gender as a feature on N at base-level	146
4.3.2. Gender <i>not</i> as a feature on Num in Romance	152
4.3.2.1. Raising of N ⁰ to Num ⁰ and gender	153
4.3.2.2. Gender in Romanian	155
4.3.2.3. Gender in Walloon	158
4.3.3. The <i>Variable Feature-Raising</i> Hypothesis	163
4.3.3.1. Substantive vs. functional categories and gender	165
4.3.4. Gender <i>not</i> as an independent <i>F</i> -category of DP	166
4.3.4.1. GenP as an uneconomical derivation	169
4.4. <i>Number</i> in the DP	172
4.4.1. Need for Num	172
4.4.2. Location of Num in the functional hierarchy	174
Chapter 5: <i>D</i> and <i>Num</i> in the DP	177
5.1. Evolution of D	177
5.1.1. Boomfield's subclass of determiners	177
5.2. Contents of D	178
5.2.1. Demonstratives and articles in D ⁰	178
5.2.1.1. Jackendoff's Det node	181
5.2.1.2. Feature-specification of the classes of D	186

	Page
5.2.2. Other deictic elements in [D,DP]	188
5.2.2.1. <i>Wh</i> -deictics in D ⁰	188
5.2.2.2. D ⁰ determiners vs. Num ⁰ quantifiers	189
5.2.2.3. Identificationals, Indeterminates, and Determinates in D ⁰	194
5.2.3. Deictic elements in the Spec of Infl of DP	199
5.2.3.1. Pronouns in [Spec,Infl] of DP	199
a) <i>Nominative subject pronouns</i>	207
b) <i>Person and number and subject pronouns</i>	209
5.2.3.2. Titles in [Spec,Infl] of DP	212
5.2.3.3. Proper Names in [Spec,Infl] of DP	213
5.3. Evolution of Num	214
5.3.1. Bloomfield's subclass of numeratives	215
5.4. Contents of Num	215
5.4.1. [+Pl] in Num	218
5.4.2. Cardinals and Ordinals in Num	219
5.4.3. Quantifiers in Num	220
5.4.3.1. Partitives and pseudo-partitives	223
5.4.3.2. Harmony between D and Num	223
5.4.4. Degrees and Measures in Num	226
Chapter 6: Concluding Remarks	230
6.1. Bringing cohesion to asymmetries	230
6.2. Num as a category in CP	230
6.2.1. The clefting of person and number	231
6.3. Contents of Num in CP	233
6.3.1. Recursive Num in CP	234
6.4. The <i>F</i> -categories of DP revisited	236
6.5. The fully articulated CP	237

Chapter 1: Introduction

1.1. Standardising the maximal projection within X-bar Theory

This thesis is an expansion of the idea of clausal and nominal structural parallelism as originally investigated by Abney (1987). It attempts to address some of the particular asymmetries in generative grammar concerning the specifier position and the accommodation of multiple overt morphemes in CP and in DP. Syntactic *symmetry* in the sense of this work refers to the maximal uniformity of hierarchical structure in X-bar theory with respect to node *realisation*. Following on from the standardisation of configurational structure in the *Barriers* model of Chomsky (1986), this work attempts to standardise the contents of the Spec and X^0 positions in X^{\max} within Government and Binding theory.¹ The morphemic realisation of these positions has been somewhat variably treated since the advent of X-bar theory in the 1970s (Chomsky 1970; Jackendoff 1977). However, with the wide acceptance of the DP-Analysis (Abney 1987) and the VP-Internal Subject hypotheses of Koopman and Sportiche (1988) and others, I take as a starting point that the specifier position is restricted to subject nominals across all head categories.

The specifier node and the DP-Analysis figure prominently in this work. In particular, I discuss (i) how Case theory but not theta theory is relevant to the notion of an 'external' argument, since θ -marking of arguments occurs within the maximal domain of a lexical head; (ii) how the Specifier node has been widely adopted as a universal 'dumping' ground, for placement of disparate constituents; (iii) how, if we reserve the Specifier position for subject arguments, a *Num* (*numeric*) node must be posited to house many of the elements formerly placed in Spec; (iv) how the DP-Analysis requires considerable elaboration, in order to address the multiple ϕ -features of DP that are evident from cross-linguistic evidence; and (v) how *NumP* of DP interacts with the other functional categories of DP.²

In the course of the discussion I also try to reconcile certain theoretical notions such as the leftward *raising* of X^0 and X^2 elements in the syntax, and the rightwards *Alternative Realisation* of F^0 features as grammatical morphemes at PF (Emonds 1985, 1986, 1987, 1994). The fusion of these two notions necessarily entails complex configurations that are at times manifoldly rich in structure (for example, the analysis of Hungarian possessive nominals in Chapter 3).

¹The Principles and Parameters or 'Government and Binding' model (e.g., Chomsky 1981; Chomsky 1982a; 1986a; Chomsky 1986b) is henceforth referred to as 'GB-theory' or the 'GB-model', as this is the abbreviation by which the model is perhaps best known.

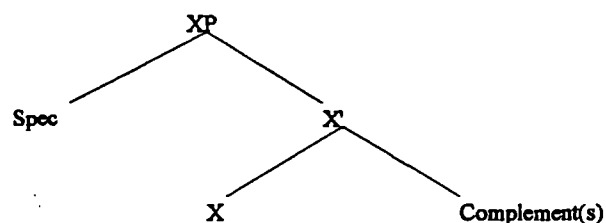
²My *Num* category is a direct derivative of Bloomfield's (1933:203) early *numerative* class of limiting adjectives.

Chapters 1 and 2 address the asymmetric array (i.e., the disparate range) of elements that have previously been hypothesised to occupy the [Spec,XP] position in NP, VP, AP, and PP. I offer a synthesis of these asymmetries, claim that asymmetric analyses are problematic, and adopt a Stowellian *Subject Specifier* framework for X^{\max} (Stowell 1981, 1983). Such a framework utilises X-bar principles in a manner which is conducive to syntactic (i.e., structural) symmetry. Chapter 3 examines some of the asymmetries connected with the D node in Abney's DP-Analysis, and substantially elaborates DP. A case is made for an elaborated Infl in the DP (i.e., an abstract composite node comprising a range of functional categories). Chapter 4 discusses the ϕ -features of Agr of Infl (i.e., *person*, *number*, *gender*, and *Case*), and argues for separate functional categories for *person*, *number*, and *Case* but not *gender*. An analogous Infl is suggested for the nominal and the clause. Chapter 5 examines the contents of **D** and **Num** in the DP, and the constraints on their pre-N word order. Finally, Chapter 6 posits a fully articulated and parallel Infl for CP and DP, and offers some evidence for the separation of person and number into distinct *F*-categories. Throughout the discussion, the licensing relations of θ -assignment, Case-assignment, agreement, predication, and complementation are considered in the pursuit of uniformity.³ The thesis adopts the GB-model of Universal Grammar (cf. Chomsky 1981; 1982a, 1986a; 1986b). I assume a general familiarity with this theoretical model.

1.1.1. Historical background: standardising sentential analyses

Since Chomsky's *Remarks on Nominalisation* (1970) and Jackendoff's *X-Bar Syntax* (1977), the structural composition of maximal projections has been more or less uniform in terms of categories and their placement in a configuration. A standard tree in the X-bar schema has the following form (cf. Chomsky 1970:164; Jackendoff 1977:17):

(1)

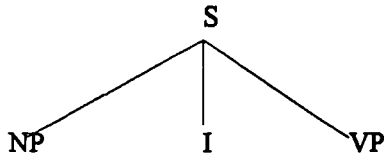


A category *X* heads the projection and, together with its sister complement, forms an intermediate X' constituent. This X' composite together with its specifier forms the ultimate projection, an X^{\max} or maximal phrase. For the four lexical categories of N, V, A, P,

³Cf. Heycock 1994:3 on licensing relations.

therefore, we can posit the maximal projections of NP, VP, AP, and PP according to the configurational structure in figure (1). However, although X-bar theory outlines figure (1) as the structural schema for all syntactic categories, until the mid-1980s analyses of the ultimate category *sentence* remained elusively outside of X-bar uniformity. Sentential analyses until this time were typically represented with a nonstandard structure of:

(2)



This structure was non-uniform in two respects:

- (a) *S* has no *head* from which to project; it is not a licit projection of either NP or VP according to the X-bar principle of a head (X) projecting to a larger unit of its own type (XP). Lack of headness in figure (2) makes *S* exocentric (*non-headed*; i.e., in a category external to any element within the tree, and therefore outside of theoretical predictability). In any case, NP and VP are themselves maximal, so they can hardly project to something larger (i.e., an *S*) except by forming an adjunction structure. If either NP or VP were adjuncts in figure (2), they would be peripheral and not central to the structure. Yet both NP *and* VP are clearly central components of the ultimate projection in figure (2).
- (b) Although the category I (or **Aux** in the '50s, '60s and '70s models) was accepted due to the considerable evidence for its existence, it was clearly anomalous in X-bar configurations and in an awkward, *ad hoc* position in the tree as shown in figure (2). Yet I (**Aux**) could not be dispensed with because, besides assigning nominative Case to the subject NP (cf. Chomsky 1965: 221-2, n35; Chomsky 1981:52, 170; Chomsky 1986a: 74, 188), the empirical evidence for an I node is incontrovertible.

1.1.1.1. Evidence for an I (or Aux) node in the X-bar schema

- (a) *Nominative Case on subject pronouns in the presense of a finite I*: if a sentence exhibits tense and agreement features on the verb (i.e., is [+Tns] and [+Agr]) it is a *finite* clause and the verb is inflected. In this case there is overt presence of nominative Case on subject pronouns:⁴

⁴A sentence that doesn't exhibit tense and agreement features is [-Tns] and [-Agr]; such a sentence is a *nonfinite* clause and the verb is uninflected. Nonfinite clauses are generally infinitival, gerundive, or participial in form, as in the complemented clauses in the following examples: *I want [you to leave now]; I'd prefer [his arriving early], I saw [the man beaten senseless].* (Cf. Radford 1988:288).

- (3) (a) *I* feel a cold coming on
 **Me* feel a cold coming on
- (b) *He* is an idiot.
 **Him* is an idiot.
- (c) *She* talked continuously for three hours.
 **Her* talked continuously for three hours.
- (d) *We* had offered to pay.
 **Us* had offered to pay.
- (e) *They* will agree to the proposal.
 **Them* will agree to the proposal.

(b) *Overtness of both I and V at once*: modals, dummy *do* and dummy *be*, aspectual and passive auxiliaries, and other elements such as the emphatic modal *do* and the infinitival particle *to* precede and co-occur with a V position. Therefore, they are clearly in a node *other than* V (i.e., *D*). If a clause is overtly marked for tense and agreement features (i.e., [+Tns] & [+Agr]), it discharges these features in the first instance onto these elements in I rather than onto a lower V:

- (4) She *can* leave at once
 *She can leaves at once
- (5) He *is* baking a cake
 *He be bakings a cake
- (6) She *had* taken the course
 *She have takened the course
- (7) He *was* awakened by the noise
 *He be awakened by the noise
- (8) He *does* believe in that nonsense (emphatic modal *do*)
 *He do believes in that nonsense

(9) *Does she drink a lot?* (dummy *do*)⁵

*Drinks she a lot?

(10) He *is* a bore (dummy *be*)

*He a bore.

If a clause is not marked for tense and agreement (i.e., [-Tns] & [-Agr]) there are no features to discharge. Therefore, both the infinitival particle *to* in I as well as the following verb must be uninflected:

(11) She wants _s[PRO *to* see you] (I = [-Tns] & [-Agr])

*She wants _s[PRO *tos* see you]

*She wants _s[PRO *to sees* you]

(c) *I-inversion*: finite elements of I (modals, dummy *do* and dummy *be*, aspectual and passive auxiliaries) can transpose with the subject independently of the V node, therefore they can not *be in* the V position:

(12) I = *modal*

He *will* talk now

*Will*_i he *t*_i talk now?⁶

(I transposing with subject NP *he*; grammatical)

**Talk*_j he will *t*_j now?

(V transposing with subject NP *he*; ungrammatical)

(13) I = perfective auxiliary *have*

He *has* talked already

*Has*_i he *t*_i talked already?

**Talked*_j he has *t*_j already?

⁵*Do*-support and *be*-support are phenomena in English whereby at PF a 'dummy' auxiliary is inserted in the I node to carry the tense and agreement features of I, where I is finite (i.e., where I = [+Tns] and [+Agr]). This is necessary because Modern English (a) does not allow verb negation in negative constructions, only *auxiliary* negation (cf. **he eatsn't fish* vs. *he doesn't eat fish*); (b) does not allow direct subject-verb inversion, only subject-*auxiliary* inversion; **eats he fish?* vs. *does he eat fish?*); and (c) does not allow a direct subject-predicate link (cf. **the boy tall* vs. *the boy is tall*). The [+Tns] and [+Agr] features of I are discharged onto the dummy *do* or *be* auxiliary in I, which serves only as a carrier. When an aspectual or passive auxiliary occurs in I, this auxiliary also receives in the first instance the tense and agreement features of I, not the verbal participle (cf. *she is leaving now* vs. *she be leavings now*; *she has spoken about it* vs. **she have spokens about it*; *she was taken to hospital* vs. **she be takened to hospital*). (Cf. Chomsky 1957:62-67 on *do*-support, and, by extension, *be*-support. Also Chomsky 1988:9).

⁶Trace theory (cf. Chomsky 1975, Lightfoot 1976) suggests that when an argument is moved from its underlying position, it leaves behind a *trace* (*t*) which occupies the slot from which it was moved. This trace is bound (i.e., co-indexed) by its antecedent.

(14) I = progressive auxiliary *be*

She *is* leaving now

*Is*_i she *t*_i leaving now?

**Leaving*_j she is *t*_j now?

(15) I = passive auxiliary *be*

He *was* taken to hospital

*Was*_i he *t*_i taken to hospital

**Taken*_j he was *t*_j to hospital?

(16) I = *do*-support

He (*does*) eat fish on Friday

*Does*_i he *t*_i eat fish on Friday? (I transposing with subject NP *he*; grammatical)

**Eats*_j he *t*_j fish on Friday? (V transposing with subject NP *he*; ungrammatical)

(17) I = *be*-support

He *is* exuberant

*Is*_i he *t*_i exuberant?

**Exuberant*_j he is *t*_j?⁷

(d) *Negation of I* (not V): finite elements of I (modals, dummy *do* and dummy *be*, aspectual and passive auxiliaries) can be negated whereas the V node can not be negated:

(18) I *will not/won't* go

(modal *will*)

*I *will go not/gon't*

(19) He *is not/isn't* working at the moment.

(progressive *be*)

*He *is working not/is workingn't* at the moment.

(20) She *had not/hadn't* done it.

(perfective *have*)

*She *had done not/had donen't* it.

(21) He *was not/wasn't* arrested.

(passive *be*)

*He *was arrested not/was arresten't*.

⁷In copular constructions in English the V node is superfluous, as the dummy auxiliary in I (dummy *be* or other copula) carries the tense and agreement features of a finite I. Only this auxiliary licitly inverts with the subject. Like Vs, a predicate complement (in this case, the predicate adjective *exuberant*) can not invert with the subject.

(22) I *do not/don't* like the flowers. (dummy *do*)
 * I do *like not/liken't* the flowers.

(23) We *are not/aren't* vegetarians. (dummy *be*)
 *We *vegetarians not/vegetariansn't*⁸

(e) *Contraction of I with subject*: finite elements of I (modals, dummy *do* and dummy *be*, aspectual and passive auxiliaries) can be contracted with the subject noun, whereas the V node can not be contracted with the subject.

(24) *I'll* go with you. (modal *will*)
 **Igo* will *t* with you

(25) *He's* doing the accounts. (progressive *be*)
 **Hedoing* is *t* the accounts.

(26) *The dog's* eaten it. (perfective *have*)
 **The dogeaten* has *t* it.

(27) *It's* ruined. (passive *be*)
 **Iruined* is *t*.

(28) *D'you* see the hedgehog? (dummy *do*)
 **Seeyou* do *t* the hedgehog?

(29) *My sister's* a doctor. (dummy *be*)
 **My sintera doctor* is *t*.⁹

(f) (*Tag questions with I*): the I node can be repeated in tag questions, whereas the V node can not be repeated.

⁸In copular constructions the dummy auxiliary in I must receive the negation. Like Vs, the predicate complement (in this case, the predicate nominal *vegetarians*) can not be negated.

⁹In copular constructions the only licit subject-contraction is of the subject with the auxiliary in I: *my sister + is*. In general it can be observed that in English subjects may fuse only with their immediate constituent to the right (i.e., I). Contraction of the subject with a full verb or with a predicate complement (in the case of copular constructions) is thus illicit, as these constituents are not immediately to the right of the subject: **Seeyou do t the hedgehog?*; **my sintera doctor is t*.

(30) (a) You don't play squash, *do* you?
 *You don't play squash, *play* you?

(b) We'll get the order, *won't* we?
 *We'll get the order, *get* we?

(c) The players can't train in time, *can* they?
 *The players can't train in time, *train* they?

(g) *Presence of I in VP-Ellipsis*: the I node must be preserved in cases of ellipsis, whereas the V node can be dropped.

(31) (a) He might penalise you for that.
 He *might*.
 *He \emptyset penalise you for that.

(b) You should speak to him
 You *should*.
 *You \emptyset speak to him.

(c) It's inadvisable to take out a loan just now
 It's inadvisable to.
 *It's inadvisable \emptyset take out a loan just now.

(h) *Presence of I with emphatic particles so and too*: the I node is obligatory in constructions with emphatic *so* and *too*, whereas the V node can be dropped after these particles (cf. Chomsky 1957:66; Emonds 1976: 213-14, 1985:181).

(32) (a) I did *so* put out the rubbish.
 I did *so* \emptyset .
 *I *so*.

(b) He will *too* tell the truth.
 He will *too* \emptyset .
 *He *too*.

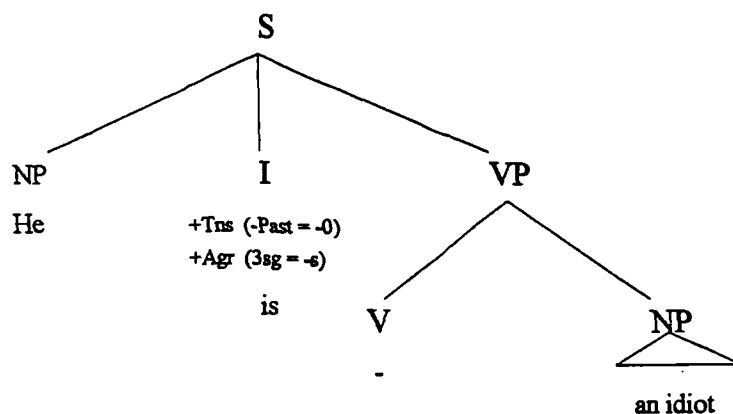
(i) *Morphemic Realisation of Tns & Agr at the level of phonological form (PF):*

if I is [+Tns] and [+Agr], there is an overt presence of tense and agreement on the auxiliary in I when I is [+Aux] (i.e., when I contains modal, dummy *do* or dummy *be*, aspectual or passive auxiliaries). If I is [-Aux], inflection is visited on the following verb in V.¹⁰

(33) He *is* an idiot

In example (33), the feature [+Tense] is realised on dummy *be* in I with a $-\emptyset$ inflection for [-Past] tense, whilst the [+Agreement] feature is realised on dummy *be* with an *-s* inflection for 3rd person singular (surfacing as the irregular 3sg form *is*):

(33')

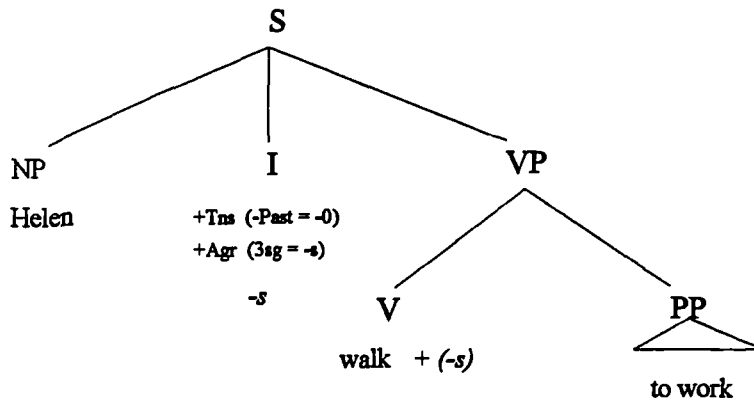


In example (34) (a), the feature [+Tense] is realised on the full verb in V with a $-\emptyset$ inflection for [-Past] tense, whilst the [+Agreement] feature is realised on V with an *-s* inflection for 3rd person singular:¹¹

¹⁰In GB-theory modals and the dummy auxiliaries *be* and *do* of English are assumed to be generated in I at the level of PF, where they inflect upon receipt of the discharged [+Tns] and [+Agr] features of I (cf. Chomsky 1988:9, Pollock 1989:398-9.) Aspectual *have* and *be* (and presumably passive *be*) auxiliaries are assumed to 'raise' from V to I in order to receive its [+Tns] and [+Agr] features at PF; whilst I 'lowers' to V in the case of full verbs (cf. Emonds 1978, 1985; Koopman 1984; Chomsky 1986b on early notions of *V-to-I* raising or *V-raising*, and cf. Chomsky 1988:5; Pollock 1989:398 on the restriction of *V-raising* to *Aux-raising* in English).

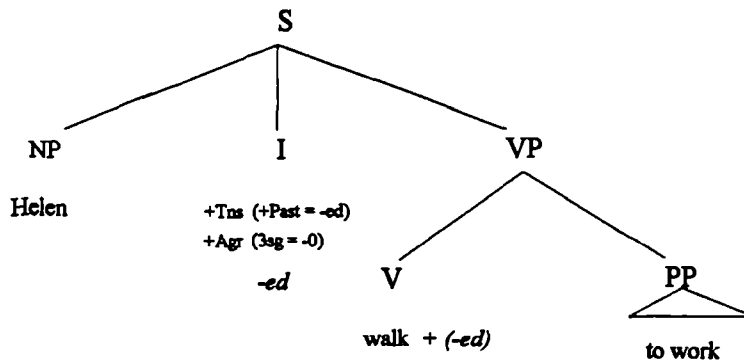
¹¹In GB-theory the *-s* inflection of a finite I in English is assumed to 'lower' onto full verbs, where it produces the inflection at PF (cf. Chomsky 1957, 1964, 1973 on affix-hopping; Emonds 1978, 1985 on I-lowering in English and V-raising in French; Chomsky 1988 and Pollock 1989 on I-lowering and V-raising for English and French in the current GB model). I follow Emonds (1985:227; 1986:272; 1987:615; 1994:166) in taking inflectional morphemes to be syntactic features which are 'alternatively realised' (i.e., phonologically overt) on a sister constituent at PF, rather than as actual morphemes which are 'lowered' prior to PF. Emonds' principle of *Alternative Realisation* is discussed in sections 2.4. and 3.3.3.3.

(34) (a) Helen walks to work



In example (34) (b), [+Tense] is realised on V with an *-ed* inflection for [+Past]; whilst the [+Agreement] feature is realised on V with a \emptyset inflection for 3sg:

(34) (b) Helen *walked* to work



Contrasting with examples (33) and (34), if I is [-Tns] and [-Agr], as in the subjunctive and *to*-infinitive examples in (35) below, there is an absence of both tense and agreement on the verb. This is because there are no tense and agreement features in I to be discharged.

(35)

(a) God *save* the Queen

*God *saves* the Queen

(b) (God) *bless* you!

*(God) *blesses* you!

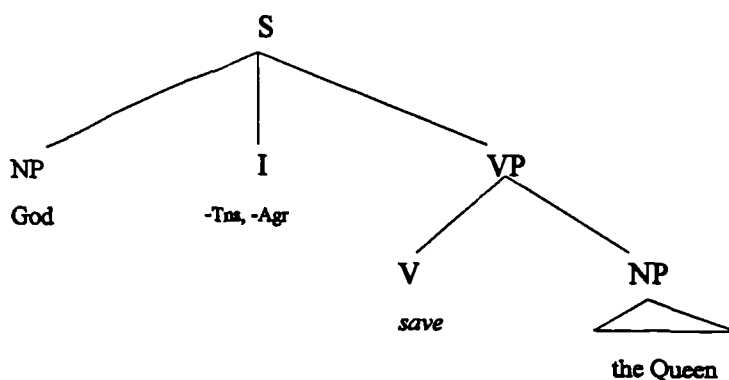
(c) Heaven *forbid*!

*Heaven *forbids*!

- (d) The executive board insists that s [he *resign* at once]
 ♣ The executive board insists that s [he *resigns* at once]¹² (indicative not subjunctive)
- (e) If s [I *were* rich]
 *If s [I *am* rich]
- (f) we demand that s [she *be* chosen for the post]
 ?we demand that s [she *is* chosen for the post]
- (g) s [PRO *to* leave now] is pointless
 * s [PRO *tos* leave now] is pointless
- (h) He wants s [PRO *to* go]
 * He wants s [PRO *tos* go]

This lack of inflection in the subjunctive mood because of a nonfinite I in English is illustrated in figures (36) to (41) below. The main verbs *save*, *bless*, *forbid*, and *resign* in V remain uninflected in their subjunctive forms.¹³ And in the subjunctive the auxiliary *be* does not inflect when inserted in I, because I is [-Tns] and [-Agr]. Thus in figure (40), passive *be* simply remains in its uninflected base form, and in figure (41), dummy *be* becomes *were* (a *fossilised* rather than a tensed form, as evident from the lack of agreement with the subject *I*).

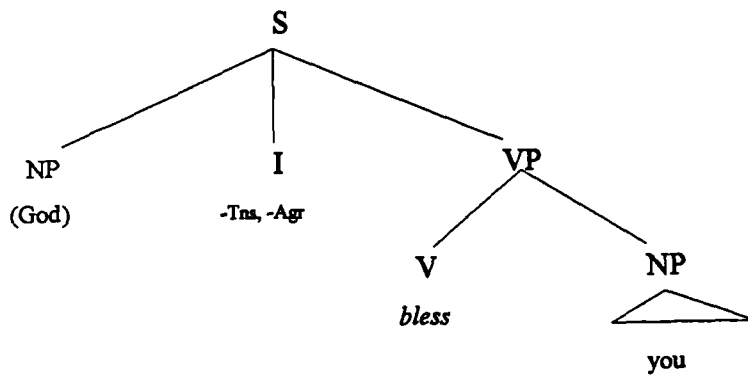
(36)



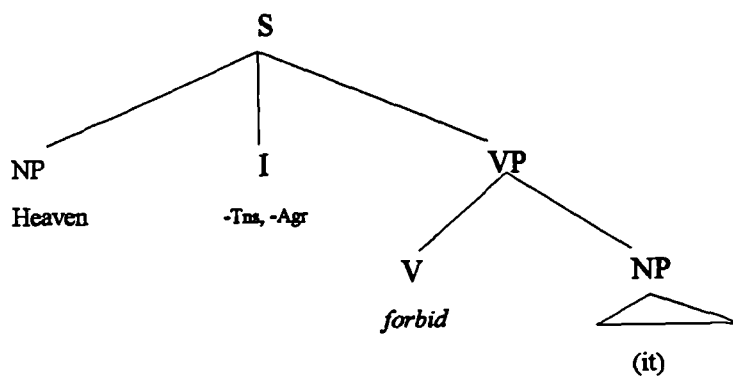
¹²The symbol ♣ is used to indicate that grammaticality is not an issue here; the tagged sentence is in the *indicative* rather than the subjunctive mood.

¹³Examples (36) - (38) are taken from Quirk et. al. (1985:839).

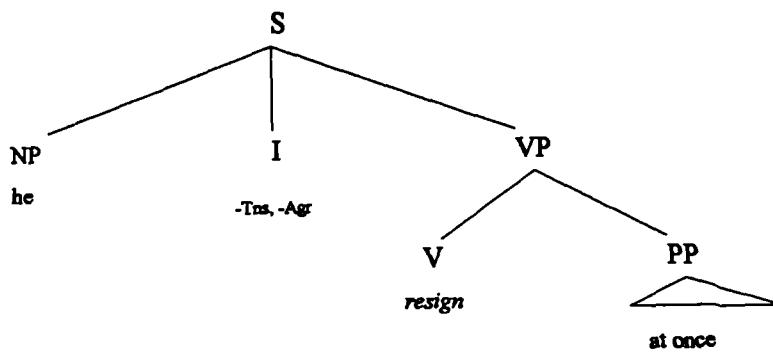
(37)



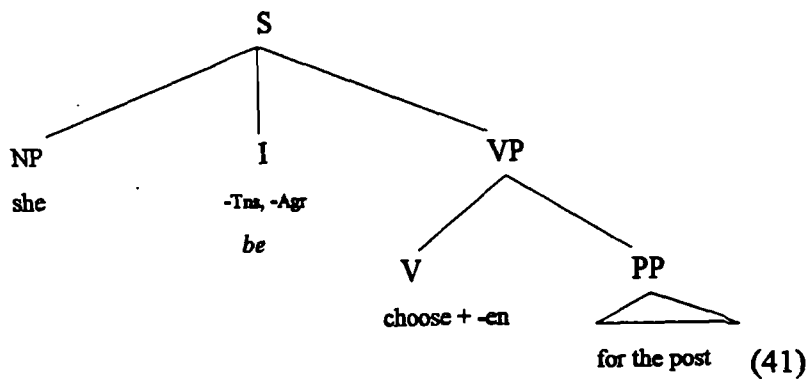
(38)



(39)

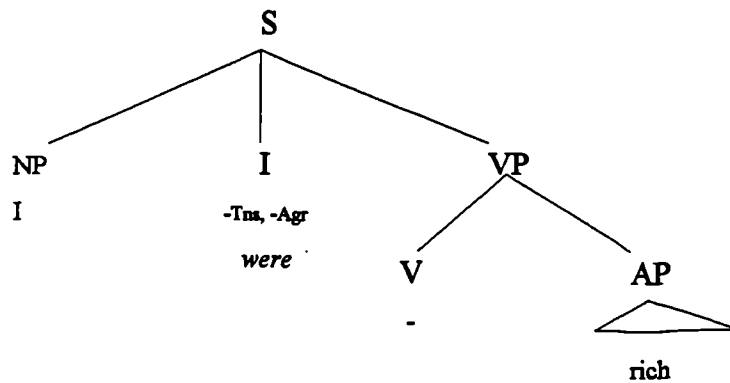


(40)

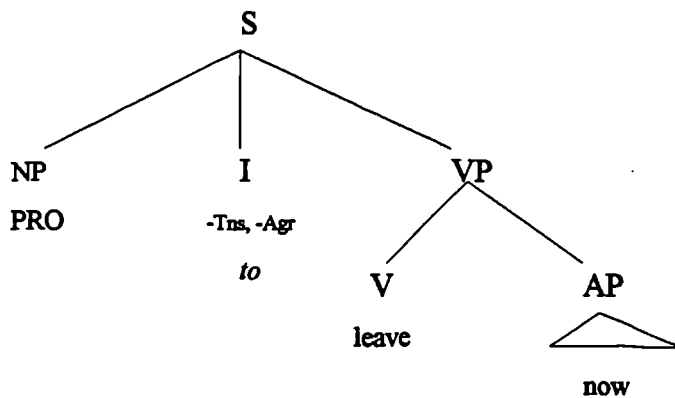


(41)

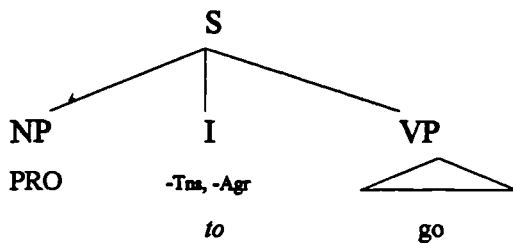
(41)



(42)



(43)



We have observed that in the above figures (36) - (43), a verb in V or the auxiliary or particle in I is uninflected in each case, because I is devoid of any features to discharge. Hence there is a distinguishing lack of tense and agreement features in English subjunctives and in *to*-infinitives, as the data in (35) confirm.

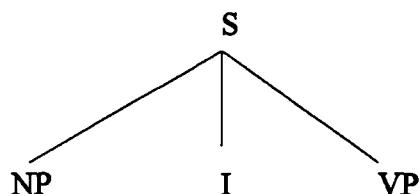
1.1.1.2. The Uniformity of IP

Because of the evidence in section 1.1.1. that the independent Tns and Agr features of the I position determine inflection on the verb, the node I is postulated as identifying the *nature* of a clause as [\pm Finite] (tensed clauses are [+Finite]; *to*-infinitives and

subjunctives are [-Finite]). As such, the I category determines the type of clausal structure and may be construed as its *head*.

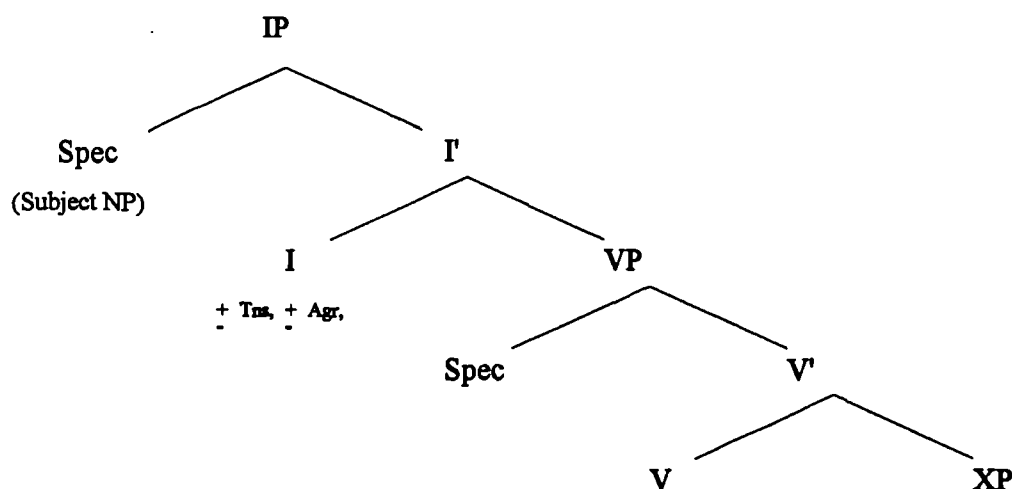
With this perspective, we see that figure (52) is hardly an adequate representation of the importance of I or of any head relation:

(52)



Chomsky (1986b:3ff.) brought this asymmetric analysis of a sentence into line by arguing that *S* (Sentence) is not headless, but rather is headed by *I* (Inflection). Therefore, the realigned structure for the sentence in the *Barriers* GB-model became:

(53) **IP** (Inflection Phrase)



The head *I* projects to *I'* and ultimately to *IP* (*Inflection Phrase*). This is a conventional expansion in X-bar theory, where any head projects to a maximal projection according to the schema in figure (1). Therefore, figure (53) falls squarely within the X-bar schema, and a sentential analysis becomes less idiosyncratic.

It is important to note from figure (53) two things: firstly, the specifier position in the *Barriers* model is deemed to be an X^2 node (i.e., a *phrasal* or *maximal* node; cf. Chomsky 1986b:3). Therefore, both specifiers and complements of the head (*I*, in this case) are X^2 positions. The specifier to *I* in the sentence is the NP subject and the complement

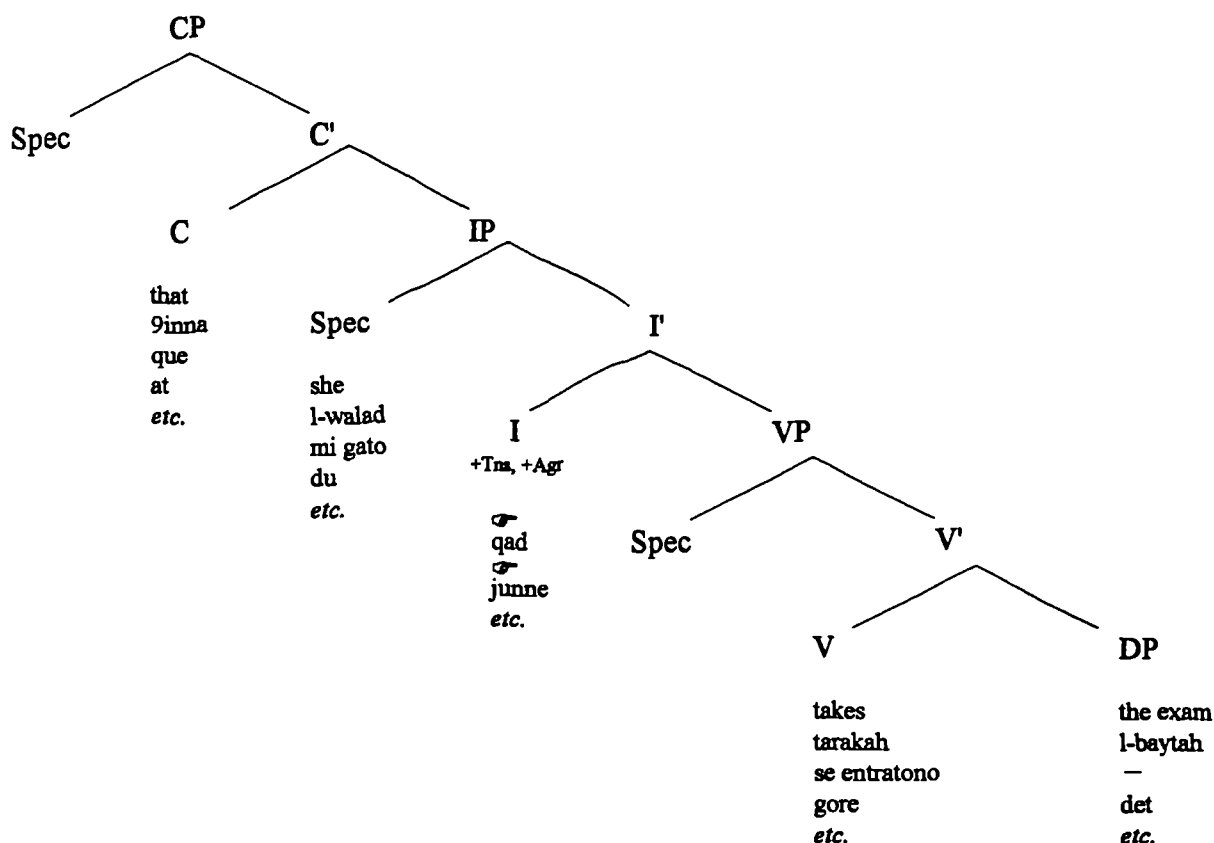
- (i) *At* du junne gøre det! Danish
That you could do it
How could you do such a thing!
- (j) *Qu'elle* est bavarde! French
That she is talkative
How talkative she is!
- (k) *Að* María skuli elska Jón! Icelandic
That Mary shall-Subjunctive love John
That Mary should love John!
- (l) *Daß* du ja die Füße vom Tisch läßt German
That you yes the feet off table keep
Keep your feet off the table
- (m) *Che* vengano tutti Italian
That come all
Let them all come
- (n) *Hwæðer* ge nu secan gold on treowum? Old English
Whether you now seek gold in trees?
Do you now seek gold in trees?
- (o) *Kas* suitsetate? Estonian
Whether you-smoke?
Do you smoke?
- (p) *An* bpósfaidh tú me? Irish
Whether will-marry you me?
Will you marry me?
- (q) *Tsi* hot er geleient dos bux? Yiddish
Whether has he read the book?
Has he read the book?

The notion of a C element dates back to various researchers. Bresnan (1970) suggests that C plus the core sentential unit of NP I VP is equivalent to an expanded S, or *S-bar*:
s[C S].¹⁶ Emonds (1976:142) and Soames and Perlmutter (1979:63) place a COMP

¹⁶Bresnan's *S'* notation in turn derives from Chomsky's (1970:164) bar notation system for phrases.

node internal to an embedded S: $s[C NP I VP]$. In the *Barriers* model, where IP is the sentential unit, Comp (C) becomes the *supra* head of the sentence: $_{CP}[C IP]$. C takes IP as its complement and projects to CP: $_{CP}[Spec C']$. This is illustrated in figure (55).

(55) CP (Complementiser Phrase)¹⁶



Some evidence for the existence of an external C node comes from coordination and ellipsis phenomena.

- (56) (a) There is no doubt but that the committee will refuse our request
 (b) *There is no doubt but the committee will refuse our request

When two clauses are conjoined by *but* as in (56), it is the CP *that the committee will refuse our request* that must be conjoined by *but*, not the IP *the committee will refuse our request*. As only *like* constituents can be conjoined (cf Chomsky 1975:224 on the *simple coordination test*), a CP projection with an empty C is implied for the first clause *there is no doubt*. Two CP clauses are thus conjoining to form a third, super CP:

¹⁶The symbol σ indicates that the [+Tns] and [+Agr] features of I are realised on the head V to the right. In the case of the modals *qad* (emphatic 'did') and *junne* ('could'), the [+Tns] and [+Agr] features of I are realised on these modals in the first instance (cf. 1.1.1.1. (b)).

(56) (c) $_{CP} [C [C^e \text{ IP} [\text{there is no doubt}]]]$ but $_{CP} [C [\text{that } \text{IP} [\text{the committee } \text{IP} [\text{will refuse our request}]]]]$

Ellipsis phenomena produce an opposite result to (56). When two clauses conjoin as in (57), the second conjunct can omit its verb by 'gapping' (i.e., leaving a gap) only if two **IP** constituents conjoin.

- (57) (a) He queried whether Harry wanted wine and Bert ___ beer
 (b) *He queried whether Harry wanted wine and whether Bert ___ beer

In (57) (a), the **IP** *Bert ___ beer* must be conjoined to the **IP** *Harry wanted wine*; the conjunction *and* cannot licitly conjoin two **CP**s in this case. The conjunction of *Harry wanted wine* and *Bert ___ beer* occurs internal to the embedded clause beginning with *whether*, thus generating a super **IP** *within CP*:

(57) (c) $_{CP} [C [\text{whether } \text{IP} [\text{Harry wanted wine}] \text{ and } \text{IP} [\text{Bert ___ beer}]]]$

The insertion-site and landing-site of constituents is motivated by the *Structure Preservation Constraint* (Emonds 1976:3-5, 1985:127, 138-9). Structure Preservation prescribes that a constituent **C** which is introduced into a node **C** must be of a *like* categorial type: i.e., in order to preserve structure throughout a derivation, syntactic categories can only be inserted in or moved to, *or adjoined to* (my addition), a node if they are of the same categorial status as that node.¹⁷ Hence the **C** node is constrained to accommodate **C**⁰ complementisers and preposed (i.e., *fronted*) **I**⁰ elements such as dummy *do* and dummy *be* and modals: e.g., $_{C} [do_i \text{ IP} [you \ t_i \ smoke]]?$ $_{C} [Is_i \text{ IP} [he \ t_i \ a \ teacher]]?$ $_{C} [Could_i \text{ IP} [he \ t_i \ ride \ the \ bicycle]]?$

Because **C**⁰ occurs together with preposed phrases of various categorial description, the specifier position of **CP** (an **X**² position) is proposed as the landing-site of these moved constituents (cf. Koopman 1984; Chomsky 1986b). In (58) we observe that [**Spec,CP**] accommodates such **X**^{max} as interrogative *wh*-phrases. The *wh*-phrases occur in a position exterior to **C** but interior to **CP**. Some evidence that *wh*-movement moves constituents out of **IP** is that, when *wh*-phrases vacate their underlying position, only the trace of the moved *wh*-constituent can occupy the extraction site in **IP**.

¹⁷In Emonds' 1976 formulation of structure preservation, a constituent **C** had to be of the same categorial type as the node in which it was being inserted or moved to. In the *Barriers* model, however, the Structure Preservation Constraint is loosened somewhat, to allow categories of different type but of the same categorial level (i.e., **X**⁰, **XP**) to be inserted in or moved to a particular node. Thus such processes as **I**⁰-to-**C**⁰ movement are licit in the *Barriers*' expanded sense of structure preservation. We adopt here the *Barriers*' sense of structure preservation, and adapt it to include *adjunction* to a particular node as well.

(58)

- (a) ${}_{CP}[Who_i \ C[can_j \ IP[t_i \ \Gamma[t_j \ VP[t_i \ v[read \ DP[the \ inscription]]]]]]?^{18}$
 $*{}_{CP}[Who_i \ C[can_j \ IP[t_i \ \Gamma[t_k \ VP[t_i \ John_k \ v[read \ DP[the \ inscription]]]]]]?$
- (b) ${}_{CP}[What_i \ C[do_j \ IP[you_k \ \Gamma[t_j \ VP[t_k \ v[say \ t_i \]]]]]?$
 $*{}_{CP}[What_i \ C[do_j \ IP[you_k \ \Gamma[t_j \ VP[t_k \ v[say \ t_i \ your \ idea_i \]]]]]?$

Preposed NP, VP, AP, and PP complements in English clauses also move into the [Spec,CP] node, as topicalised phrases. Such phrases can prepose in most dialects with phonetic stress on the emphasised element (indicated in bold); in other dialects, inversions occur more freely.

(59)

- (a) ${}_{CP}[NP[Such \ arrogance]_i \ C[does_j \ IP[he_i \ \Gamma[t_j \ VP[t_i \ v[show \ t_i \]]]]]!$
- (b) ${}_{CP}[VP[Drinking \ lager]_i \ C[are_j \ IP[you_k \ \Gamma[t_j \ VP[t_k \ v[t_i \]]]]]?$
- (c) ${}_{CP}[AP[So \ wealthy]_i \ C[might_j \ IP[we_k \ \Gamma[t_j \ VP[t_k \ v[have \ become \ t_i \]]]]]!$
- (d) ${}_{CP}[PP[In \ the \ loft]_i \ C[will_j \ IP[you_k \ \Gamma[t_j \ VP[t_k \ v[put \ it \ t_i \]]]]]?$

And X^{max} adjuncts also utilise [Spec,CP], as topicalised phrases:

(59)

- (e) ${}_{CP}[PP[As \ chairman]_i \ C[does_k \ IP[he_i \ \Gamma[t_k \ VP[t_i \ v[make \ that \ claim \ t_i \]]]]]?$
- (f) $?{}_{CP}[AP[Loud]_i \ C[can_k \ IP[you_l \ \Gamma[t_k \ VP[t_i \ v[tolerate \ my \ radio \ t_i \]]]]]?$
- (g) $?{}_{CP}[AdvP[Quickly]_i \ C[must_k \ IP[you_l \ \Gamma[t_k \ VP[t_i \ v[pay \ back \ the \ money \ t_i \]]]]]?$
- (h) ${}_{CP}[NegP[Never]_i \ C[would_j \ IP[she_k \ \Gamma[t_j \ t_i \ VP[t_k \ v[ask \ why]]]]!$

Emonds (1976:40-3) notes that both *wh*-phrases and topicalised X^{max} are *substitutions* for an otherwise empty (specifier) position.¹⁹ Structure Preservation requires that all of these X^{max} elements are constrained to move into the [Spec,CP] position; as such, they exclude other preposed topic phrases from the same position. This is shown at length in (60).

¹⁸The underlying position of subject nominals is discussed in section 1.2.2.

¹⁹Emonds actually puts fronted phrasal constituents into a COMP node; in the current CP framework, these elements move into [Spec,CP].

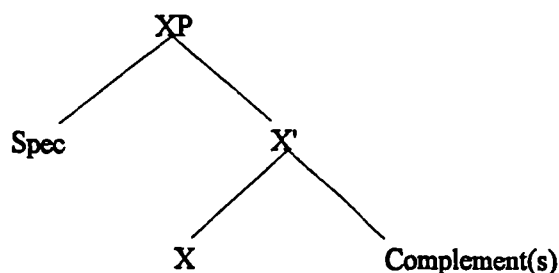
- (60)
- (a) * $_{CP} [Who_i DP [Ian]_j C [can_k IP [t_i r [t_k VP [t_i t_j v [read DP [the inscription]]]]]]]]?^{20}$
- (b) * $_{CP} [What_i DP [your answer]_j C [do_k IP [you_l r [t_k VP [t_l v [say DP [t_i t_j]]]]]]]?]$
- (c) * $_{CP} [DP [Which person]_i DP [who]_j C [can_k IP [you_l r [t_k VP [t_l v [trust t_i t_j]]]]]]]?]$
- (d) * $_{CP} [PP [In which capacity]_i DP [that claim]_j C [does_k IP [he_l r [t_k VP [t_l v [make t_j t_i]]]]]]]?]$
- (e) * $_{CP} [AP [How loud]_i DP [my radio]_j C [can_k IP [you_l r [t_k VP [t_l v [tolerate t_j t_i]]]]]]]?]$
- (f) * $_{CP} [AdvP [How quickly]_i DP [the money]_j C [must_k IP [you_l r [t_k VP [t_l v [pay back t_j t_i]]]]]]]?]$
- (g) * $_{CP} [NegP [Never]_i AdvP [why]_j C [would_k IP [she_l r [t_k t_i VP [t_l v [ask t_j]]]]]]]!]$
- (h) * $_{CP} [[NP [Such arrogance]_i PP [on most occasions]_j C [does_k IP [he_l r [t_k VP [t_l v [show t_i t_j]]]]]]]!]$
- (i) * $_{CP} [VP [Drinking lager]_i AdvP [today]_j C [are_k IP [you_l r [t_k VP [t_l v [t_i t_j]]]]]]]?]$
- (j) * $_{CP} [AP [So wealthy]_i PP [for the rest of our lives]_j C [might_k IP [we_l r [t_k VP [t_l v [have become t_i t_j]]]]]]]?]$
- (k) * $_{CP} [PP [In the loft]_i AdvP [where]_j C [will_k IP [you_l r [t_k VP [t_l v [put it t_i t_j]]]]]]]?]$

We summarise this section by reiterating that I with its [\pm Tns] & [\pm Agr] features heads the sentence and signifies a *finite* or *nonfinite* clause, whilst C with its [\pm Comp] feature heads CP and signifies the possible presence of an introductory *complementiser* for the clause. This concludes our standardisation of sentential analyses into IP and CP.

1.2. Remaining discrepancies in X-bar structure

Recall the standard X-bar schema of figure (1):

(1)



²⁰The underlying position of subject nominals is discussed in section 1.2.2.

In general, this concept of hierarchical phrasal structure has won wide acceptance in the literature since Chomsky's *Remarks on Nominalisation* (1970) and Jackendoff's *X-Bar Syntax* (1977). Furthermore, because of the structural schema put forward in these two works, both the contents of the head X position and the contents of the complement position are fairly predictable. The head X is a variable representing any of the lexical categories *Noun (N)*, *Verb (V)*, *Adjective (A)*, or *Preposition (P)*. Since the publication of *Barriers*, the notion of a head X has increasingly expanded to include functional morphemes such as *Complementiser (C)*, *Inflection (I)*, *Determiner (D)*, *Tense (T)*, *Agreement (Agr)*, *Aspect (Asp)*, *Negation (Neg)*, *Number (Num)*, etc. The only restriction on heads seems to be that they do not dominate any other category and are thus themselves an irreducible (i.e., a *zero-level* or X^0) category (cf. Chomsky 1986b:2). Complements follow a similar pattern in that they too can be any lexical or functional category such as *NP*, *VP*, *AP*, *PP*, or *CP*, *IP*, *DP*, *TP*, *AgrP*, *AspP*, *NegP*, *NumP*. The only restriction on complements are that they be of a phrasal level (i.e. *maximal* or X^2) and that they be subcategorised for by the head X^0 . The examples in (61) illustrate the head-complement distinction.

(61)

NP[men	Complement PP[of iron]]	head <i>men</i> = N, _____ PP
VP[wish	Complement CP[that he would come home]	head <i>wish</i> = V, _____ CP
AP[sick	Complement PP[at heart]]	head <i>sick</i> = A, _____ PP
PP[under	Complement DP[the bridge]]	head <i>under</i> = P, _____ DP
DP[the	Complement NP[matter in dispute]]	head <i>the</i> = D, _____ NP
CP[that	Complement IP[he would come home]]	head <i>that</i> = C, _____ IP
IP[do	Complement NegP[not go with him]]	head <i>do</i> = Aux (I), _____ NegP
NegP[not	Complement VP[go with him]]	head <i>not</i> = Neg, _____ VP

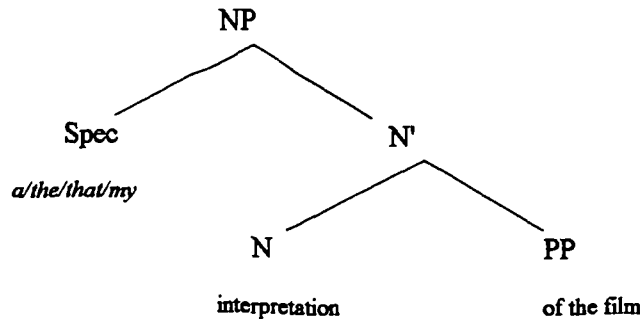
In each case the head X^0 takes a phrasal X^2 complement, in accordance with the licit patterns of X-bar theory.

1.2.1. The specifier node

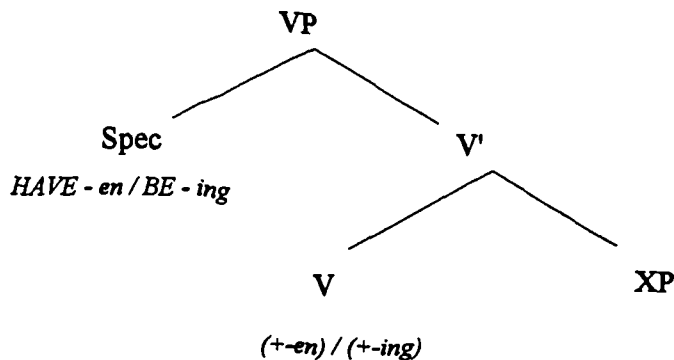
Although there is a uniform predictability for the contents of the head and complement positions in X-bar theory, the internal structure of X^{\max} still remains somewhat controversial with respect to the contents of the *specifier* node. The contents of the specifier position at both the base and superficial levels vary considerably across analyses. Various morphemes have been hypothesised to be housed in [Spec,XP],

such as determiners in [Spec,NP]; aspectual auxiliaries in [Spec,VP]; degree phrases and comparative/superlative morphemes in [Spec,AP]; and measure phrases, adjectival/adverbial phrases, and prepositional phrases in [Spec,PP]. This is shown in figures (62)-(65):

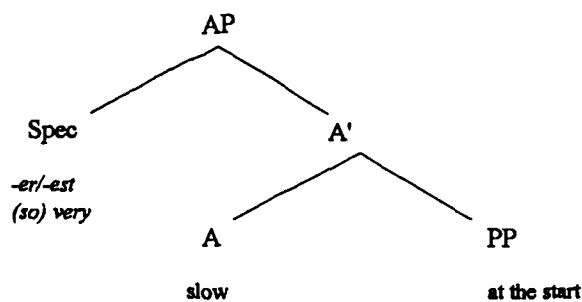
(62) The specifier position of NP²¹



(63) The specifier position of VP²²



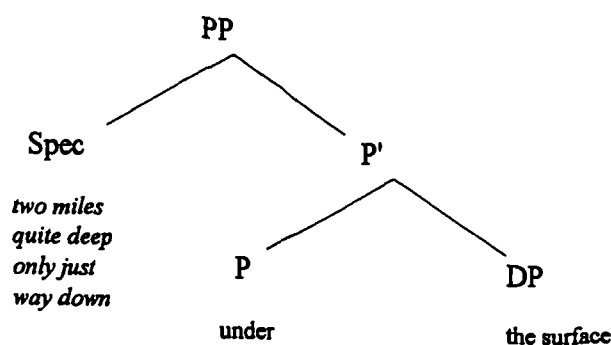
(64) The specifier position of AP²³



²¹Cf. Chomsky (1970:154, 164) on determiners in [Spec,NP].

²²Cf. Jackendoff (1977:48-50, 54) on aspectual auxiliaries in [Spec,VP].

²³Cf. Jackendoff (1977:14, 146-7) and Emonds (1986:260-5, 280-1) on degree phrases in [Spec,AP]; Emonds 1985:161 on comparative and superlative morphemes in [Spec,AP]; Bresnan (1972:228-258), (1973:276-89) and Berman (1974: 108-114) for the early notion of comparative morphemes in a [Spec,QP] position dominated by an AP. (QP = 'quantifier phrase'; cf. fn. 25).

(65) The specifier position of PP²⁴

A difficulty with these analyses is that they are all ultimately asymmetric; virtually anything can occupy the [Spec,XP] node with little standardisation or predictability across analyses. That is to say, there is not a consistent categorial *level* of the specifier node; in some cases it is a head (X^0) category and in some cases it is a phrasal (X^2) category. This is a problem because, as we saw in section 1.1.1.2., the *Barriers* model (Chomsky 1986b:3-4) seeks to regulate the internal structure of all maximal projections within X-bar theory by standardising the problematic *S* category.

If the specifier position is an X^2 node, it can only house *phrasal* categories. With this understanding we see that the variable analyses in figures (62) - (65) are inconsistent because they exhibit both X^0 and X^2 elements in the [Spec,XP] node: NP and VP have X^0 in their Specs, AP has both X^0 (-er/-est) and X^2 ($_{DegP}$ [(so) very]) in its Spec, and PP has X^2 .²⁵ At the very least this violates Structure Preservation. If we accept uniformity of the X' schema as a desirable step, then surely such a serious discrepancy as is apparent in figures (62) - (65) is undesirable.

1.2.2. Specifiers as subjects

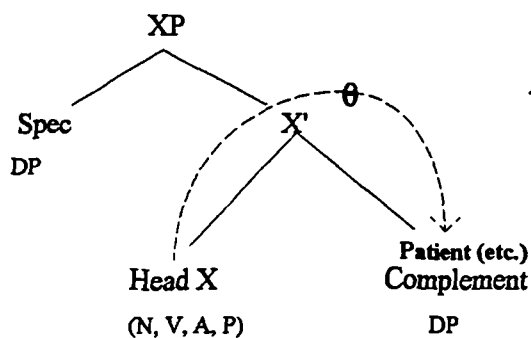
Stowell (1981, 1983) radically altered the nature of the specifier node for X^{\max} by arguing that the specifier node across categories is primarily occupied by a nominal (NP) subject. I adopt here Abney's 1987 'DP-Analysis' in reanalysing NPs as DPs, so that NPs will henceforth be notated as DPs.

²⁴Cf. van Riemsdijk 1978:45-8 on measure phrases, adjectival/adverbial phrases, and prepositional phrases in [Spec,PP].

²⁵ $_{DegP}$ is the notation for 'degree phrase', as proposed by Jackendoff (1977:143) to notate the elements that were classified as [Spec,QP] in Bresnan's (1972:229-30) formulation. Jackendoff's *Deg* category includes elements such as *so, too, as, very, how*, non-demonstrative *this, that*, etc. that can precede *Qs* (quantifiers) such as *each, every, any, all, no, many, few, much, little, (non-determiner) some, enough*, etc. (cf. Jackendoff 1977:104, 143, 146-7; Bresnan 1973:289; 1972:229-30).

The motivation for Stowell's 'Subject Specifier' hypothesis is theta theory. A lexical category (N, V, A, or P) assigns a semantic role or theme such as Agent, Possessor, Patient, Goal, etc. to elements that it enters into semantic relationships with. The semantic roles that a lexical category assigns are called *thematic roles* or *theta roles* (*θ-roles*), and a *θ*-marked constituent is known as an *argument*. Figure (66) shows how *θ*-marking conventionally works in theta theory:

(66)



θ-marking involves *government* (cf. Chomsky 1980:25). Government is the abstract relationship whereby a head X^0 category requires and controls another category Y^0 or Y^2 , with no intervening category between X and Y. The governing head X combines with its governee Y to project to the next higher level (e.g., X' and XP). In figure (66), X immediately governs the DP to the right, with which it projects to form X' . X' then governs the DP to the left, with which it projects to form XP. We see from figure (66) that whilst *θ*-marking of the complement DP is strictly local (i.e., within the immediate dominance of X), *θ*-marking of the subject DP is not within the boundaries of strict locality for *θ*-marking (i.e., it is outside of the head-complement relation).²⁶ However, *θ*-marking of the subject DP is local with respect to the maximal projection of X; i.e., it is within the maximal domain of X (i.e., XP). Based on the concept of *minimality* (Chomsky 1986b:10) that the closest governor governs (in this case, *θ*-government), the head X must *θ*-mark the subject DP, as it governs this (Spec) position.²⁷

θ-marking of DPs in figure (66) is important for the following reason. The two principal licensing mechanisms in GB-theory we can take to be *θ*-assignment and Case-assignment. This derives from the Visibility Condition, which stipulates that an element

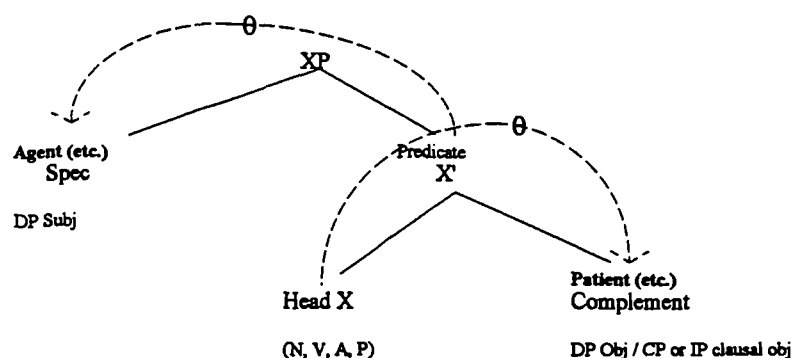
²⁶Chomsky (1965:100-3) defines *strictly local* as a syntactic process (in this case *θ*-marking) which occurs within a substring dominated by only one higher category, and suggests that the V-Complement relation is the most 'cohesive' one because of direct dominance by V('). I am extending this notion of *cohesion* to the relation between any category of head and its complement.

²⁷*θ*-government is the syntactic relationship whereby a lexical head governs a specific node and assigns a *θ*-role to this node (cf. Chomsky 1986b:17).

is 'visible' for θ -marking only if it is in a position to which Case is assigned (cf. Chomsky 1986a:94). The Case Filter states that Case is a surface phenomenon (i.e., that *phonetically* realised DPs must have Case; cf. Chomsky 1981:49, 94). Therefore, if θ -assignment at D-structure precedes Case-assignment at S-structure, then DP arguments must be licensed in the first instance by receiving a θ -role.

Predicates assign θ -roles, and arguments receive them (cf. Chomsky 1986a: 101). Theta theory prescribes that θ -assignment is a local operation (cf. the Sisterhood Condition on θ -government, Chomsky 1986b:19). DP arguments occur only as subjects or objects to θ -marking lexical heads; therefore, they must be θ -marked to the right or to the left of the θ -marking predicate. This revised directional θ -marking is shown in figure (67):

(67)

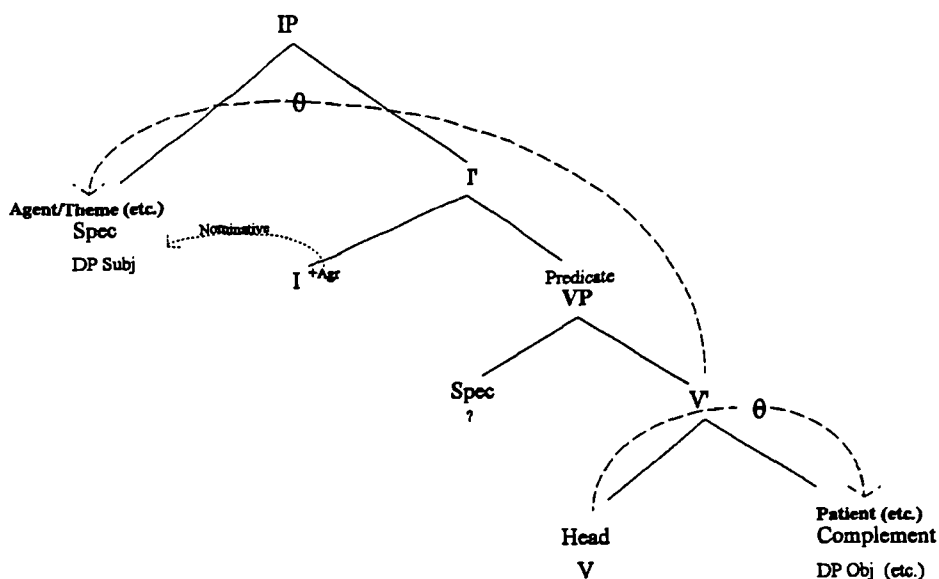


According to this account, lexical heads assign θ -roles rightwards to complement objects and clauses, and lexical X' composites assign θ -roles *leftwards* to subjects (cf. Radford 1990: 45-6; Chomsky 1986a:59-60). X' composites are *predicates* in this framework, and specifiers are typically DP *subjects* (for other elements in [Spec,CP], see section 1.5. (iii) below).

If theta theory respects the locality of θ -assignment, it must respect the minimality of θ -government (i.e., that the closest or most 'minimal' governor (θ -) governs). Therefore, we reject here other analyses where the subject DP is an 'external' argument, i.e., external to a maximal projection predicate, which would violate minimality.²⁸ This is the traditional view in GB-theory, where subjects of clauses are external arguments (cf. Chomsky 1981:37-8, 1986a:59-60, 1986b:13-14):

²⁸Williams (1980b:22-27) coined the terms 'external argument' of the verb for the *subject* and 'internal argument' of the verb for the *complement(s)*. We can retain the distinction by utilising 'internal' to mean internal to the head-complement relation (i.e., internal to X') and 'external' to mean external to X' but internal to XP .

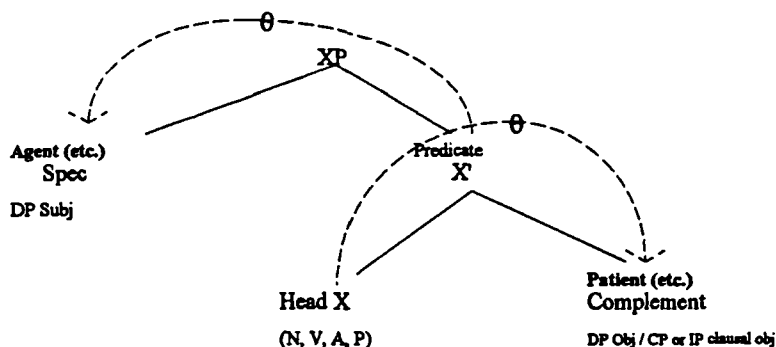
(68)



In figure (68) we see that the V' predicate putatively assigns a θ -role leftwards to the DP subject over an X^{\max} (VP). But this violates both the locality of theta theory and the minimality of θ -government, and so is an unattractive analysis.²⁹ Case theory is satisfied in (68) but not theta theory.³⁰ We conclude, therefore, that the licensing (i.e., the licit occurrence) of the subject DP in figure (68) is suspect.

Let us return to figure (67):

(67)



²⁹Applying minimality to the context of figure (68), I is the closest governor to the DP subject *John* and so should θ -govern it. But I can not θ -govern *John* because I is not a lexical category and so has no θ -roles to assign. Hence the proposal in GB-theory that the lower V' composite assigns a θ -role to *John* over the intervening VP (Chomsky 1981:37-8, 1986a:59-60, 1986b:13-14). An X^{\max} (VP is this case) is called a *barrier* to external governors because the head of XP is always the closest (i.e., minimal) governor to any of its arguments (cf. Chomsky 1986b:8).

³⁰In current GB-theory, Agr of I is thought to assign nominative Case to the subject (cf. Chomsky 1981: 52, 1986a:188, 1986b:24; Koopman and Sportiche 1991:231; Hermon 1992:177; Ritter 1988:914; Rouveret 1991:375; Ouhalla 1991:120). In earlier GB theorising, Tns of I was thought to be the nominative Case-assigner (cf. Chomsky 1981:52,162; Horrocks 1987:105,114; Cook 1988:137-8; Sells 1985:53).

If we accept that the DP in specifier position is the *subject* of the phrase in (67) and its X' sister the *predicate*, we have a fully symmetric interpretation of the *Barriers* schema of $XP = \text{Spec } X'$, where Spec is the subject of X (cf. Chomsky 1986b:3; the notation DP^* represents the subject or object nominal of the head X, depending on its location in the string).

(69) $XP = DP^* X'$ *or* $XP[DP^*[Subj]] X'[Pred]$

I note here that the terms 'specifier' and 'subject' are terms for *grammatical function* whilst 'DP*' is the term for the grammatical *category* realising this position (cf. Chomsky 1982:5).

1.3. Base vs. Late Lexical Insertion

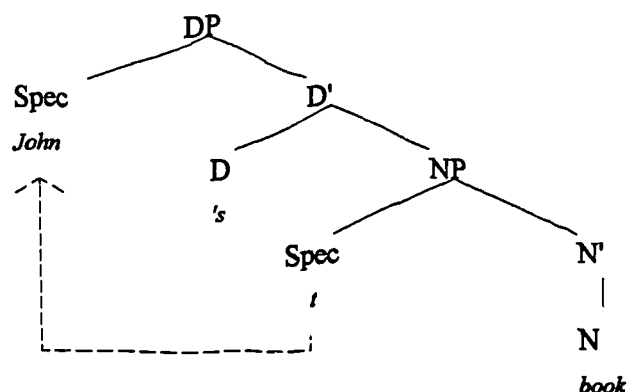
Now consider the underlying structures in (70) which illustrate subject specifiers across categories (cf. Stowell 1981:257; Stowell 1983:297):

- (70) (a) She NEED $NP[John]_N[book]$
 (b) I CONSIDER $AP[John]_A[stupid]$
 (c) I EXPECT $PP[(that) man]_P[off (my) ship]$
 (d) We FEAR(-ed) $VP[John]_V[kill(-ed) t]$

The complement clauses in each of these examples are 'pure' representations of underlying θ -structure (i.e., *thematically relevant* D-structures; cf. Chomsky 1982:9).³¹ They are traditionally labelled 'small' clauses because they lack copular or inflectional elements (Chomsky 1981:107); the parenthesised elements are PF insertions (i.e., morphemes inserted at the post-S-structure level of PF; cf. 'do-support' and 'be-support' of fns. 5 and 10). However, in Stowell's framework, the 'small' clause D-structures in (70) are *exactly correct* (Stowell 1981:258). In the first example, *John* is the subject of *book* at D-structure. Under the DP-Analysis (Abney 1987), *John* becomes possessivised by the insertion of *Poss 's* in **D** to derive $DP[John]_D['s NP[t]_N[book]]$ at PF:

³¹In GB-theory the Passive in English is formed by the movement of an underlying Patient argument from the grammatical object position into an empty grammatical *subject* position and by applying passive morphology (i.e., *BE* + *-en*) to the verb (cf. Chomsky 1957:42-3). In (70) (d) the trace indicates the originating position of the Patient argument *John*, and the passive auxiliary *be* is omitted. The trace implies, however, that (70) (d) is a post-move- α level of representation; i.e., an S-structure rather than a D-structure. (70) (d) merely repeats Stowell's original example highlighting 'exceptional Case marking'; the D-structure would be *we FEAR* $VP[e]_V[KILL John]$.

(71)



Move- α occurs in order that *John* may be genitive Case-marked by Poss 's of **D** (cf. Abney 1987:25). This Case-marking derives *John's* in figure (71) and derives *his* in the case of a possessive pronominal form.³²

Because overt Case is generally considered to be a superficial phenomenon in GB-theory (it is at PF that morphological Case derives *John's* or *his*), I take the position that Poss 's of **D** is inserted at PF and that Case-marking by **D** is therefore dependent upon the insertion of this grammatical morpheme. My conception that functional categories are present at the base level but not obligatorily filled with lexical or grammatical morphemes is based upon Chomsky's (1981:48-9) description of the categorial component of the base in the GB model. He states that *substantives* (i.e., [+N]; nouns and adjectives) and *predicates* (i.e., [-N]; verbs and prepositions) are the 'lexical' categories (i.e., those that are associated with θ -roles). He states elsewhere (1982:5) that only these θ -positions (i.e., *predicate* and *argument* positions) are lexically filled at D-structure. With this perspective, I assume that only the lexical heads N, V, A, P obligatorily generate their morphemes at the base level, since it is these categories that determine the θ -relations of Agent, Activity, Patient, Attributant, Goal, Location, etc. from which the grammatical functions 'subject', 'verb', 'object', 'complement' etc. derive. Functional categories, being outside of the domain of θ -relations, are thus not critical participants in predicate-argument relations. Their morphemes, therefore, exercise the option of base or late lexical insertion.

Thus whilst we may assume that the category **D** is present at D-structure due to the Projection Principle, which states that syntactic structure must be preserved at every level of a derivation (cf. Chomsky 1981:29; Chomsky 1986a:84), it is plausible that the actual insertion of morphemic content into **D** occurs at the later level of PF. This position is based on Emonds' (1985:177) principle of *Late Lexical Insertion*, which defines functional

³²Cf. Chomsky 1986a:198-9 on pronominal forms + Poss 's (e.g., they + Poss 's = *their* at PF; he + Poss 's would be *his* at PF; she + Poss 's would be *her* at PF; I + Poss 's would be *my* at PF, we + Poss 's would be *our* at PF, and you + Poss 's would be *your* at PF).

category (or 'closed class') morphemes as those which, if they are not inserted at D-structure, must be inserted after *move- α* applies in a particular domain: if a morpheme M inserted in a cyclic domain D has a contextual insertion feature (i.e., a syntactic feature that requires overt morphemic realisation at PF) that *must* be satisfied after (rather than before) transformations apply in D, then M is a member of a closed class category. Applying this principle to the DP-Analysis in figure (71), insertion of the possessive morpheme occurs after the DP-raising of *John*, so that 's (the morphemic realisation of a [+Poss] feature on D) may then affix to *John* and realise genitive Case. And if we extend Late Lexical Insertion to other functional categories such as I (T and Agr) or Asp or Pass, it is plausible that these particular categories likewise have their morphemes inserted at PF.³³ Therefore, morpho-syntactic phenomena such as tense (T) and agreement (Agr), modality (T), aspect (Asp), voice (Pass), and deixis (D) (as well as *possessive D*) can all be dependent upon the *late* lexical insertion of grammatical morphemes and so appear only at PF.³⁴

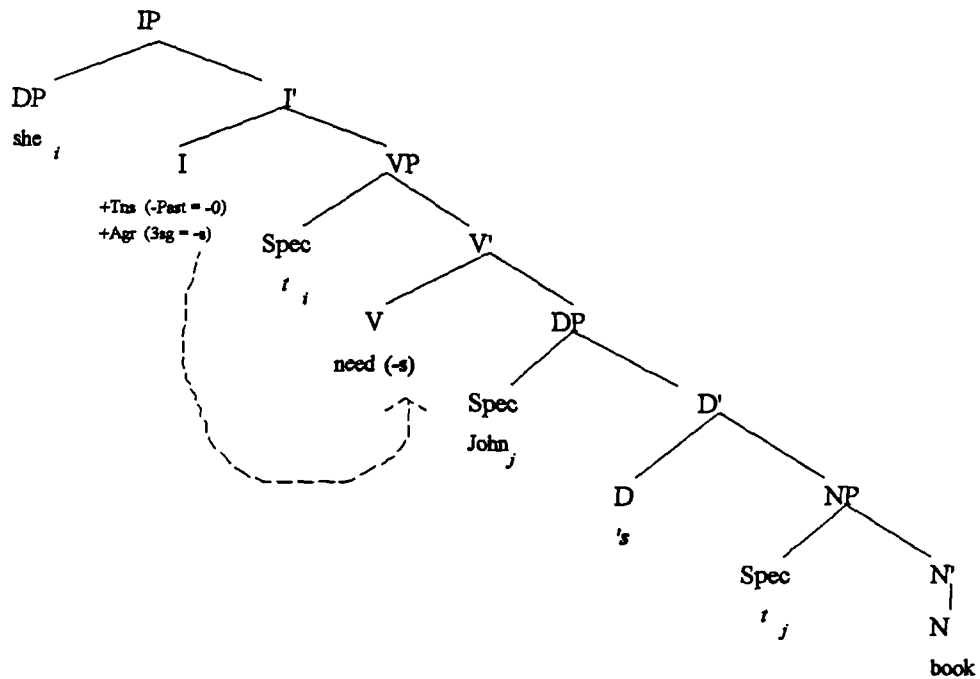
³³I (inflection), T (tense), Agr (agreement), Asp (aspect), Pass (passive), D (determiner), etc. I take to be functional categories due to the reasons cited in section 1.3., and therefore able to exercise the option of PF-insertion. As Late Lexical Insertion occurs *after* *move- α* , this entails that these functional category morphemes are 'alternatively realised' on (rather than 'lowered' onto) a sister constituent at PF (cf. Emonds 1985:177, 227; 1986:272; 1987:615; 1993:5). There is evidence to suggest that functional category morphemes are not, in general, base-generated, and that they are PF phenomena whilst lexical (i.e., thematic) category morphemes are D-structure phenomena: the fact that children do not display functional categories until ca. 24+ months, the fact that Broca's aphasics have impaired access to functional categories but retain access to thematic ones; the fact that functional categories exhibit absence or optionality in many languages, and the fact that the availability of functional categories varies cross-linguistically. (Cf. Radford 1990:111, 171, 274-6 on functional categories being absent at the thematic level of syntactic acquisition; i.e., that 'small' clauses characterise the lexical grammars of young children).

³⁴For the received GB view on the functional category I, cf. the 'split-InfI' analyses of Chomsky (1988), Belletti (1988), Pollock (1989) and Rizzi and Roberts (1989), where separate categories of T (tense) and Agr (agreement) are generated instead of the single category I. Pollock (1989) postulates that TP dominates AgrP, whilst Chomsky (1988), Belletti (1988), and Rizzi and Roberts (1989) propose that AgrP dominates TP. For both analyses, Agr or T would take a VP complement: $TP[T_{AgrP}[Agr VP]]$ or $AgrP[Agr TP[T VP]]$. Where T and Agr contain inflectional morphemes (e.g., +Past *-ed* or 3sg *-s*), these morphemes 'lower' onto V of VP in standard GB-theory (cf. Chomsky 1988:5 and Pollock 1989:371). Concerning auxiliary elements, Chomsky's original (1957:39) analysis concerning these places modals and aspectual and passive auxiliaries in Aux (i.e., I). Current GB theorising varies on the placement of these auxiliary elements. Pollock (1989:398-9) generates modals in T and dummy *do* (and presumably dummy *be*) in Agr, with subsequent 'raising' of *do* and *be* to T in order to form Agr + T: $TP[T_{AgrP}[do/be VP]]$. Chomsky (1988:9) generates dummy *do* (and presumably dummy *be*) in T, so that *do* and *be* raise to Agr in order to form T + Agr: $AgrP[Agr TP[do/be VP]]$. In analyses where AgrP dominates TP, T would raise to *do/be* or *do/be* would raise to Agr, depending on where dummy *do* and dummy *be* are generated: $AgrP[do/be TP[T VP]]$ or $AgrP[Agr TP[do/be VP]]$ (cf. Belletti 1988:28; Rizzi and Roberts 1989:12). For the aspectual auxiliaries *have* and *be*, in some GB analyses these are generated in a lower category AspP (complement of T or Agr) and raise to T and then to Agr (or vice versa) in order to amalgamate with each of the inflectional morphemes found there: $AgrP[Agr TP[T_{AspP}[Asp VP]]]$ or $TP[T_{AgrP}[Agr_{AspP}[Asp VP]]]$ (cf. Hendrick 1991:179-92, Koopman and Sportiche 1991:233-4, Belletti 1988:33-4 on the category Asp; and cf. Chomsky 1988:5 and Pollock 1989:398 on aspectual auxiliary-raising). For the passive auxiliaries *be* and *get*, I assume that these auxiliaries are generated in a Pass category (also complement of T or Agr) and subsequently raise to T and then to Agr (or vice versa) for amalgamation, in the same way as aspectual *have* and *be*: $AgrP[Agr TP[T_{PassP}[Pass VP]]]$ or $TP[T_{AgrP}[Agr_{PassP}[Pass VP]]]$ - this would be in keeping with Chomsky's (1988:5) observation (based on Emonds 1978) that aspectual auxiliaries but not verbs are required to raise in English. For determiners in D, cf. Abney (1987:25ff.).

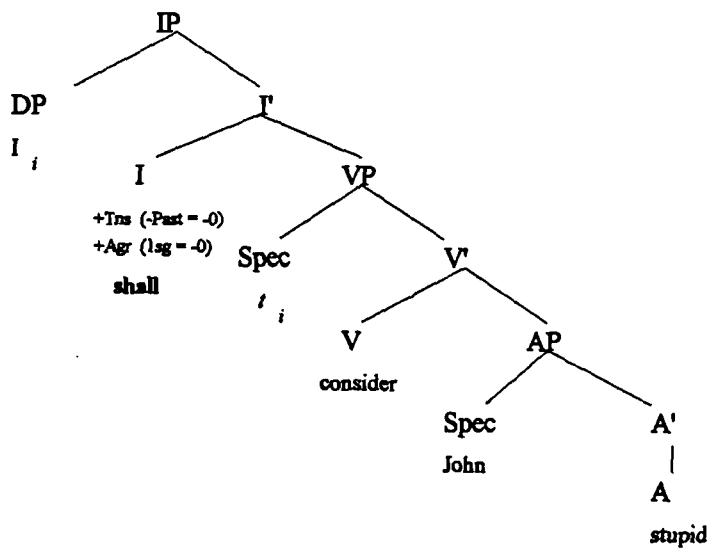
These PF insertions are indicated in bold print in figure (72):

(72)

(a) She need (+Tns (-Past -0), +Agr (3sg -s))_{DP}[John_{D'}[(+Poss 's) NP[t_{N'}[book]]]]

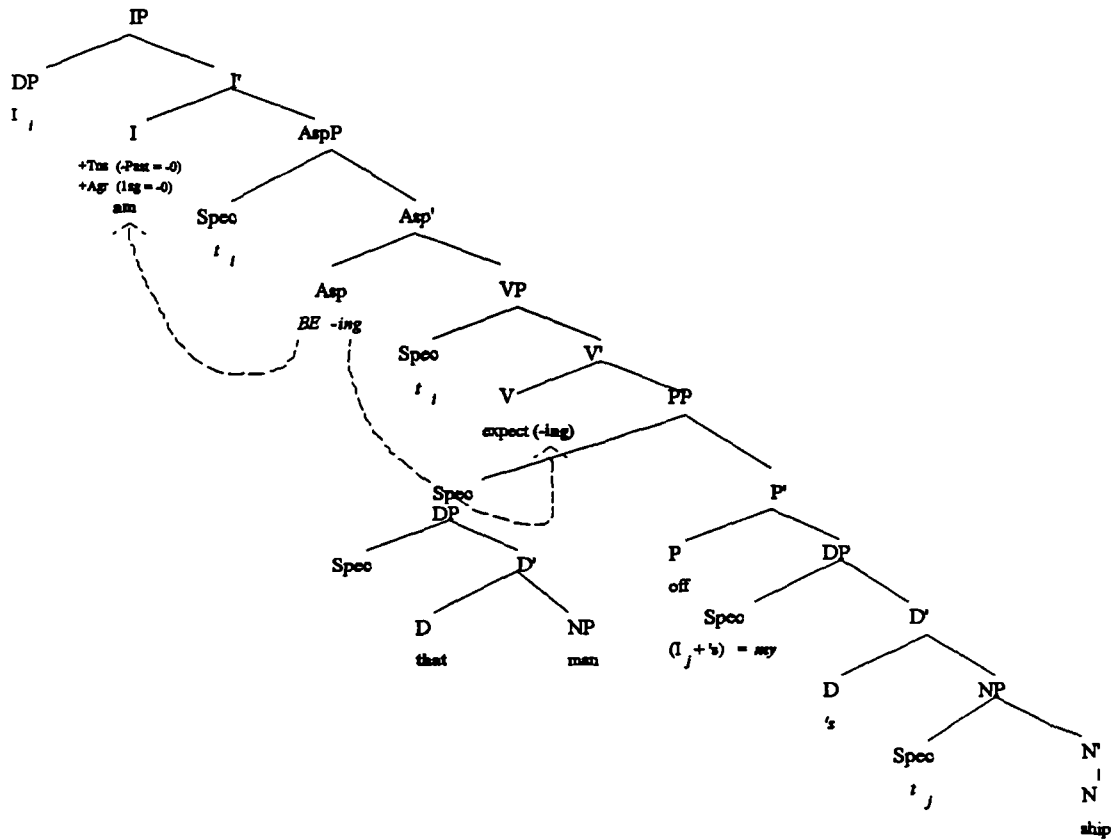


(b) I shall (+Tns (-Past -0), +Agr (1sg -0); +Modality (+Aux)) consider_{AP}[John_A[stupid]]

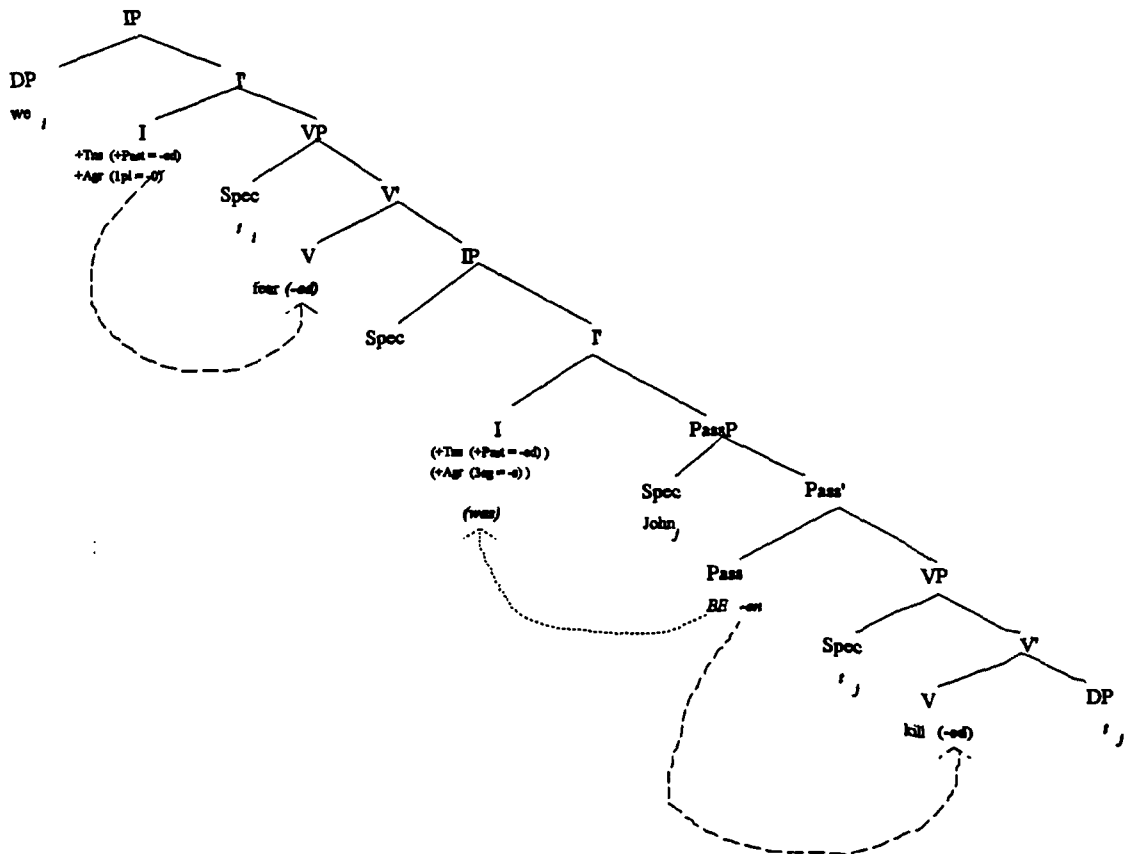


(c) *I am (+Tns (-Past -Ø), +Agr (lsg -Ø); +Aspect (+Aux)) expect (+Prog -ing)*

pp[that (+Deixis) man p[off my (I + Poss 's) ship]]



(d) *We fear (+Tns (-Past -ed); +Agr (1pl -Ø)) PassP[John Pass'[(BE -en) VP[e VP[kill (+Passive -ed) t]]]]*



To reiterate the point made earlier about the complements in the above examples (repeated in (73) below), what is significant is that, prior to Late Lexical Insertion at PF, all of the complement clauses are 'pure' (*thematically relevant*) predicate-argument relations:

- (73) (a) She NEED (*$_{DP}$ [e $_{D'}$ ['s]]*) $_{NP}$ [John $_{N}$ [book]]
 (b) I CONSIDER $_{AP}$ [John $_{A}$ [stupid]]
 (c) I EXPECT $_{PP}$ [(*that*) man $_{P}$ [off (*my*) ship]]
 (d) We FEAR(-ed) (*$_{PassP}$ [e $_{Pass}$ [(*BE* -en)]]*) $_{VP}$ [e $_{V}$ [kill(-ed) John]]]³⁵

That is to say, the complement clauses at D-structure represent primitive θ -relations, prior to any subsequent insertion operations that result in PF. These superficial refinements (i.e., insertions) are indicated in italics in (73). I do not, of course, propose that *all* functional category morphemes are inserted at the level of PF; only that the 'ancillary' ones are; i.e., those that do not play a part in θ -structure. The morphemes that are critical at underlying structure are the θ -associated ones (i.e., predicate or argument morphemes). I claim that *ancillary* morphemes are those functional category morphemes which realise such phenomena as tense and agreement, modality, aspect, voice, possession and deixis. These are not θ -associated and can consequently be inserted at PF.³⁶ The insertion sites for these morphemes are the ancillary functional categories of **T**, **Agr**, **Asp**, **Pass**, and **D**, respectively.³⁷ In example (73d) above (illustrated in (72d)), the passive participle *-en* is inserted at PF but not its co-morpheme the passive auxiliary *be*. Therefore, the functional category **Pass** (and its projection **PassP**) is triggered but not the higher functional category **I** (and its projection **IP**), into which passive *be* would raise in order to amalgamate with a tense ([-Past] = *-ed*) inflectional morpheme: $_{IP}$ [-e- $_{T}$ [-I $_{PassP}$ [John $_{Pass}$ [(*be* -en) $_{VP}$ [e $_{V}$ [kill(-ed) t]]]]]]]].³⁸

³⁵Note that I am here modifying Stowell's original (1981, 1983) example to what I believe is structurally correct at D-structure. *DP-movement* (i.e. *NP-movement* in earlier GB-theory) raises *John* from its underlying [Obj, VP] position through the empty [Spec, VP] position and into [Spec, PassP] in order to derive *John killed* at PF. *BE* is deleted because this auxiliary is not utilised at PF in *we feared* $_{PassP}$ [John_i $_{Pass}$ [(*BE* - t_j) $_{VP}$ [t_i $_{V}$ [kill(-ed)_j t_i]]]]].

³⁶That is, functional category morphemes are generally *post* rather than *pre move- α* insertions. However, I can envisage certain functional category morphemes such as *that* or *because* (**C**) that would be critical at the base level in that they would provide a meaningful link between two Propositional clausal structures at this level: cf. *I stay(-ed) behind* $_{CP}$ [*that* $_{IP}$ [*I (might) meet (the) Queen*]] and *He kill(-ed) John* $_{CP}$ [*because* $_{IP}$ [*John (had) kill(-ed) hi(s) wife*]]]. In this case, insertion of *that* or *because* is critical at D-structure to indicate the contingency of the second proposition upon the first one. I have indicated the tense, modal, deictic, aspectual, and possessive morphemes in these two examples for expository purposes only, as, being *ancillary*, I do not envisage them at D-structure.

³⁷In Chapter 4 we will see how functional categories serve as 'holding sites' for the various features of a lexical head. These features in turn license the insertion of functional morphemes at PF.

³⁸For simplification of analyses I shall normally use an umbrella notation of **IP** for **TP** and **AgrP**, although I prefer an analysis where **T** and **Agr** are separate categories and where **AgrP** dominates **TP** (cf. fn. 34).

1.4. Base-generated vs. movement-generated subject specifiers

We have seen that theta theory is the motivation behind Stowell's argument for subject specifiers as illustrated in (73). Only lexical heads have the capacity to θ -mark and θ -marking is local with respect to the θ -marking head (cf. Chomsky 1986b:19). The governing verb in each of the examples in (73) θ -marks its complement phrase as *Proposition* at D-structure, thereby discharging a θ -role rightwards. I define Proposition as a subject-predicate relation where all the θ -roles of a predicate are discharged; in (73a-d) the complement phrases are complete in this sense. N', A', and P' θ -mark their subject DPs as Possessor, Theme and Theme, respectively. In (73d), V' θ -marks its Object DP as Patient and thereby discharges all of its θ -roles; there is no subject-predicate relation as this is a peculiarity of the passive construction.³⁹ Note that in this framework *predicate* is no longer limited to V and A (as is normally the case in GB-theory) but extends to N and P as well. Proposition, extensionally, is not limited to IP and CP (which, we recall, are *PF* phenomena).⁴⁰ The examples of (73) are repeated once again in order to illustrate the *propositional* θ -marking of a complement phrasal argument.

- (73) (a) She NEED_{Proposition-NP}[John_{N'}[book]]
 (b) I CONSIDER_{Proposition-AP}[John_{A'}[stupid]]
 (c) I EXPECT_{Proposition-PP}[(*that*) man_{P'}[off (*I*) ship]]
 (d) We FEAR(-*ed*)_{Proposition-VP}[*e*_{V'}[kill(-*ed*) John]]

However, the subject nominal of a complement phrase also requires a θ -role, as it is in a θ -position (i.e., argument to a predicate). The only way this subject argument can get a θ -role is from its lexical X' predicate (cf. Chomsky 1986a:195). I follow Stowell in this regard and posit an internal structure of $_{XP}$ [Subj $_{X}$ [Pred]] for maximal projections *cross-categorially*. However, whereas Stowell implicitly suggests that subject specifiers are DPs, Emonds' *Subject Principle* (Emonds 1985:23) explicitly restricts the subject argument position to a DP position. Emonds claims that when other constituents besides DP (e.g., CP, PP) occur in subject position, they are actually base-generated inside a DP subject position. Because categories like CP and PP are 'Case-resistant' (i.e., do not receive Case as DPs do), they are forced to prepose in the syntax. If, for example, CP or PP arguments were to remain *in situ* in embedded subject positions such as those in (73) (b) -(d), they would be candidates for exceptional Case-marking by the predicates *consider*, *expect*, *fear*, etc.

³⁹I distinguish Theme from Patient in that Theme is the entity undergoing motion or *in a certain state or perceived to be in that state*; Patient is the recipient of an action (cf. Spencer 1991:190). Theme in this sense encompasses the subject of both attributive and locative states, whereas Radford (1990:41) uses the terms *Attributant* and *Entity* for the subject of an attributive state and the subject of a locative state, respectively.

⁴⁰Cf. Chomsky (1981:112) on an AP such as *John stupid* being regarded as a proposition.

If they were to raise to [Spec,IP], they would be candidates for nominative Case-marking by I. They are therefore forced to prepose to a [Spec,CP] position. In view of Emonds' *Subject Principle* then, we can posit a structural configuration of [DP X'] for maximal projections, with DP the nominal subject specifier and X' the composite predicate (cf. Radford 1990:46; 74-5; 113-14; 169). In section 1.5. I argue that all lexical and functional phrases have a potential *full* projection; i.e., a projection where the specifier position is filled with a nominal subject.⁴¹ Non-DP subject arguments can occupy the [Spec,XP] position, but the specifier position is primarily a site for DPs. These nominal subjects are either base-generated in the exceptional case (as in the complement phrases of (73) (b)-(d)), or movement-generated in the unmarked case (as in the surface DP for (73) (a): *She NEED* $DP[John$ $D['s$ $NP[t$ $N'[book]]]$).⁴²

1.5. Theoretical premises concerning [Spec,XP]

The following premises will be assumed throughout the thesis.

- (i) $X^{\max} = a$ thematic structure of $XP[Spec[DP Subject]] X[Predicate]$]]
 Assuming a universal X-bar formula of $XP = Spec + X'$ and $X' = X + Complements$ for maximal projections, all X' categories are predicates with potential DP subject specifiers. A structural relation of $XP[Spec[DP Subject]] X[Predicate]$]] is a *Proposition* at all levels of a derivation. By this definition, the grammatical term 'clause' is a redundant categorial label, as any lexical head projects to a predicate X' and this predicate has a subject position due to the Extended Projection Principle (*EPP*), which stipulates that clauses (*phrases* in this framework) must have subjects at all levels of representation (cf. Chomsky 1982:10).⁴³ The interpretation of phrases as propositions applies to the lexical categories N^{\max} , V^{\max} , A^{\max} , and P^{\max} ; as well as to the ancillary functional categories D^{\max} , C^{\max} , I^{\max} (T^{\max} and Agr^{\max}), Neg^{\max} , Asp^{\max} , etc. (cf. Chomsky 1986b:2-3).

⁴¹We have noted that the [Spec,VP] position of a passive construction is underlyingly empty and that the *object* nominal of V' passes through this empty position on its way to [Spec,PassP]. However, the significance of this is that in the passive, V' only assigns its *rightward* θ -role characteristically; in the active counterpart V' assigns its *leftward* θ -role as well - cf. $VP[the\ enemy\ V'[kill(-ed)\ John]]$, where V' θ -marks *John* as Patient and *the enemy* as Agent.

⁴²In standard GB-theory *move-a* of a subject nominal occurs into [Spec,CP], [Spec,IP] and [Spec,DP], etc., where this movement is motivated. With DPs and IPs, for example, *DP-movement* is motivated in order for a subject nominal to get Case from a governing Case-marker, D of DP (cf. figure (71)) or I of IP: $IP[John_i\ I\ VP[t_i\ V[burned\ DP[the\ book]]]]$. With CPs, *WH-movement* of a subject or object nominal is motivated in order to form interrogatives and relatives: $CP[who_i\ C[e\ IP[t_i\ I\ VP[t_i\ V[burned\ DP[the\ book]]]]]$ and $the\ book\ CP[which_j\ C[e\ IP[he_i\ I\ VP[t_j\ V[burned\ t_j]]]]$.

⁴³Section 1.5. draws substantially from Radford (1990), which in turn derives from Stowell (1981, 1983).

(ii) $X^{\max} =_{XP}[_{Spec}[e] \text{ } _X[_{Predicate}]]$ in canonical case

Because of the Extended Projection Principle, the subject specifier *position* of maximal projections is generated. However, in the framework adopted here, this position is canonically *null* (i.e., empty) at D-structure (cf. Haegeman 1990:315; Radford 1990:282). The Empty Category Principle (ECP) states that empty categories must be governed (cf. Chomsky 1981:250).⁴⁴ Therefore, due to the ECP, null subjects in the [Spec,XP] position must be licensed. Rizzi (1986:518-19) suggests that an empty category is formally licensed if it is governed by a proper (i.e., θ -marking) head (cf. also Cardinaletti-Giusti 1991:13; Haider 1994:190). If a proper head selects a category X, it selects the *projection* of that X. Therefore, an empty specifier position is licensed in X^{\max} when X^{\max} is selected by a Y head. We will say that X^{\max} in this case is minimally realised.

A phrase is *maximally realised* as a Proposition when its specifier position is filled with a nominal subject at underlying structure (by base-generation) or at superficial structure (by movement-generation). Lexical X^{\max} (i.e., NPs, VPs, APs, and PPs) is maximally realised as Proposition at underlying level by the triggering (i.e., *activation*) of its Spec position. Functional X^{\max} (i.e., CPs, IPs, DPs, NegPs, AspPs, PassPs, etc.) is maximally realised as Proposition at surface level by *DP-movement* into its Spec position. (74) illustrates this distinction. The category I is expanded to T and Agr in (h) and (i) merely in order to show a fuller range of functional categories.

(74) D-Structures:

- (a) He DRIVE $_{NP}[Gina \text{ } _N[car]]$ ⁴⁵
 (b) I THINK $_{AP}[it \text{ } _A[unlikely]]$
 (c) We WANT $_{PP}[a \text{ } _P[girl \text{ } _P[on the team]]]$
 (d) I WATCH $_{VP}[Harry \text{ } _V[play cricket]]$

S-structures:

- (e) $_{IP}[Martha \text{ } _I[I \text{ } _VP[t \text{ } _V[lectures on clitics]]]]$
 (f) $_{DP}[John \text{ } _D['s \text{ } _NP[t \text{ } _N[book]]]]$
 (g) $_{CP}[Who \text{ } _C[C \text{ } _IP[I \text{ } _VP[t \text{ } _V[left]]]]?$
 (h) $_{AgrP}[She \text{ } _Agr[does \text{ } _TP[t \text{ } _T[-Past \text{ } _VP[t \text{ } _V[exasperate him]]]]]]$
 (i) $_{AgrP}[the \text{ } _Agr[thief \text{ } _Agr[(had) \text{ } _TP[t \text{ } _T[+Past \text{ } _AspP[t \text{ } _Asp[have-en \text{ } _VP[t \text{ } _V[tak(-en) the money]]]]]]]]]]$

⁴⁴In Chapter 2 (fn. 98) we discuss the *proper government* of empty categories.

⁴⁵Note that in (74) (b) - (d), the italicised subject specifiers in the AP, PP, and VP phrases are overt due to the head Vs selecting a Propositional complement. In (74) (a), however, the overt subject specifier *Gina* is overt by virtue of the N' predicate *car*, which selects a Possessor subject argument. In this case I assume that the head N *car* carries a feature of [+Possessed] (cf. section 3.4.2.1.), which forces the selection of a Possessor argument.

We will observe in section 2.3.1. that NPs like $_{NP}[Gina \text{ } _N[car]]$ or $_{NP}[e \text{ } _N[car]]$ are not arguments; they are embedded constituents of DP arguments such as $_{DP}[Gina \text{ } _D['s \text{ } _NP[t \text{ } _N[car]]]$ or $_{DP}[D[the \text{ } _NP[e \text{ } _N[car]]]$. Hence NPs never occur without containing DPs, even if the D node is empty.

(iii) *A nominal subject typically fills [Spec,XP]*

The [Spec,XP] node typically houses a *DP subject* in cross-categorial instances of an overt subject specifier.⁴⁶ The actual content of the [Spec,XP] position has long been an area of some contention, and in section 2.1. I support Stowell's claim of a subject argument in [Spec,XP]. DP subject argument specifiers are evident in (74) (a) - (i).

For exceptions to premise (iii), for example [Spec,PassP], where the specifier of PassP can house DP objects, and [Spec,CP], where the specifier of CP can house *wh*-subjects and *wh*-objects, as well as preposed X^{\max} complements and adjuncts (cf. section 1.1.1.3), I propose the following explanation. Lexical XP propositions require a base-generated nominal subject specifier in order that the X' predicate may discharge a θ -role leftwards onto a subject argument.⁴⁷ Functional XPs can not base-generate subject specifiers, as a functional head has no θ -roles to assign to its arguments (such as a subject argument), and recall that I am claiming that functional head morphemes are not usually present at D-structure. Therefore, as functional X^0 does not θ -mark its subject or complement at this level, functional X^{\max} can reserve its specifier position as a nonthematic landing-site for movement.⁴⁸ *Object* DPs of passives, as well as *wh*-subjects and *wh*-objects of interrogatives (already θ -marked by their lexical governors at D-structure), can consequently utilise [Spec,PassP] and [Spec,CP] as a landing-site for passivisation and *wh*-movement respectively; and preposed X^{\max} complements and adjuncts can utilise [Spec,CP] as a landing-site for topicalisation.

However, according to our *Subject Specifier* framework, we would predict that *wh*-phrases as well as other preposed X^{\max} contain *null* subject positions, in the unmarked case. I claim that this is in fact the case, and that whereas complements are X^{\max} in categorial level, adjuncts may be X^0 and X' as well as XP in level. Complements must be X^{\max} because of their argument (i.e., potential *propositional*) status. Adjuncts, on the other hand, are not selected for by any lexical head; therefore they are nonargument in status. Being nonarguments, they can not have the θ -role of Proposition. Without propositional potential they need not have the subject-predicate relation of a Proposition (our definition of an argument X^{\max}).⁴⁹ Thus they are often underspecified categories,

⁴⁶However, we observed in fn. 31 that the [Spec,XP] position of a passive construction typically houses a DP *object* in English; i.e., [Spec,PassP] = [Obj, VP].

⁴⁷We noted at the beginning of this section that the EPP stipulates that clauses (i.e., *propositions* in thematic structure) require subjects; therefore *predicates* (the core category of a proposition) do. As adjuncts are never predicates, they need not project to an XP with a subject specifier position (i.e., they need not project beyond X^0).

⁴⁸As lexical X^{\max} categories are potential propositions at underlying structure, they can take a subject argument. Functional categories, being nonthematic, can not generate subject specifiers and thus utilise their specifier position only as landing-sites or as 'passing-through' sites.

⁴⁹Although many full clauses such as *relative clauses*, *purpose clauses*, *temporal clauses*, *manner clauses*, etc. are considered adjuncts; however, these are nonargument *clauses* in the syntax rather than argument *propositions* at the base level.

i.e., either an XP with a *null* subject node (the canonical case; cf. premise (ii)) or an X⁰ or X' *without* a specifier node. This claim has indirect support from what Radford (1988:285) calls the 'Minimal Structure Hypothesis' (although Radford suggests that the following is not applicable to *argument* constituents):

- (75) The maximal projection of a given head constituent X is the largest projection of that X in the phrase-marker in which the X occurs.

Hence under the Minimal Structure Hypothesis an unexpanded X has the status of an X⁰ constituent only, and an X' without a specifier has the status of an X' constituent only. Adapting this hypothesis to the status of *nonargument* adjuncts, an X⁰ adjunct occurs in an X⁰ domain, an X' adjunct occurs in an X' domain, and an XP adjunct occurs in an XP domain.⁵⁰

A range of underspecified adjuncts is given in (76).

- (76) (a) PP[the boy_P[from Wales]] *with sense*]]
 (b) I want PP[you_P[out of here] *now*]]
 (c) NP[John_N[student of physics]] *with long hair*]]
 (d) you will VP[t_V[find it] *on the shelf*]]
 (e) I VP[t_V[watched VP[her_V[gag]]] *gleefully*]]
 (f) I VP[t_V[watched VP[her_V[giggle] *gleefully*]]]]]

I suggest that, in the interests of structure preservation, the particular categorial *level* of the adjuncts in (75) (a) - (f) depends upon the level of projection that the adjuncts modify at S-structure.⁵¹ That is to say, X⁰ adjuncts modify X⁰ constituents, X' adjuncts modify X' constituents, and XP adjuncts modify XP constituents.⁵² Let us examine some X' adjuncts in the above examples. In *I want PP[you_P[out of here] Adv'[now]]]*, the Adv' adjunct *now* modifies the P' *out of here*. In *you will VP[t_V[find it] P'[on the shelf]]]*, the P' adjunct *on the shelf* modifies the V' *find it*. And in *I VP[t_V[watched VP[her_V[gag]] Adv'[gleefully]]]*, the Adv' adjunct *gleefully* modifies the V' *watch*; whereas in *I VP[t_V[watched VP[her_V[giggle] Adv'[gleefully]]]]]*, the Adv' *gleefully* modifies the V' *giggle*.

⁵⁰In the *Barriers* model adjunction is restricted to X^{max} nonarguments (cf. Chomsky 1986b:6,88), but various researchers have suggested weakening this restriction to X⁰-X⁰ adjunction (Rizzi and Roberts 1989:18-19; Roberts 1991:213-17; Hoekstra 1991:26-32; Hermon 1992:157-63) as well as X'-X' adjunction (cf. Rouveret and Vergnaud 1980:129-39; Cline 1986:31-41; Rouveret 1991:372-3; Stowell 1991:211).

⁵¹Cf. Chomsky (1965:101-3) on 'internal' and 'external' postmodifiers, and Hornstein and Lightfoot (1981:21) on the semantic properties of adjuncts.

⁵²Roberts (1991:213, 217) cites V-to-I movement and cliticisation as typical examples of X⁰-X⁰ adjunction.

We turn now to XP adjuncts. In a PP such as $_{PP}[the\ boy\ P[from\ Wales]]\ with\ sense$, the constituent *from Wales* is a P' predicate to *the boy*, and *with sense* is an adjunct modifier modifying the entire PP proposition *the boy from Wales*. *With sense* is thus a PP adjunct with a null subject specifier: $_{PP}[the\ boy\ P[from\ Wales]]\ PP[e\ P[with\ sense]]$. The subject specifier position of the PP adjunct is null because there is no selectional head to trigger this position, as there is in (74) (a) - (d). A selectional head which selects an X^{max} proposition creates the *marked* case of an XP with an overt subject specifier (cf. premise (iv) below).

In examining an XP adjunct in an NP such as $_{NP}[John\ N[student\ (of)\ physics]]\ with\ long\ hair$ (cf. Radford 1988:175-96), the analysis is slightly more complex.⁵³ The constituent *student of physics* is the N' predicate to *John*, *physics* is the NP complement to *John*, and *with long hair* is the adjunct modifier to the entire NP proposition *John student of physics*: $_{NP}[John\ N[student\ NP[e\ physics]]]\ PP[e\ P[with\ long\ hair]]$. The complement NP $_{NP}[e\ N[physics]]$ and the adjunct PP $_{PP}[e\ P[with\ long\ hair]]$ both exhibit null subject positions as this is the unmarked case in the absence of a selectional head triggering their Specs (cf. premise (iv)). Notice also that, concerning the D-structure complement to *student*, *(of) physics* is a complement argument NP: $_{N'}[student\ NP[e\ physics]]$. As an argument, *physics* could itself take a Possessor subject specifier, as in $_{NP}[John\ N[student\ NP[Einstein\ physics]]] \Rightarrow John\ is\ a\ student\ of\ Einstein's\ physics$. However, for this to happen the selectional head N would need to select a *Proposition* NP complement at D-structure, rather than a *Property* NP complement: i.e., [Head (N *student*) - Proposition (NP *Einstein physics*)] vs. [Head (N *student*) - Property (NP *physics*)].⁵⁴ Thus I propose that a complement XP to an N can be either an X^{max} *Proposition* with a filled subject position or an X^{max} *Property* with a *null* subject position. (77) captures the salient differences between complements and adjuncts in a Subject Specifier framework.

(77) Complement-Adjunct Distinction

- (i) Complements are X^{max} in bar-level and may be *propositions* with an overt subject specifier, or *nonpropositions* with null subject specifiers: $_{XP}[Overt\ Subject\ X']$ or $_{XP}[e\ X']$.
- (ii) Adjuncts may be of any bar-level, depending upon the level of category that they modify: i.e., X^0 , X' , or X^{max} . Adjuncts are always *nonpropositions* (cf. fn. 49).

⁵³Because of its complexity, the D-structure is given for this particular example. At S-structure, an NP proposition such as $_{NP}[John\ N[student\ (of)\ physics]]$ can exhibit either a Possessor subject, as in *John's student of physics*, or a Theme subject (cf. fn. 39), as in *John is a student of physics*. In *John is a student of physics* the underlying structure, I claim, is $BE\ NP[John\ N[student\ of\ physics]]$; cf. section 2.2.3.1. on *be* as a raising predicate.

⁵⁴In the absence of an established θ -role to assign to this type of NP complement at D-structure, I am using a θ -role of 'Property': cf. *man [(of) honour]*; *woman [(of) integrity]*; *people [(of) England]*.

In (77) (i) I use the term *nonproposition* to describe an X^{\max} with a *null* subject specifier position or an X^0/X' *without* a subject position. Nonpropositional complements include X^{\max} **property** complements such as *student* $_{NP} [e \ N [(of) \ physics]]$ and *rigid* $_{PP} [e \ P [with \ fear]]$; X^{\max} **locational** complements such as *sick* $_{PP} [e \ P [in \ the \ head]]$ and *he put the report* $_{PP} [e \ P [on \ the \ desk]]$ (vs. *he needs* $_{PP} [the \ report \ P [on \ the \ desk]]$); and X^{\max} **patient/theme** complements such as in *he kicked* $_{DP} [D [the \ NP [e \ N [dog]]]]$ and *for* $_{DP} [D [a \ NP [e \ N [moment]]]]$. Nonpropositional adjuncts include X^0 clitics (cf. fn. 52) and X^0 modifiers such as *massive* in $_{AP} [DP [the \ A^0 [massive] \ N^0 [sum]]] \ A [total]]$; X' constituents such as *gleefully* in (76) (e) and (f) above; and XP constituents such as *with sense* in (76) (a) above.

We conclude premise (iii) by examining the status of *preposed* topicalised adjunct modifiers. In (78) the preposed adjuncts modify a V' constituent in their original position, hence by (77) (ii) they are X' constituents:

(78)

(a) $CP [P [In \ what \ capacity]_i \ C [does_j \ IP [he_k \ I [t_j \ VP [t_k \ V [make \ that \ claim] \ t_i]]]]]] ?$

(b) $CP [Adv [How \ loud]_i \ C [can_j \ IP [you_k \ I [t_j \ VP [t_k \ V [tolerate \ my \ radio] \ t_i]]]]] ?$

(c) $CP [Adv [How \ quickly]_i \ C [must_j \ IP [you_k \ I [t_j \ VP [t_k \ V [pay \ the \ money \ back] \ t_i]]]]] ?$

(d) $CP [Neg [Never]_i \ C [would_k \ IP [she_l \ I [t_k \ t_i \ VP [t_l \ V [ask \ why]]]]]] !$

From the data presented in (76) and (78) we observe that when adjuncts modify X' constituents, they modify *predicates* (i.e., N' , V' , A' , or P'); and when adjuncts modify X^{\max} constituents, they modify *propositions*. This is in keeping with our claim in (77) (ii) that adjunct modifiers may be X' or XP (or X^0) constituents.

Finally, the adjuncts in (78), as they are preposed constituents, do not underlyingly occupy a [Spec,XP] position. And as we have observed at the beginning of this premise, nominal objects in passive constructions, *wh*-phrases, and preposed X^{\max} complements and adjuncts can all utilise the specifier position of functional X^{\max} only because it is a nonargument position. Hence we conclude that [Spec,XP] does typically house a nominal subject at the base level.

(iv) $XP [Spec [Overt \ DP \ Subject] \ X' [Predicate]] = \textit{marked construction}$

DP subject specifiers are selected for by the lexical head of X' predicates. When specifier subjects are base-generated and remain *in situ* throughout a derivation it is

a *marked* (i.e., exceptional) case. When these subject specifiers undergo *move- α* it is the *unmarked* (i.e., typical) case. Movement occurs whenever the Case Filter forces a DP subject specifier to raise in order to get Case from a governing Case-marker (I or D). In (74), repeated below as (79), examples (b) - (d) are all marked, because the subject specifier of the complement phrase remains *inert* (i.e., unmoved) throughout the derivation (i.e., at D-structure and at S-structure). Examples (e) - (i), in contrast, are unmarked constructions where the subject specifier of the embedded phrase typically raises.⁵⁵

(79) D-Structures:

- (a) ~~He~~ DRIVE ---_{NP} [Gina ---_{N} [ear]]
 (b) I THINK ---_{AP} [it $\text{---}_{A'}$ [unlikely]]
 (c) We WANT ---_{PP} [a girl ---_{P} [on the team]]
 (d) I WATCH ---_{VP} [Harry ---_{V} [play cricket]]

S-structures:

- (e) IP[Martha ---_{I} I ---_{VP} t ---_{V} [lectures on clitics]]]
 (f) DP[John ---_{D} 's ---_{NP} t ---_{N} [book]]]

⁵⁵The Case Filter (Chomsky 1981:49) specifies that an overt DP must have Case. When there is no available V or P Case-marker at base level for DP subject specifiers, they must raise in order to be Case-marked by I or D at PF:

- | | |
|--|--|
| (a) I want ---_{PP} [Helen ---_{P} [at ---_{DP} [the conference]]] | (DP subject <i>Helen</i> Case-marked by V <i>want</i>) |
| (b) IP[Helen ---_{I} I ---_{VP} e ---_{V} [came to the conference]]] | (DP subject <i>Helen</i> raises to be Case-marked by I) |
| (c) He hid the will ---_{PP} [e ---_{P} [behind ---_{PP} [the notes ---_{P} [in the safe]]]] | (DP subject <i>the notes</i> Case-marked by P <i>behind</i> ; the first PP has an empty subject specifier position as this is the unmarked Case) |
| (d) IP[---_{PP} [The notes ---_{P} [in the safe]] ---_{I} are ---_{VP} t ---_{V} [miss(-ing)]]]] | (In the absence of a P Case-marker as in (c), progressive <i>be</i> can not rightwards Case-mark the DP argument <i>the notes</i> and so <i>the notes</i> raises with its entire PP to [Spec,IP] in order to be Case-marked by I - in this instance nominative Case 'percolates' through the PP subject argument to the DP argument <i>the notes</i> within it (cf. Stowell 1981:266). |
| (e) NP[John ---_{N} [book]] | (<i>John</i> Caseless prior to movement) |
| (f) DP[John ---_{D} 's ---_{NP} t ---_{N} [book]]] | (<i>John</i> raises to be genitive Case-marked by D) |

NB: Note that for (c) and (d) above, ---_{PP} [The notes ---_{P} [in the safe]] constitutes a PP proposition in this case, because the P' *in the safe* is the predicate of *the notes* (i.e., P' is a lexical category taking *the notes* as its subject argument). A PP proposition such as ---_{PP} [The notes ---_{P} [in the safe]] in (c) and (d) must not be confused with a PP locational complement, as in *He put* ---_{DP} [the notes] ---_{PP} [e ---_{P} [in the safe]], where *in the safe* is a second complement to *put* and has a null subject specifier (i.e., an X^{\max} locational-type nonproposition, as per (77) (i) above). Null subject specifiers are the canonical case with nonpropositional PPs; cf. premise (ii) above. The conditions motivating an overt subject specifier are discussed in premise (v) below. A PP proposition must also not be confused with a PP adjunct such as in *He found* ---_{DP} [the notes] ---_{PP} [e ---_{P} [in the safe]], where *in the safe* is a locational adjunct.

- (g) $_{CP}[Who \ C[_C \ IP[\ I \ VP[\ t \ V[\text{left}]]]]]?$
 (h) $_{AgrP}[She \ Agr[\ \text{does} \ TP[\ t \ T[-Past] \ VP[\ t \ V[\text{exasperate him}]]]]]$
 (i) $_{AgrP}[the \ thief_i \ Agr[\ \text{had}_j \ TP[\ t_i \ T[+Past] \ Asp[\ t_i \ Asp[\ t_j \ (-en) \ VP[\ t_i \ V[\text{tak-en the money}]]]]]]]$

(79) (a) is deleted because the subject specifier of $_{NP}[Gina \ N[car]]$ is not externally Case-marked at S-structure, hence it is not inert and not marked. Due to the fact that the DP dominating an NP will always receive the Case-mark from a V or P head, inert subject specifiers are not licit in English possessive NPs. In (79) (a) the DP argument $_{DP}[Gina \ D['s \ NP[\ t \ N[car]]]]$ receives accusative Case from *DRIVE* (cf. fn. 45, 2nd para.). But the DP subject specifier *Gina* also requires Case, therefore it must move from [Spec,NP] to [Spec,DP] in order to be Case-marked by D: $_{DP}[Gina \ D['s \ NP[\ t \ N[car]]]]$. Hence (79) (a) without movement is ungrammatical at PF: **He drives $_{NP}[Gina \ N[car]]$* . (80) illustrates the distinction between inert and raised subject specifiers.

(80)

- | | | |
|---------------|---|--|
| a) I consider | $_{AP}[John \ \text{stupid}]$ | <i>inert</i> subject specifier (marked) |
| b) I consider | $_{CP}[that \ IP[John \ I[is \ AP[\ t \ A[stupid]]]]]$ | <i>raised</i> subject specifier (unmarked) |
| c) *I need | $_{DP}[e \ D['s \ NP[John \ N[book]]]]$ | <i>inert</i> subject specifier (ungrammatical) |
| d) I need | $_{DP}[John \ D['s \ NP[\ t \ N[book]]]]$ | <i>raised</i> subject specifier (unmarked) |

(v) *Spec-activating Predicates*

Where DP subject specifiers do not raise, I propose that this is due to both the θ -criterion and the Case Filter.⁵⁶ The various subtheories of the grammar have the following consequences:

⁵⁶The θ -criterion stipulates that arguments of predicates are assigned unique θ -roles (cf. Chomsky 1981:36). In the context of (79), this means that at base level the V predicates in the matrix clauses in examples (a) - (d) assign a Proposition θ -role rightwards to their XP complement arguments, whilst the X' predicates in these complement arguments assign an appropriate θ -role leftwards to their DP subject arguments: $V \rightarrow_{XP-\theta} [DP-\theta \leftarrow_{X'} [X \ \text{Complement(s)}]]$. This is discussed in section 1.4. (79) is repeated here:

(79) D-Structures:

- | | |
|--------------|--|
| (a) He DRIVE | $_{NP}[Gina \ N[car]]$ |
| (b) I THINK | $_{AP}[it \ A[unlikely]]$ |
| (c) We WANT | $_{PP}[a \ \text{girl} \ P[\text{on the team}]]$ |
| (d) I WATCH | $_{VP}[Harry \ V[\text{play cricket}]]$ |

However, note that with respect to the Case Filter, an overt Spec in example (a) is motivated *only* by the θ -criterion. At S-structure, the DP *Gina* is genitive Case-marked by *Poss 's* of D (in the DP-Analysis); *DRIVE* meanwhile discharges its Case feature onto the entire DP $_{DP}[Gina \ D['s \ NP[\ t \ N[car]]]]$. An overt subject specifier such as *Gina* is, however, still motivated by the θ -criterion. Where the predicate N' *car* carries a feature of [+Possessed] (cf. fn. 45), it must presumably discharge a θ -role of Possessor onto a subject argument in NP. Where the N' doesn't carry this feature, the containing DP will presumably be a candidate for the insertion of a determiner at PF: cf. $_{DP}[e \ D[\ \text{the} \ NP[\ e \ N[car]]]]$.

leftwards-triggered by its V' predicate. However, [Spec,VP] in this case would never remain *in situ* throughout a derivation unless it was preceded by a Spec-activating predicate V⁰ which selected a VP⁺ complement: cf. *I watch* _{VP}[*Harry play cricket*] where *watch* exceptionally Case-marks *Harry*. In the absence of a Spec-activating selectional head such as *watch* (i.e., in unmarked cases), the DP subject in [Spec,VP] would always need to raise to [Spec,IP] in order to be Case-marked by I at S-structure: cf. _{IP}[*Harry* _I[_{VP}[*t* _V[*plays cricket*]]]]].

(vi) $X^{max} = \text{a structural configuration of } X_P[\text{DP } X']$

Based on premises (i) to (v), $X_P[\text{DP } X']$ is the prototypical structure for all phrasal projections (cf. Radford 1990:114, 169). In addition to the theta theory arguments given in section 1.2.2., trace theory provides evidence that $X_P[\text{DP } X']$ is the canonical structure of an X^{max} :

- (82) (a) She loves _{DP}[*Tim*_i _D['s] _{NP}[*t*_i _N[*laptop*]]]]
 *She loves _{DP}[*Tim*_i _D['s] _{NP}[*Fritz*_j _N[*laptop*]]]]]
- (b) *Mark*_i I believe _{AP}[*t*_i _A[*incompetent*]]
 **Mark*_i I believe _{AP}[*that twit*_j _A[*incompetent*]]]
- (c) *The documents*_i he wants _{PP}[*t*_i _P[*off the floor*]]
 **The documents*_i he wants _{PP}[*them*_j _P[*off the floor*]]]
- (d) *Nancy*_i I make _{VP}[*t*_i _V[*cry*]]
 **Nancy*_i I make _{VP}[*the lass*_j _V[*cry*]]]
- (e) _{IP}[*Martha*_i _I[_{VP}[*t*_i _V[*lectured on clitics*]]]]]
 *_{IP}[*Martha*_i _I[_{VP}[*my colleague*_j _V[*lectured on clitics*]]]]]
- (f) _{DP}[*Jane*_i _D['s] _{NP}[*t*_i _N[*house*]]]]]
 *_{DP}[*Jane*_i _D['s] _{NP}[*she*_j _N[*house*]]]]]⁶¹
- (g) _{CP}[*Who*_i _C[*did*_j _{IP}[*you*_k _I[*t*_j _{VP}[*t*_k _V[*say* _{IP}[*t*_i _V[*arrived*]]]]]]]]]?
 *_{CP}[*Who*_i _C[*did*_j _{IP}[*you*_k _I[*t*_j _{VP}[*t*_k _V[*say* _{IP}[*Sam*_i _V[*arrived*]]]]]]]]]?]

⁶¹I use *she* to represent the feminine 3sg pronominal form at base level, assuming that subject pronouns are present at D-structure and not 'later' in the syntax: _{NP}[*she* _N[*house*]]]. At S-structure *she* amalgamates with Poss 's to derive *her house*: _{DP}[*her*_i _D['s] _{NP}[*t*_i _N[*house*]]]]]. The point is that it is illicit to have both *Jane* and *she* (a pronominal form representing *Jane*) in the same subject position at D-structure: *_{NP}[*Jane / she* _N[*house*]]]. (Cf. fn. 32 on the formation of possessive pronominal forms).

- (h) $_{AgrP}[She_i \text{ }_{Agr}[\text{does }_{VP}[t_i \text{ }_V[\text{exasperate him}]]]]$
 $*_{AgrP}[She_i \text{ }_{Agr}[\text{does }_{VP}[\text{my friend}_j \text{ }_V[\text{exasperate him}]]]]$
- (i) $_{ASP}[the \text{ thief}_i \text{ }_{ASP}[\text{have-en }_{VP}[t_i \text{ }_V[\text{take the money}]]]]$
 $*_{ASP}[the \text{ thief}_i \text{ }_{ASP}[\text{have-en }_{VP}[\text{the politician}_j \text{ }_V[\text{take the money}]]]]$

(vii) *Big Phrases not Small Clauses*

Small clause is not a viable or necessary category due to Premises (i) to (vi); it is rather a *big phrase*. That is, in examples such as:

(83) **D-Structures:**

- (a) She LOVE $_{NP}[\text{Jane }_N[\text{house}]]$
 (b) I BELIEVE $_{AP}[\text{Mark }_A[\text{incompetent}]]$
 (c) We SELL $_{PP}[\text{beer }_P[\text{on tap}]]$
 (d) I MAKE $_{VP}[\text{Nancy }_V[\text{cry}]]$

the complement phrases *NP*, *AP*, *PP*, and *VP* are in each case the *full* realisation of a phrasal structure according to an $_{XP}[\text{DP } X']$ schema. As such, they are not anomalous structures (i.e., 'small' clauses lacking *C* or *I*; cf. Chomsky 1981:107) but 'correct' ones (cf. Stowell 1981:258).⁶² Functional categories, as observed in section 1.3., are on the whole *ancillary* constituents in configurational structure and thus generally project only where their morphemes are necessary at surface structure. In (83) functional morphemes (and therefore functional projections) are not necessary to encode θ -relations; the matrix and embedded clauses are what Speas (1990:17-18) calls 'lexical clauses'. In (84), on the other hand, functional morphemes are structurally necessary to encode the notions of *possession*, *deixis*, *tense*, *agreement*, *conjunction*, *aspect*, etc.

(84) **S-Structures:**

- (a) She love(-s) $_{DP}[\text{Jane }_D[\text{'s }_NP[t \text{ }_N[\text{house}]]]]$
 (b) They suggest $_{DP}[e \text{ }_D[\text{this }_NP[e \text{ }_N[\text{solution}]]]]$
 (c) $_{IP}[\text{Martha }_I[\text{I }_VP[t \text{ }_V[\text{lectured on clitics}]]]]$
 (d) $_{AgrP}[She \text{ }_{Agr}[\text{does }_{TP}[t \text{ }_T[-\text{Past }_{VP}[t \text{ }_V[\text{exasperate him}]]]]]]$
 (e) I recall $_{CP}[e \text{ }_C[\text{that }_{IP}[\text{he }_I[\text{I }_VP[t \text{ }_V[\text{laughed}]]]]]]$
 (f) $_{AgrP}[\text{the thief}_i \text{ }_{Agr}[\text{had}_j \text{ }_{TP}[+\text{Past }_{ASP}[t_i \text{ }_{ASP}[t_j - t_k \text{ }_{VP}[t_i \text{ }_V[\text{tak}(-en)_k \text{ the money}]]]]]]]]$

⁶²The conventional analysis for 'small clauses' (after Williams 1974, 1975) is $_{SC}[\text{NP } XP]$ in GB-theory, with the subject nominal *adjoining* to an *XP* predicate and the *SC* taking the categorial status of the predicate: $_{XP}[\text{NP } XP]$ (cf. Chomsky 1981:106-7,134,167; 1986a:91; 1986b:84). Stowell (1981:257) proposes an internal subject for small clauses: $_{XP}[\text{NP } X']$.

Big phrases, then, have their subject specifier position triggered at base level by a [+Case] feature on a V^0 that selects a *propositional* complement. This causes the V^0 to become a *Spec-activating predicate*, in order to discharge its Case. The fact that the specifier position of X^{\max} is typically devoid of a subject nominal at underlying level is due to the special status of this position. This special status is that [Spec,XP] is a 'reserved' site for DP subjects, in accordance with Emonds' *Subject Principle* (cf. section 1.4.).

An overt [Spec,XP] is licensed in the course of a derivation only under the following conditions:⁶³

(85)

- (i) an overt [Spec,XP] is licensed at D-structure by a V head with a [+Acc] feature that selects a *propositional* phrasal complement. Licensing in this case is due to the θ -criterion. This is illustrated in (83).
- (ii) an overt [Spec,XP] is licensed at S-structure as a consequence of *move- α* . Licensing in this case is due to the Case Filter. This is illustrated in (84).

We conclude that the specifier position typically functions as a landing-site at S-Structure and only exceptionally functions as a filled site at D-structure.

The seven theoretical premises presented above will serve as the basis for our discussion of the specifier node in Chapter 2.

⁶³We noted in section 1.2.2. that θ -assignment and Case-assignment are the two principle licensing mechanisms in GB-theory.

Chapter 2: Asymmetries with the Spec position across categories

2.1. The position of the subject node in maximal projections and the 'Internal Subject' hypotheses

We saw in section 1.2.1. how the contents of the specifier position are rather irregular in current syntactic theorising, with the result that the [Spec,XP] position is often utilised to house any elements that are not easily placed in the X-bar schema. Stowell indirectly addressed this problem with his Subject Specifier hypothesis, and formulated the concept that subjects are 'internal' to their maximal projections. However, Stowell's subject specifier notion only addresses the *content* of the specifier node. The actual *position* of the subject specifier node is another unsettled issue. In some theorising (e.g., Stowell 1981, 1983; Hoekstra 1984; Kuroda 1986; Fukui and Speas 1986; Sportiche 1988; Fassi-Fehri 1988; Rizzi and Roberts 1989; Speas 1990) the subject specifier position is a sister to an X' predicate in accordance with conventional X-bar principles, where $XP = \text{Spec } X'$:

(86) $_{XP}[\text{Subj Spec } _{X'}[\text{Predicate}]]$

In other analyses (e.g., Zagana 1982; Manzini 1983; Kitagawa 1986; Koopman and Sportiche 1987, 1991), the subject specifier position is adjoined to an X^{\max} predicate:

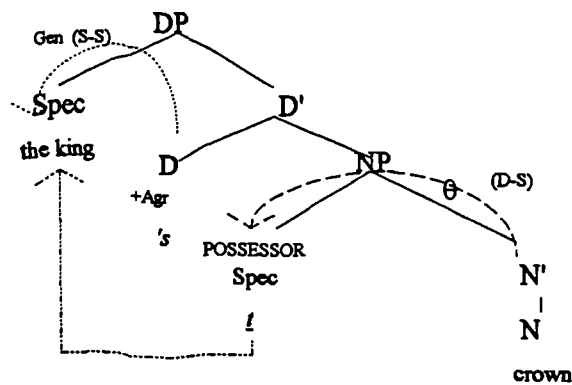
(87) $_{XP}[\text{Subj Spec } _{XP}[? \text{ } _{X'}[\text{Predicate}]]]$

In general, these analyses of subject position vary only at the base level and concur at the superficial level. Even so, the consequence is that, concerning subjects, asymmetric analyses of underlying phrasal structure are numerous. However, with the advent of the 'VP-Internal' (or 'Internal Subject') Hypothesis of recent work (e.g., Zagana 1982; Manzini 1983; Hoekstra 1984; Bennis 1986; Fukui and Speas 1986; Kuroda 1986; Kitagawa 1986; Koopman and Sportiche 1988, 1991; Sportiche 1988; Fassi-Fehri 1988; Rizzi and Roberts 1989; Speas 1990 et. al. in various earlier mss.) and the 'DP-Hypothesis' (Abney 1987), there does seem to be at least general agreement on the base-generation of subject nominals in the specifier position. For nominal phrases (e.g., *John's book*), Abney (1987) argues that subject DPs are base-generated as specifier to N' in NPs, (i.e., $_{NP}[\text{John } _{N'}[\text{book}]]$) and for clausal phrases (e.g., *John drinks beer*) Hoekstra (1984), Bennis (1986), Fukui and Speas (1986), Kuroda (1986), Sportiche (1988), Fassi-Fehri

(1988), Rizzi and Roberts (1989), and Speas (1990) suggest that subject DPs are base-generated as specifier to V' in VPs (i.e., $_{VP}[John \ v[drink \ beer]]$). As with Stowell's analysis of phrases, the motivation for this is theta theory: the subject DPs must originate 'internal to the projection of the θ -marking head' (Chomsky 1988a:17) in order to be θ -marked by this head at D-structure. In both nominal and verbal instances, the DP subject specifier then moves explicitly in order to get Case. Subject Case in English is assigned at S-structure by a leftwards Case-assigning functor: D in the instance of nominals (genitive Case) and I in the instance of verbals (nominative Case) (cf. Fukui and Speas 1986:142; Fassi-Fehri 1988:197; Ritter 1988:914).⁶⁴ This process is shown in figures (88) and (89), respectively.

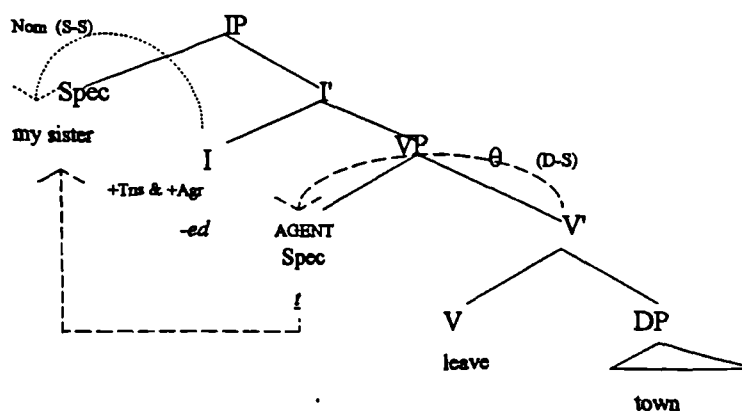
(88) nominal phrases

$NP[DP[the \ king] \ N[crown]] \Rightarrow DP[DP[the \ king] \ D['s \ NP[DP[t] \ N[crown]]]]$



(89) verbal phrases

$_{VP}[my \ sister \ v[LEAVE \ town]] \Rightarrow IP[my \ sister \ I[+Tns \ \& \ +Agr \ vP[t \ v[left \ town]]]]$



⁶⁴Fassi-Fehri and Ritter (based on proposals in Travis 1984 and Koopman 1984) note that directionality of Case-assignment by D and I seems to be parameterised across languages. For example, they argue that Case-assignment by D and I occurs to the *right* in Hebrew and in Standard Arabic, respectively; and Sproat (1985) argues that Case-assignment by I (and presumably D) occurs to the right in Irish and Welsh.

It has become more or less standard in the literature that **D** assigns genitive Case leftwards to *the king* in figure (88), and that **I** assigns nominative Case leftwards to *my sister* in figure (89).⁶⁵ Therefore we conclude that both nominal subject specifiers and verbal subject specifiers undergo the same *move- α* process at superficial level in order to satisfy the Case Filter. And, because the subject specifiers *the king* and *my sister* are *linked* (i.e., co-indexed with traces) to a Case-marked landing-site, the Visibility Condition is also satisfied at S-structure. The Visibility Condition, we recall from section 1.2.2., stipulates that an element is 'visible' for θ -marking only if it is in a Case-marked position or linked to such a position (cf. Chomsky 1986a:94).

We have seen from figures (88) and (89) how subject specifiers in NPs and VPs undergo forced movement in order to acquire Case at S-structure. However, this leaves open the question of what happens in the other two lexical categories, AP and PP. What is in the specifier position of these maximal projections underlyingly? If it is a nominal DP subject, does it also undergo movement in order to acquire Case at S-structure? And, in a *Subject Specifier* framework where DP specifiers normally precede their X' predicates in English linearity, why is it that in adjectival phrases the A' predicate often precedes rather than follows the subject nominal (cf. $_{AP}[a \text{ } _{A'}[fat] man]$ vs. $_{AP}[a man \text{ } _{A'}[fat]]$)? This doesn't occur with prepositional phrases in a Subject Specifier framework (cf. $_{PP}[the man \text{ } _{P'}[in distress]]$; $_{PP}[the man \text{ } _{PP}[e \text{ } _{P'}[on the ledge]]]$); the P' predicate occurs to the right of the subject specifier, as is predictable from the schema $_{XP}[DP \text{ } X']$.⁶⁶

I argue that for maximal phrasal symmetry, it is indeed desirable to extend the 'Internal Subject' hypotheses of Stowell 1981 (for all phrases), Abney 1987 (for nominals) and Hoekstra 1984 et al. (for verbals) to include APs and PPs as well as NPs and VPs.⁶⁷ Before continuing in this vein, it is worthwhile clarifying just what 'Internal Subject'

⁶⁵Actually, it is the agreement element of **D** and **I** that is the Case-marker: [+Agr] of **D** (realised by *Poss 's*) assigns genitive Case, and [+Agr] of **I** (realised by the 3sg inflection *-s*) assigns nominative Case. (Cf. Chomsky 1981:52,162, 1986a:188,194-5; Horrocks 1987:106; Abney 1987:78-9; Ritter 1988:914, 919 on *Poss 's* of **D** as a genitive Case-marker, and cf. Chomsky 1981:52, 162, 1986a:188; Koopman and Sportiche 1991:231; Hermon 1992:177; Ritter 1988:914; Rouveret 1991:375 on Agr of **I** as a nominative Case-marker).

⁶⁶Recall from (77) that PP *propositions* with a *filled* subject specifier position are distinct from PP complements and PP adjuncts with a *null* subject position (*nonpropositions*). In *I see* $_{PP}[the man \text{ } _{P'}[in distress]]$, *the man in distress* is a PP propositional complement to *SEE*; in *I see the man on the ledge*, on the other hand, there occurs either a PP propositional complement to *SEE* or a PP nonpropositional adjunct to the DP *the man*, depending on the semantics: cf. *I see* $_{PP}[the man \text{ } _{P'}[on the ledge]]$ where *the man on the ledge* specifies one particular man from the class of all men; and *I see* $_{DP}[the man] \text{ } _{PP}[e \text{ } _{P'}[on the ledge]]$ where *on the ledge* is a modifier adjunct specifying the location of the DP complement *the man*. And in $_{DP}[a man \text{ } _{PP}[e \text{ } _{P'}[of substance]]]$, the PP is a modifier complement to the DP *a man*.

⁶⁷I list advocates of the 'VP-Internal' hypothesis (symmetrical version) strictly in chronological order, not according to any particular prominence of publication.

means in the current literature concerning the base position of the subject. Although various authors have contributed to the notion of a 'VP-Internal' subject in the 1980s, Koopman and Sportiche's (1988) proposal in manuscript form is often taken as representative. However, Koopman and Sportiche (1988, 1991), Kitagawa (1986), Manzini (1983), Zagana (1982) and others adopt an analysis in which the DP subject is base-generated in [Spec,VP] but in a position which is *adjoined* to the VP: ${}_{VP}[DP \ {}_{VP}[V \ DP]]$. In this sense the DP subject can only be 'adjunctively internal' to the VP. *Contra* this perspective, Stowell's (1981, 1983) analysis of ${}_{XP}[DP \ X']$, encompassing VPs, gives us a 'truly internal' analysis of ${}_{VP}[DP \ V']$ for the base position of subjects. Hoekstra (1984), Bennis (1986), Fukui and Speas (1986), Kuroda (1986), Sportiche (1988), Fassi-Fehri (1988), Rizzi and Roberts (1989), and Speas (1990) all implicitly adopt Stowell's position in their analysis of VPs. And, from the number of authors in recent work adopting one position or another, the balance does seem to be accumulating in favour of Stowell's original (1981) 'Subject Specifier' analysis - i.e., ${}_{XP}[DP \ X']$ entails that $VP = {}_{VP}[DP \ V']$. The different analyses for the subject specifier of VP are discussed fully in section 2.2.

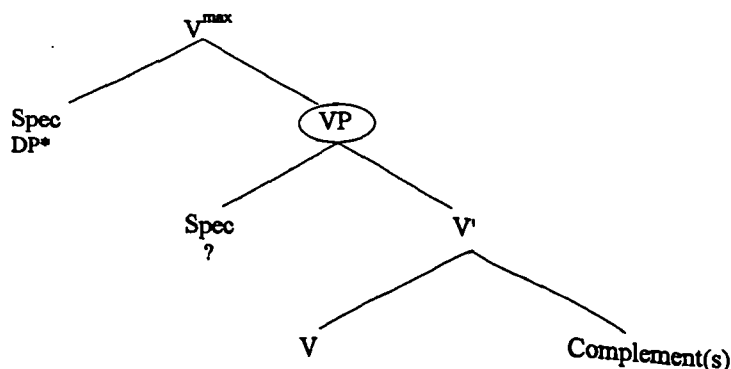
2.2. Subject specifiers in VPs

Our target, then, is universal structural symmetry. In order to fully standardise the internal structure of X^{\max} configurationally, we should start with the most pivotal of maximal projections, the VP. Currently there are at least three different hypotheses on the position of subjects in VP, which are outlined below. The fundamental difference amongst these analyses is whether they view the subject position as interior or exterior to the maximal projection of V (i.e. to VP).

2.2.1. The VP-Internal Hypothesis of Koopman and Sportiche (1988, 1991)

Here the subject DP is external to VP but putatively still within a maximal projection V^{\max} :

(90)



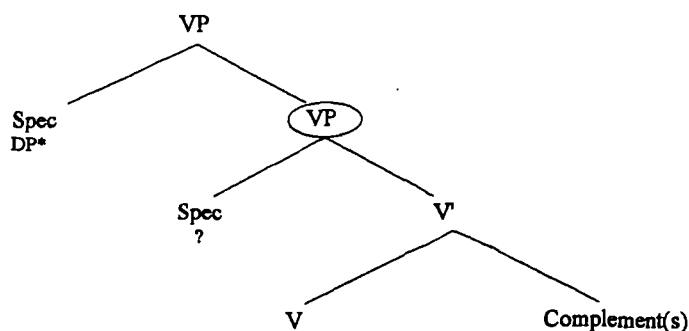
Koopman and Sportiche claim that the DP subject (DP*) is base-generated externally to the VP projection, but 'internal' to a higher, ultimate projection labelled V^{\max} . In their analysis VP is the *phrasal* projection of V (i.e., $VP = {}_{vp}[V \text{ Complement}(s)]$) and V^{\max} is the *maximal* projection of V (i.e., $V^{\max} = {}_{v^{\max}}[NP \text{ VP}]$).⁶⁸ However, this is contrary to X-bar theory on three counts. Firstly, if the DP subject is base-generated as a sister to the VP rather than as the dominated specifier of VP, it must be an *adjoined* position. If it is adjoined, the ultimate expansion should be the same category VP; yet it is something even higher: V^{\max} . V^{\max} is presumably different from VP for Koopman and Sportiche in that V^{\max} has an external argument within it (i.e., the adjoined DP* specifier). But this entails that the VP must have an empty internal specifier position, an unnecessary complication as well as uneconomical. Secondly, even if we accept that DP* is in the maximal projection of V, it is *not* in a θ (i.e. an *argument*) position, because it is not in the position of sister to a θ -marker (lexical *heads* and *predicates* are potential θ -markers; cf. Chomsky 1986a:97). In figure (90) the only potential θ -marker is the V' predicate. Thirdly, the circled VP in figure (90) constitutes a barrier for θ -marking due to minimality; θ -government is constrained by locality (cf. Chomsky 1986b:19).

2.2.2. The Internal Subject position of Zagona (1982), Manzini (1983), and Kitagawa (1986)

Zagona (1982), Manzini (1983) and Kitagawa (1986) adopt a slightly different position from Koopman and Sportiche (1988, 1991) in that the subject DP is a straightforward *adjunctive* subject specifier to VP and thus undisguisedly external. Predictably, the higher category is labelled VP, in accordance with conventional adjunctive processes, where an adjoined element merely expands another category without altering its identity. However, the subject DP in this analysis differs from other adjuncts in that it is assigned an (external) θ -role by VP.

⁶⁸cf. Koopman and Sportiche 1991:212, fn. 2. Safir (1982) makes a similar distinction between 'maximal projection', which is the highest X^{\max} in a given configuration (i.e., V^{\max} in figure (90)), and 'base maximal projection', which is the highest projection of X in the base for a given language (i.e., VP in figure (90)). Both Koopman and Sportiche and Safir imply that government is possible across VP but not across V^{\max} .

(91)

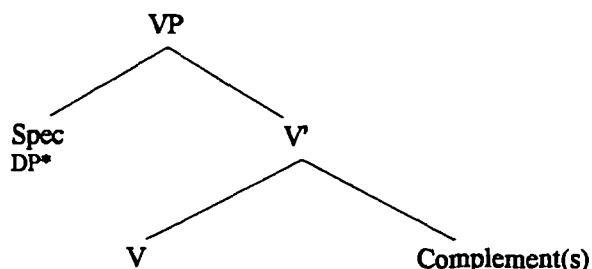


This analysis is thus problematic in that, where adjunction of a DP subject to a VP is posited, the same violations remain: DP*, if adjoined, is not in a θ -position (i.e., an *argument* position) in relation to a lexical head. If it is not in a θ -position it can not be θ -marked. It must, therefore, be a nonargument (i.e., not θ -marked) it is not a suitable candidate for the Case Filter, as only arguments (e.g., DPs) can receive Case. Finally, as with Koopman and Sportiche's (1988, 1991) analysis, the lower VP (circled) constitutes a barrier for local θ -marking by the lexical V' predicate. Thus both theta theory and Case theory are violated.

2.2.3. The Internal Subject position of Hoekstra (1984), Bennis (1986), Fukui and Speas (1986), Kuroda (1986), Sportiche (1988), Fassi-Fehri (1988), Rizzi and Roberts (1989), and Speas (1990)

The internal subject position of these authors is significantly different in that it posits a fully internal subject DP:

(92)



Here the DP* subject is a proper internal argument, i.e., a sister to a θ -marker (the V' predicate) and fully within the domain of VP. DP* is not an adjoined element so there is no need for 'indirect' θ -marking of an external subject over an X^{\max} barrier

(cf. Chomsky 1981:37-8, 1986a:59-60, 1986b:13-14 on indirect θ -marking). Figure (92) has the advantage of satisfying both theta and Case theories, whilst at the same time maintaining internal phrasal symmetry.

2.2.3.1. *Be* as a raising verb

The V' predicate in (92) directly θ -marks its DP specifier subject at the base level and this subject specifier moves only in cases where it can not get Case in its base position (e.g., where the selectional head is intransitive, such as aspectual or passive *be*).

(93)

- | | |
|---|---|
| (a) I hear $_{VP}$ [Jim $_{V}$ [cough]] | Exceptional Case-marking by <i>hear</i> : <i>move-α</i> not motivated |
| (b) BE $_{VP}$ [Jim $_{V}$ [think(-ing)]] | Aspectual <i>be</i> intransitive and thus not an (accusative) Case-marker for the [Spec,VP] position; <i>move-α</i> motivated for Case-marking of subject <i>Jim</i> |
| (c) BE $_{VP}$ [<i>e</i> $_{V}$ [beat(-en) Tom]] | (i) passive <i>be</i> does not take an external argument; ⁶⁹
(ii) passive <i>be</i> intransitive and thus not an (accusative) Case-marker for the [Spec,VP] position;
(iii) passive morphology on <i>BEAT</i> 'absorbs' accusative Case for the [Obj,VP] position (cf. Chomsky 1981:124);
(iv) <i>move-α</i> is motivated twice for Case-marking of object <i>Tom</i> (first to the specifier position of VP, where neither <i>beat</i> nor intransitive <i>be</i> can assign Case, then to [Spec,IP] for Case-marking by Agr of I (cf. fn. 65) ⁷⁰ |

For the derivation of (93) (b), the DP subject specifier *Jim* raises to the Case-marked position of [Spec,IP]: $Jim_i \text{ } \uparrow [iS_j \text{ } AspP [t_i \text{ } Asp [t_j - t_k \text{ } VP [t_i \text{ } V [think(-ing_k)]]]]]$. For (90) (c), the object nominal *Tom* raises: $Tom_i \text{ } \uparrow [iS_j \text{ } PassP [t_i \text{ } Pass [t_j - t_k \text{ } VP [t_i \text{ } V [beat(-en_k) t_i]]]]]$.

The analysis of *be* as a raising verb is still somewhat controversial, but I argue that it is justified in view of the licensing requirements of theta theory and Case theory. The θ -criterion we recall, requires that arguments have a θ -role at D-structure, and the Case Filter requires that argument DPs have Case. In (93) (b) and (c), let us assume that *BE*

⁶⁹Recall that, in our *Subject Specifier* framework, 'external argument' means external to X' but *internal* to XP (cf. fn. 28).

⁷⁰In GB-theory, passive morphology on a verb is said to 'absorb Case' (cf. Chomsky 1981:124); i.e., as *BEAT* in (93c) exhibits the *BE-en* morphology of the passive, *BEAT* can not assign accusative Case to *Tom*.

selects a Propositional VP complement at D-structure. As we observed in section 1.2.2., this means that the DP subject specifiers in the complement VPs can get a θ -role only from the V' predicates. Hence they must be base-generated in the [Spec,VP] position. Concerning Case, we noted in section 1.4. that Propositions are 'Case-resistant'. Therefore, the complement VPs that *be* selects do not require Case. But The DP subjects (and objects) internal to these complement VPs do. This motivates their raising to [Spec,IP].

BE, because of its 'dummy' nature (i.e., as primarily a carrier for [\pm Tns] and [\pm Agr] in aspectual, passive, and copular constructions), is traditionally analysed as an 'intransitive' verb. However, in (93) (b) and (c) we see that *BE* takes an 'object' VP argument; that is, *be* has a subcategorisation frame of V, ___ VP. Consequently, Stowell (1978:465-70) analyses *be* as a *transitive* verb syntactically. We can adapt Stowell's analysis to the *Barriers* framework by observing that whilst *be* governs its VP complement, it does not *L-mark* it. *L-marking* (Chomsky 1986b:13) is the relation whereby a *lexical* governor governs its complement (θ -marking and Case-marking being characteristics of lexical government). As dummy *be* is not lexical, it can not L-mark its VP complement in (93) (b) and (c). Hence, *be* θ -governs a VP complement (i.e., assigns a Propositional θ -role to it) but does not L-mark it (i.e., θ -mark and Case-mark it).⁷¹

In addition to the theoretical arguments for *be* as a transitive raising verb, the following data provide evidence that the D-structures in (93) (b) and (c) are correct (cf. Stowell 1978:466):

- (94) (a) **Mabel* was_{DP}[*a pig*] roasted
 (b) **John* is_{DP}[*an old man*] sleeping
 (c) **Bill* is_{DP}[*a friend of mine*] sick
 (d) **An American flag* was_{DP}[*the Russian constitution*] planted on the moon
 (e) **An angry lion* has been_{DP}[*that hungry bear*] running wild
 (f) **A cow* may be_{DP}[*your sick calf*] in the barn

Stowell implicitly interprets raising *be* as taking a *small clause* complement; Couquaux (1981:33-6) adopts this position for copular *be* in French, as do Burzio (1986:148-54), Longobardi (1983:1159-64), and Moro (1989:90-6) for copular *be* in Italian. That is to say, clausal structures such as *he is a teacher*, *he is dead*, *he is in the yard*, have underlying

⁷¹I note here that Chomsky 1986b:20 assumes that I θ -governs VP; I would say that I selects an XP complement and that this XP is a proposition *by virtue of its lexical X' predicate*, which takes a subject argument. A lexical predicate + a subject argument = a proposition (cf. section 1.4.). Hence I governs VP but the θ -role for this VP (i.e., *Proposition*) derives from the lexical V head and not from I.

structures of BE_{NP} [*he* $_N$ [*teacher*]], BE_{AP} [*he* $_A$ [*dead*]], BE_{PP} [*he* $_P$ [*in the yard*]], respectively. Such analyses provide support for our Subject Specifier framework. In addition, cross-linguistic data suggest that internal subjects are the correct form. In Arabic and Russian, for example, dummy *be* is not even required in the present tense, lexemes alone forming a sufficient semantic unit: e.g., *Hasan kariim*; *Ivan stroityel'* ('Hasan is generous; Ivan is (a) builder'). In these constructions, [-Past] is taken as the unmarked case and the copula is inserted at PF only to indicate the marked instance of [+Past]:

(95) Standard Arabic

<i>Present</i>	<i>Past</i>
(a) Zayd-un taajir-un ⁷² Zayd-Nom taajir-Nom Zayd (is) (a) merchant.	(a') kaan-a Zayd-un taajir-an was-3sg Zayd-Nom taajir-Acc Zayd was (a) merchant.
(b) Zayd-un mariid-un Zayd-Nom ill-Nom Zayd (is) ill.	(b') kaan-a Zayd-un mariid-an was-3sg Zayd-Nom ill-Acc Zayd was ill.
(c) Zayd fii l-funduq-i Zayd in the hotel-Gen Zayd (is) in the hotel.	(c') kaan-a Zayd fii l-funduq-i was-3sg Zayd in the-hotel-Gen Zayd was in the hotel

(96) Russian

<i>Present</i>	<i>Past</i>
(a) Sergej-Ø trous-Ø Sergej-Nom coward-Nom Sergej (is) (a) coward	(a') Sergej-Ø byl trous-Nom Sergej-Nom was coward-Nom Sergej was a coward
(b) Sergej-Ø nyeshchastliv-Ø Sergej-Nom unhappy-Nom Sergej (is) unhappy	(b') Sergej-Ø byl nyeshchastliv-Ø Sergej-Nom was unhappy-Nom Sergej was unhappy
(c) Sergej-Ø v teatr-e Sergej-Nom at theatre-Loc(ative) Sergej (is) at (a) theatre	(c') Sergej-Ø byl v teatr-e Sergej-Nom was at theatre-Loc Sergej was at (the) theatre

⁷²It is interesting to note that in the Arabic and Russian examples cited, determiners (D) and dummy *be* (I) can be dropped in the unmarked case of [-Definite] and [-Past]; giving credence to my claim that functional categories are *ancillary* elements in the syntax (cf. section 1.3).

According to the Case directionality of the language, Case-marking in the simple present for the Russian and Arabic examples would occur either leftwards or rightwards from Agr of I to the subject specifier of the X^{\max} complement: i.e., ${}_{IP} [DP_i \ {}_{I} [X^{\max} [t_i \ {}_X [X^{(N, V, A, P)}]]]]$ or ${}_{IP} [\ {}_{I} [X^{\max} [DP \ {}_X [X^{(N, V, A, P)}]]]]$. From the past examples in (96) (a') - (c') we see that the subject DP *Sergei* must raise to the [Spec,IP] position for Case-marking; from this we conclude that Case-marking of subject DPs in Russian, as in English, is to the left for functional categories: ${}_{IP} [DP_i \ {}_{I} [X^{\max} [t_i \ {}_X [X^{(N, V, A, P)}]]]]$. From the past examples in (95) (a') - (c'), we conclude that Case-marking of subject DPs in Arabic is uniformly to the right (cf. fn. 64): ${}_{IP} [\ {}_{I} [X^{\max} [DP \ {}_X [X^{(N, V, A, P)}]]]]$.

In addition, whilst Arabic and Russian both exhibit similar Case-making in the simple present tense examples, in the Arabic simple past with *be* there is a curious discrepancy. This is that the subject nominal (e.g., *Zayd*) and the predicate complement (e.g., *taajir* ('merchant'); *mariid* ('ill')) have different Case-marks. We might expect that a subject nominal and a predicate nominal would agree in Case, as in the Russian examples in (96) (a') and (b').⁷³ However, in the Arabic examples in (95) (a') and (b'), the subject nominal is in nominative Case whilst the predicate complement is in accusative Case. Fassi-Fehri (1988:196-20) claims that this is due to a complex copular structure in past tense, where 'inherent' Case is assigned rightwards to a predicate complement and structural Case is assigned rightwards to a DP subject. Let us examine his analysis of (95) (b'). His position is that in the copular past in Arabic, I takes a headless VP complement, rather than subcategorising for an AP or NP complement directly, as in ${}_{IP} [\ {}_{I} [BE \ {}_{NP} [Zayd \ {}_{NP} [taajir]]]]$ or ${}_{IP} [\ {}_{I} [BE \ {}_{AP} [Zayd \ {}_{A'} [mariid]]]]$. V of this VP takes an 'ip' complement (i.e., a 'small' inflection phrase where the head *i* consists only of gender and number features). *i* of *ip* in turn takes a 'small clause' AP complement (i.e., ${}_{AP} [Zayd \ mariid]$ ('Zayd ill')). This D-structure is shown in (97).

(97) ${}_{IP} [\ {}_{I} [kaana \ {}_{VP} [\ v [e \ {}_{ip} [\ {}_{I} [i \ {}_{AP} [Zayd \ {}_{A'} [mariid]]]]]]]]]$

Taking *be* to be generated in I (cf. fn. 10), and that Case is uniformly assigned *rightwards* in Arabic, Agr of I assigns nominative Case to the *Zayd* DP *in situ*. At the same time the empty V head assigns 'inherent' accusative Case to the 'object' *ip*. This requires some explanation. In the GB-model, Agr of I is 'basically nominal in character', i.e. [+N, -V] in nature. It is this nominal character of Agr that is said to assign nominative Case to a nominal subject (cf. Chomsky 1981:52,162). By extension to this notion, presumably, Fassi-Fehri suggests that Agr (a *nominal* element) can also *receive* Case. Thus Agr of small *i* projects to *ip* and it is this *ip* which receives 'inherent' accusative Case from the empty head V in (97).

⁷³Although in the Russian simple past with *be*, a predicate nominal or adjective may also carry *instrumental* Case. However, this is to suggest the semantic distinction of a state or property or characteristic with some temporal restriction. In the Arabic examples the Case on the predicate complements is purely structural.

The inherent Case from V, however, being non-structural, stops at the level of *ip*. So although Case 'percolates' down to *i*, it does not percolate further to *AP*, either to the head A of AP or to the subject specifier *Zayd* of AP.⁷⁴ This motivates two movements. The head A *mariid* moves to *i* in order to morphologically support the Case-mark on Agr of *i*, and the DP *Zayd* moves to the specifier position of VP for Case-marking by big I. In [Spec,VP] *Zayd* is nominative Case-marked to the right by I of IP. Small *i* of *ip* can not Case-mark *Zayd in situ* because *i* is [-Tense] (recall that small *i* consists of only gender and number features), and Fassi-Fehri claims that it is a *tensed Agr*, even in the presence of an empty verbal head, that is the actual nominative Case-assigner. And as there is no verbal head to receive tense, I discharges its [+Past] feature onto the copula *kaana* ('was') in I (cf. fn. 7). The D-structure and the S-structure for *kaana Zayd-un mariid-an* are shown together in (98).

- (98) (i) $IP[\text{r}[kaana \text{ } VP[\text{v}[e \text{ } ip[\text{i}[i \text{ } AP[Zayd \text{ } A[mariid]]]]]]]]]$
 (ii) $IP[\text{r}[kaana \text{ } VP[Zayd_i \text{ } v[e \text{ } ip[t_i \text{ } i[mariid}_j \text{ } AP[t_i \text{ } A[t_j]]]]]]]]$

Finally, the fact that inherent Case from V does not percolate beyond *i* of *ip* (i.e., to the [Spec,*ip*] position or to AP) ensures that there is no Case conflict between the accusative Case that *Zayd* would receive from percolation when passing through the [Spec,*ip*] position, and the nominative Case that a subject nominal requires. After the two movements of A to *i* and of the DP *Zayd* to [Spec,VP], the resultant derivation is a nominative subject and an accusative predicate complement, as in (95) (b').

We conclude our discussion of copular *be* with a serviceable generalisation. The phenomenon of raising *be* taking a lexical X^{\max} complement with an overt subject specifier is expressed in *Burzio's generalisation* (Burzio 1986:178-9, 184) for unaccusatives:⁷⁵

⁷⁴There are several problems with this analysis, not the least of which it is stipulative, although Fassi-Fehri does give evidence that structural Case percolates downwards in the case of a full lexical verb like *think*. There is also the question of the licensing of the empty V head.

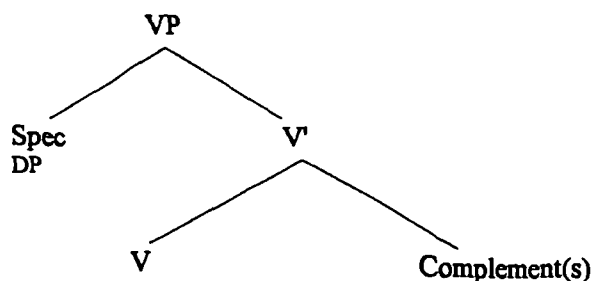
⁷⁵An *unaccusative* is an intransitive predicate (V or A) which has only an internal argument (i.e., an argument internal to the X' predicate). Due to their lack of transitivity (i.e., Latin *tansire*; the 'passing across' of the action of the verb from an Actor to a Goal), unaccusatives do not have a θ -role to assign to a subject argument and do not have accusative Case to assign to a complement argument. Raising is thus forced in order for a DP to the right of an unaccusative to get Case: cf. *the ship is t huge*, *the ship is t leaning*, *the ship was wrecked t*, *the ship sank t*. In the unaccusative class are passive verbs such as *be*, *get*, and *have* (*John was killed t*, *John got arrested t*, *John had his wound bandaged t*); copulas such as *be*, *become*, and *turn* (*John is t a teacher*, *John became t ill*, *John turned t nasty*); raising predicates such as *seem*, *appear*, *tend*, and *likely* (*John seems t nice*, *John appeared t in the doorway*, *John tends t to be stingy*, *John is likely t to be late*); middle verbs such as *sell*, *read*, *translate*, and *transmit* (*classical CDs sell t well*, *the book reads t easily*, *Yup'ik translates t with difficulty*, *messages transmit t quickly on the internet*); ergatives such as *sink*, *melt*, and *roll* (*the ship sank t*, *the ice melted t*, *the ball rolled t down the hill*); and existential predicates such as *emerge*, *exist*, and *follow* (*there emerged t a problem*, *there exists t a solution somewhere*, *there follows t a short description*).

(i) a verb which lacks an external argument fails to assign accusative Case; and (ii) a verb which fails to assign accusative Case fails to θ -mark an external argument. Hence the subject DP of an unaccusative must be base-generated in its lexical X^{\max} for a θ -role, and must raise to [Spec,IP] for a Case-mark.

Due to the 'Subject Specifier' framework adopted throughout this thesis and the widening acceptance of the 'Internal Subject' hypothesis for V^{\max} , I adopt a raising analysis for unaccusatives in general in English. However, I would add the slight modification that, rather than taking a *small clause* complement, unaccusatives such as copular *be* take a *big phrase* complement (i.e., an X^{\max} with a filled subject specifier position - recall section 1.5. (vii)). With this perspective, 'small clause' as well as 'clause' can be taken as redundant categorial labels (cf. section 1.5. (i)). *IP* and *CP* (*clausal* categories in GB-theory; cf. Chomsky 1986b:3) are merely the functional category expansions of underlying phrasal propositions.⁷⁶

From the theta theory and Case theory arguments presented in section 2.2.3.1., the VP analysis in figure (92) is most in keeping with the spirit of a symmetrical *Subject Specifier* framework. This is repeated as figure (99):

(99)



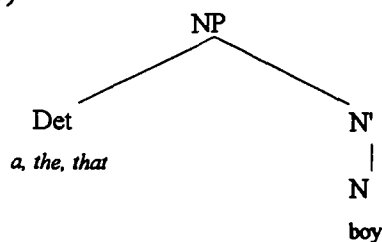
2.3. Subject specifiers in NPs

Nominal analyses were revolutionised in 1987 with Abney's 'DP-Analysis' (Abney 1987:25-88), in the same way that sentential analyses were revolutionised in 1986 with Chomsky's 'TP-Analysis' (Chomsky 1986b:3). [Spec,NP] had traditionally been synonymous with [Det,NP] in the Extended Standard Theory of generative grammar

⁷⁶In GB-theory the conventional criterion for a *clausal* category is that it is an expansion of **I** (cf. Chomsky 1986b:3); I claim that **I** is not necessary in order for a phrase to constitute a proposition.

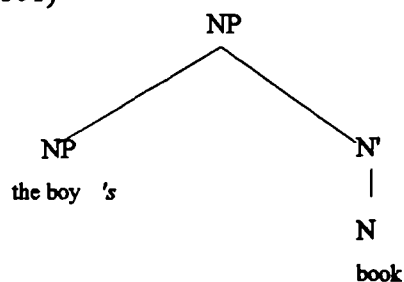
(cf. Chomsky 1965:85-6; 1970:164). Nominal structures such as *a boy*, *the boy*, *that boy* would be analysed with *a*, *the*, and *that* in Det:

(100)

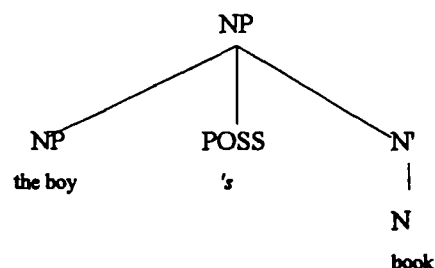


However, with possessive nominals such as *the boy's book* an analytical problem arises. *The boy* is logically the subject of *the book* but is nothing like the *a*, *the*, or *that* categorially. Yet it was traditionally put in or near what was usually the Det position in various analyses.⁷⁷

(101)



(102)



This was clearly an asymmetric riddle for generative grammar. We can see from the analyses of figures (101) and (102) that *Poss 's* doesn't fit anywhere predictably; it appears either simply attached to the subject *the boy* in figure (101) or as an *ad hoc*, 'orphan' node in figure (102).

The problem was accentuated when Chomsky proposed in *Barriers* that [Spec,XP] is an X² position (Chomsky 1986b:3). With this proposal both non-possessive nominals (*a boy*) and possessive nominals (*the boy's book*) are asymmetric as they are analysed in figures (100) to (102). In *a boy* of figure (100), the determiner *a* is an X⁰ element occurring in [Spec,NP], an X² position.⁷⁸ In *the boy's book* of figure (101) the compound element *the boy's* (NP + *Poss 's*) is neither X⁰ nor X², yet it appears in the [Spec,NP] position.

⁷⁷Cf. Chomsky 1970:154,1986a:63,188,195; Jackendoff 1977:11; Haegeman 1991:119 on the nominal subject *plus Poss 's* in Det; Horrocks 1987:64,106 on *Poss 's* in an autonomous node of its own.

⁷⁸This observation is to be credited to Abney 1987:74-6.

In figure (102), *the boy* is an X² element but this forces the 's morpheme into a completely unpredictable POSS node. In addition to these asymmetries, both determiners (*a*) and subjects (*the boy*) seem to be competing for the [Spec,NP] position.

Theta theory was to provide a partial answer to this riddle. Chomsky, following earlier work by others, suggested in *Knowledge of Language* that a Possessor θ -role in possessive nominals is assigned this θ -role under government by the Possessee noun (cf. Chomsky 1986a:195). That is to say, the subject argument in prenominal position in a possessive NP receives a Possessor θ -role from the lexical N' composite that follows it: NP[_{POSSessor} [NP] _{POSSessee} [N']]. Figure (103) gives an example of the proposed θ -relations in a possessive nominal at D-structure.

(103) Possessor Possessee
 NP[(*the*) boy⁷⁹ ('s) N'[book]]

We can now postulate that if the DP subject *the boy* receives a θ -role from the Possessee *book*, then Ns (and their N' projections) must be predicates in English in the same way that Vs and As are (recall that this claim was made in section 1.4.). This supports the Stowellian concept that subjects are internal to a categorial projection.

Case-marking underlies this assumption about θ -marking of the subject DP; Case as an S-Structure condition gives us a surface indication of D-structure θ -relations.⁸⁰ In figures (101) and (102), the subject DP *the boy* is Case-marked genitive (i.e., possessive) by the *Poss 's* morpheme.⁸¹ If (*the*) *boy* is genitive Case-marked at S-structure, then (*the*) *boy* must receive a Possessor θ -role at D-structure. It must, therefore, be a Possessor subject. There is ample morphological evidence from genitive Case-marking cross-linguistically to suggest that *possession* is the typical quality expressed by a DP modifier of N. Some examples are given in (104) - (111).

⁷⁹Recall from section 1.3. that in our framework, determiners and other functional category morphemes are inserted at PF, therefore they are not present at D-structure.

⁸⁰Chomsky proposes that nominative and accusative are configurational or 'structural' Cases, assigned at S-structure, whilst genitive and oblique (i.e., object of preposition) Cases are θ -associated or 'inherent' Cases assigned at D-structure (cf. Chomsky 1981:94, 183; 1986a:193-4). However, the overt morphological realisation of Case occurs only at S-structure in English (as evidenced by inflectional morphology - e.g., nominative *he*, accusative *him*, genitive *his* or *the boy's*, oblique *him*) and there is no empirical evidence of overt morphological realisation of Case at D-structure (cf. Lasnik and Uriagereka 1988:12; Cook 1988:139; Haegeman 1991:164-5). Therefore, for the purposes of this discussion, I treat all Cases as S-structure phenomena (cf. Ritter 1988:914 on D and I being structural Case-assigners).

As for underlying θ -roles, in English nominative Case generally indicates an Agent; accusative Case generally indicates a Patient; oblique Case generally indicates a Patient of a preposition, dative Case generally indicates a secondary Patient, and genitive Case generally indicates a Possessor.

⁸¹Actually, by Agr of D, which is realised as *Poss 's* (cf. fn.65) Cf. Chomsky 1986a:188, 194-5; Horrocks 1987:106; Abney 1987:78-9 on *Poss 's* being a genitive Case-marker.

- (111) *sono otokonokono hon* Japanese
 the man-child-Gen book
 'the boy's book'
- kareno hon*
 he-Gen book
 'his book'

It is semantically evident that *the boy* is the possessor of the book in the examples (104) to (111). Syntactically, the possessive inflection on the nominal and pronominal forms reflect this in each case.

However, whilst (103) is a reasonable proposal for Possessor θ -marking of the subject in possessive NPs, the picture is still not complete. Theta theory and Case theory are satisfied (i.e., by the assignment of a Possessor θ -role by the N' predicate and by the assignment of genitive Case by *Poss 's*) but X-bar theory is not: the *Poss 's* element is still without a node of its own and so is outside of the X-bar schema. (103) is repeated here in order to illustrate this:

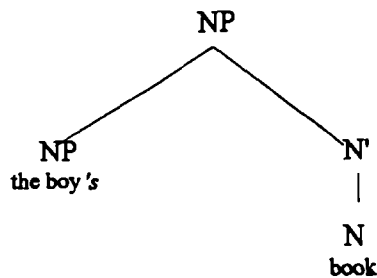
- (103) Possessor Possessee
 NP[John ('s) N[story]]

This controversial *Poss* problem fuelled Abney's notion that *Poss 's* must be in a separate node (**D**) that projects to its own maximal expansion, DP. Abney's 'DP-Analysis' subjected nominals to a radical re-analysis of their underlying and superficial structure.

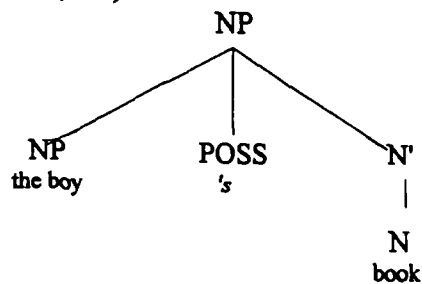
2.3.1. The DP-Analysis and [Spec,NP]

As we have seen in the preceding section, the *Poss 's* node of noun phrases has long been problematic in generative grammar. Prior to Abney's 'DP-Hypothesis', there was no node to house *Poss 's* that would symmetrically accord with conventional X-bar principles, i.e., that $XP = \text{Spec } X'$ and $X' = X \text{ C(omplement(s))}$. The possessive NP analyses in figures (101) and (102), repeated here,

(101)



(102)

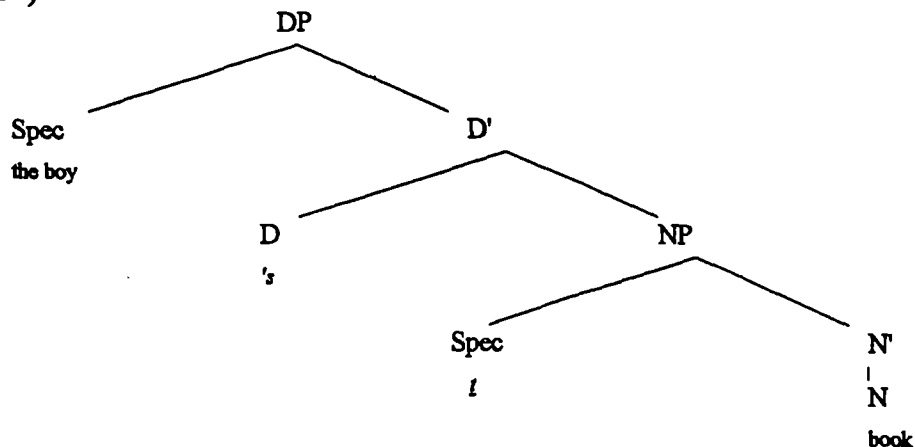


are asymmetrical because they:

- i) posit an ad-hoc POSS position which was outside of X-bar predictability (either *stuck on* to the subject NP; or *stuck in* between NP and N')
- ii) posit a subject NP in the conventional Det⁰ (determiner) node

Abney's 'DP-Analysis' addresses this problematic *Poss 's* node of noun phrases by claiming that *Poss 's* occupies the D (Det) node along with other determiner-like elements such as *a, the, this, those*. His proposal is that Det or D is *not* synonymous with [Spec,NP] (cf. Chomsky 1970:164) but is rather the head of its own phrasal projection, DP.⁸² This has the advantage of placing *Poss 's* into a categorial node already familiar to generative theory (i.e., Det or D) and of making internal nominal structure symmetrical (i.e., configurationally uniform) within X-bar theory. That is, rather than the asymmetric nominal representation of figures (101) and 102), Abney proposes a nominal structure of:

(112)

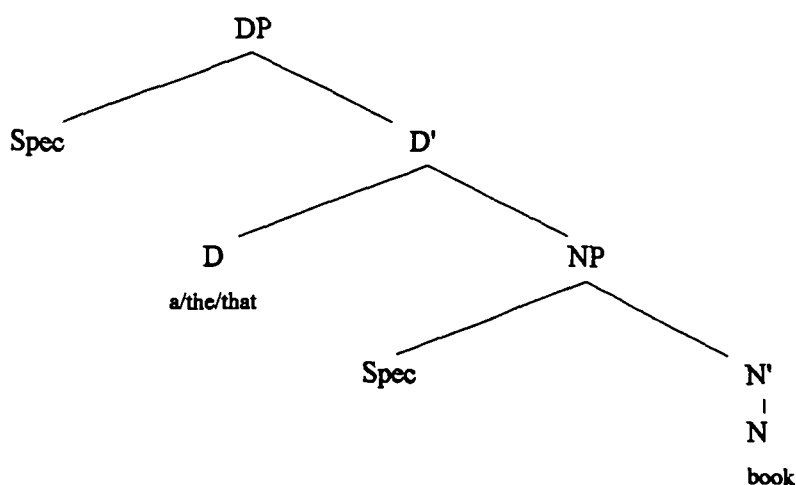


⁸²Others had advocated a similar idea that determiners head NP (cf. Brame 1981,1982; Hudson 1984; Fukui and Speas 1986), but Abney was the first to systematically formulate D as head of nominals into DP.

The Spec positions of both NP and DP in Abney's framework are not available for Det elements because they are the site for nominal subjects, in accordance with our Subject Specifier arguments throughout this chapter. In the DP-Analysis, the superficial subject of DP (i.e., *the boy*) is the underlying subject of NP, which raises in order to get genitive Case from Agr of D (cf. fn. 65). Thus Spec \neq Det, and Spec houses *subject* Specifier elements while Det or D houses the traditional determiner terms plus *Poss 's*. [Spec,NP] is therefore equivalent to [Subj,NP] in Abney's framework; [Spec,DP] is purely a vacant landing-site; and [D,DP] is equivalent to Det or *Poss 's*. We recall from fns. 45 and 56 that a subject specifier in a possessive nominal is motivated by the θ -criterion: if the head N of NP carries a feature of [+Possessed] (or a θ -role of *Possessee*), it must discharge a Possessor θ -role onto a subject argument in the [Spec,NP] position. In the DP-Analysis this Possessor subject then raises to [Spec,DP] for genitive Case-marking by D at S-structure, which in turn is realised by *Poss 's* at PF.⁸³

Figure (113) shows lexical determiners in the D node instead of *Poss 's*; there are co-occurrence restrictions holding in English which prevent the presence of both.⁸⁴

(113)



⁸³DPs, therefore, do not require a Spec-activating predicate to their left in order to have an overt subject specifier; a Possessor subject is generated from within.

⁸⁴The possessive morpheme (i.e., *'s*) and lexical determiners (e.g., *a/the/that*) are mutually exclusive in English, due to the fact that English does not permit the co-occurrence of possession and deixis: **Peter's the book*. Note that possession and deixis are *not* incompatible in, for example, Hungarian, where the possessor noun takes a dative suffix and the possessed noun can be definite as well as possessed (cf. Abney 1987:85 on *Poss 's* being analysed as a Case-marker but not as a determiner in Hungarian):

Péter-*nek* a könyv-je
 Peter-Dat the book-Poss
 'Peter's (the) book'

I should note here that it is somewhat controversial whether functional category morphemes (e.g., lexical determiners or *Poss 's* in *D*) are present at *D*-structure or inserted in the course of a derivation. Recall from section 1.3. my position (based on Emonds' principle of Late Lexical Insertion) that many functional category morphemes are PF insertions which occur after any *move- α* operations. With this viewpoint we can conceive of functional categories and their projections as being 'layered' over the core lexical categories of *N*, *V*, *A*, *P* at the base level of representation. As they are primarily *ancillary* in nature, functional categories are 'dormant' until they are triggered at PF as a consequence of movement or insertion processes.⁸⁵ *D* and *DP*, therefore, are activated at PF (i) by *move- α* of *John* into [*Spec,DP*] and (ii) by the insertion of *Poss 's* into [*D,DP*]. Not everyone shares this view, however; Abney, eschewing late insertion processes, takes the opposite position that the *Poss 's* morpheme is present at *D*-structure.⁸⁶ But he states that his theory of an underlying *'s* is not critical to his overall analysis (cf. Abney 1987:85).

Another point that should be mentioned concerns the status of *NPs* and *DPs*. Following our observation in section 2.3. that Case-marking is an *S*-structure phenomenon, in our discussion *NPs* will refer to Caseless *D*-structure categories whilst *DPs* will refer to Case-marked *S*-structure *arguments*. In Abney's framework, *NPs* are a constituent of *DP*; *NPs* are not Case-marked as they do not occur in Case-marked positions. In figure (112) the *DP* subject specifier *the boy* of the *NP* *NP[the boy N[book]]* is Caseless until it raises to a (genitive) Case-marked position to the left of *D*: *DP[the boy D['s NP[t N[book]]]*. However, the embedded *NP* (i.e., *NP[t N[book]]*) that *the boy* vacates does not move and remains Caseless. Furthermore, when there is an external Case-marker, as in *I took DP[the boy D['s NP[t book]]]* or *I took DP[e D[the NP[e book]]]*, *DP* acts as a barrier for Case-marking of the embedded *NP* and it is the *maximal* constituent (i.e., the containing *DP*) that receives accusative Case from the *V took* and is an argument, not the *NP* inside it. Thus we see that *NP*, as a complement to *D* of *DP*, is never in a Case-marked position. *NPs* of *DPs*, therefore, can be considered Caseless nominals whilst their containing *DPs* are Case-marked arguments (cf. Abney 1987: 66-7, 297, 349; Stowell 1989:246; Radford 1990:90-1, 171, 242, 254).

⁸⁵When functional categories are triggered by movement they act as landing-sites (e.g., for *DP-movement* of subject nominals into [*Spec,DP*] or [*Spec,IP*] and for *WH-movement* into [*Spec,CP*]); when they are triggered by insertion they act as filling-sites (e.g., for insertion of bound/free morphemes such as *Poss 's* or lexical determiners in *D*, dummy *do* and dummy *be* in *I*, etc).

⁸⁶Abney prefers a conceptualisation where *D*-structure can be "read off" *S*-structure (cf. Abney 1987:85).

2.4. Subject Specifiers in APs

The [Spec,AP] position in generative grammar has generally been held to house modifiers which vary in both categorial type (e.g., *A*, *N*) and status (e.g., X^0 or X^2). These are:

- (i) degree words or 'intensifiers' of some sort, such as *very*, *so*, *too*, *as*, *more*, *most*, *less*, *least*, *quite*, *how*, *somewhat*, *rather*, *really*, *this*, *that*, *enough* (cf. Jackendoff 1977:143-6; Emonds 1985:18; Emonds 1986:259-65; Radford 1988:241-6).

- (114) *very* fat
so stupid
too hot
as cold as the Arctic
more beautiful
most significant
less important
least qualified
quite slowly
how ridiculously⁸⁷
somewhat hesitant
rather quickly
really fast
most urgently
this big
that stupid
tall *enough*⁸⁸

- (ii) measure phrases such as *four yards*, *seven miles*, *twenty metres*, *ten litres*, *fifty years*, *three inches*, *five feet* (cf. Jackendoff 1977:137, 143).

- (115) *four yards* long
seven miles wide
twenty metres deep
ten litres full
fifty years old

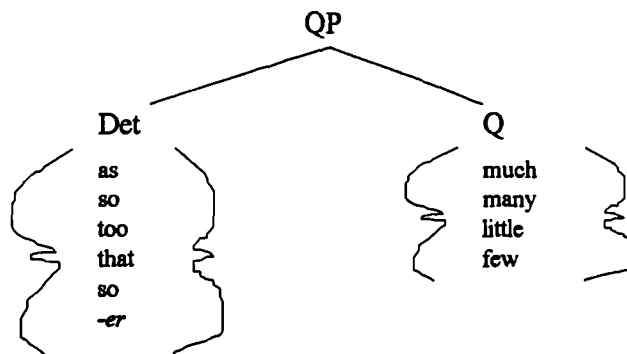
⁸⁷Cf. Emonds 1970:111-24; 1986:263-5 on adverbial elements being *A* elements categorially, with an optional *-ly* suffix.

⁸⁸Emonds (1986:260) notes that by an idiosyncrasy of Germanic languages, the degree word *enough* follows rather than precedes the adjective it modifies: *tall enough* vs. **enough tall*. He observes that in French, a Romance language, *assez* (counterpart to *enough*) precedes the adjective: *assez fort* vs. **fort assez*.

three inches thick
five feet broad

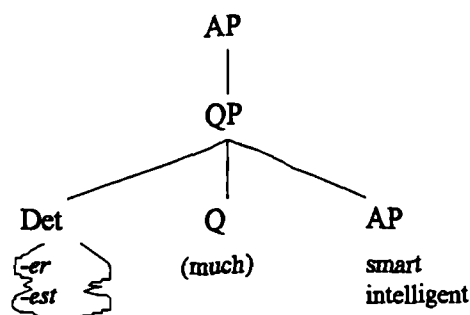
- (iii) the comparative and superlative morphemes *-er* and *-est*. Analysis of these morphemes in the [Spec,AP] position dates from an early study of Bresnan (1972:229-32, 268; 1973:306-16; Berman 1974: 108-10), where the *-er* morpheme was analysed as [Det,QP]:

(116)



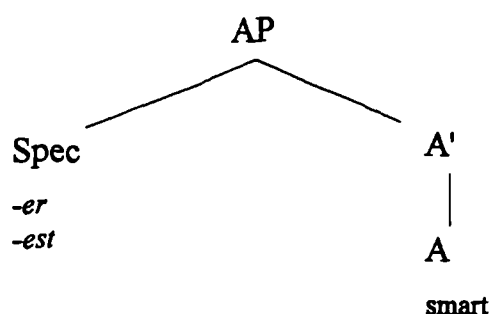
In Bresnan's analysis, the comparative *-er* morpheme encliticises (i.e., *attaches*) to *much* and *many* to form *more*, and encliticises to *little* and *few* to form *less*. Similarly, to form a comparative adjective such as *smarter*, Berman (1973) generates the *-er* (and presumably *-est*) morphemes in the specifier of a QP headed by *much* and dominated by an AP. In her analysis, affix-hopping encliticises *-er* to the adjectival element and a rule of *much*-deletion applies in order to derive A+ *-er* at PF: $AP[QP[-er Q[much AP[smart]]]] \Rightarrow AP[QP[t Q[much AP[smart + -er]]]$. With polysyllabic adjectives such as *intelligent*, however, *much*-deletion does not apply (cf. Berman 1973:108-10): $AP[QP[-er Q[much AP[intelligent]]] \Rightarrow AP[QP[t Q[more (much + -er) AP[intelligent]]]$.

(117)



In more current work, Emonds (1985:161,179-80,199; 1986:271-2) proffers an analysis that generates the comparative and superlative *-er* and *-est* morphemes directly in [Spec,AP].

- (118) $AP[Spec[-er]] A'[smart]$ \Rightarrow $AP[t A'[smarter]]$
 $AP[Spec[-est]] A'[smart]$ \Rightarrow $AP[t A'[smartest]]$



He cites evidence from English that comparative and superlative morphemes *alternate with* degree words. Co-occurrence restrictions block the presence of both in [Spec,AP]. (Cf. Emonds 1985:161,199; 1986:273, fn. 22, 1987:614).

- (119) *very smarter ($AP[t A'[smart -er]]$)
 *too tallest ($AP[t A'[tall -est]]$)
 *so higher ($AP[t A'[high -er]]$)
 *as longest ($AP[t A'[long -est]]$)
 *how duller ($AP[t A'[dull -er]]$)
 *quite dumbest ($AP[t A'[dumb -est]]$)

An important difference in Emonds' (1987) analysis is that it eschews affix-hopping (i.e., *move-X⁰* in the current GB-model). Instead, comparative and superlative morphemes are *alternatively realised* on the adjectival head at PF. Emonds' principle of *Alternative Realisation* can be taken to replace a 'lowering' transformation (cf. fn. 10). It is the process whereby a syntactic feature F of a host category X⁰ may be realised as an overt grammatical morpheme on an adjacent Y⁰ category, provided that a state of sisterhood exists between X⁰ and Y⁰ (cf. Emonds 1985:227; 1986:272; 1987:615; 1994:168). That is to say, a host category X can remain empty throughout a derivation if its syntactic features are 'realised' (i.e., phonologically overt) on a sister head Y category: $[X^0, f]_{YP}[\dots Y^0 \dots] \rightarrow X^0_{YP}[\dots Y^0 + m \dots]$. For AR to proceed, X must *c-command* and govern YP. C-command (or *constituent-command*) is the structural relation where X as a sister of YP is on an equal level with YP and 'commands' this YP, as well as

commanding the subordinate head Y of YP and the sisters of Y: $_{XP}[X \text{ }_{YP}[Y \text{ }_{ZP}]]$ (cf. Reinhart 1976, 1981 on c-command). For AR, there must be a clear path between $[X, f]$ and the head Y^0 of the sister YP. In other words, no overt element may intervene outside YP between the feature on X and the head of the sister YP on which it will be realised as a grammatical morpheme (cf. Emonds 1985:227; 1986:272; 1987:615; 1994:168).

In the context of figure (118), this means that $[Spec, A]$ can be empty if its features (i.e., $[+Comparative/+Superlative]$) are alternatively realised as *-er* or *-est* on the head A^0 of its sister A'. However, whilst *Alternative Realisation* is adopted throughout this thesis, there is the same difficulty with the analysis in (118) that we observed in section 1.2.1. concerning hypothesised contents of $[Spec, XP]$ and structure preservation; namely, that the host C category $[Spec, AP]$ is an X^2 category whilst its morphemic realisation (*-er*, *-est*) is X^0 in status. Hence in the analysis in (118), the features claimed to be dominated by an X^2 category are being alternatively realised as X^0 affixes on a Y^0 sister head (i.e., *-er* or *-est* of Spec is being alternatively realised on *tall* of A). In order to address this problem, I will propose an analytical modification to figure (118) in section 2.4.2. below.

2.4.1. The position of adjectival predicates in English

We noted in section 2.1. (the 'Internal Subject' Hypothesis) that A' predicates in APs may *precede* rather than follow the subject nominal in English, and that this is out of alignment in a Subject Specifier framework, where predicates are predicted to occur to the right of their subject specifier in English. In answer to the conundrum of why this should be the case, when English word order generally displays a *predicate-final* pattern, I make the following observations. In a Subject Specifier framework, syntactic categories in English follow a predicate-final pattern at D-structure, as shown in (120):⁸⁹

(120)

- | | | |
|--|---------------|---|
| (a) $_{NP}[\text{the king } _N[\text{army}]]$ | \Rightarrow | $_{DP}[\text{the king } _D['s \text{ } _{NP}[t \text{ } _N[\text{army}]]]$ |
| (b) $_{VP}[\text{the king } _V[\text{attack}]]$ | \Rightarrow | $_{VP}[\text{the king } _V[\text{attack}(-ed)]]$ |
| (c) $_{PP}[\text{the king } _P[\text{in the castle}]]$ | \Rightarrow | $_{IP}[\text{the king } _I[is \text{ } _{PP}[t \text{ } _P[\text{in the castle}]]]$ |
| (d) $_{AP}[\text{the king } _A[\text{bad}]]$ | \Rightarrow | $_{IP}[\text{the king } _I[is \text{ } _{AP}[t \text{ } _A[\text{bad}]]]$ |

⁸⁹I remind the reader that I am claiming that determiners and other ancillary functional morphemes are late-lexically inserted at PF; determiners are included in the subject nominals in (120) (a) - (d) merely for expository convenience.

Recall from section 2.2.3.1. that a Subject Specifier framework analyses *be* as a raising verb. This means that constructions such as (120) (d) would derive *the king is bad* from a D-structure of $BE_{AP}[\textit{the king}_{A'}[\textit{bad}]]$, with raising of the subject specifier *the king* to the [Spec,IP] position for Case-marking by I. However, in complex constructions where an AP *itself* acts as subject specifier in a containing XP, the adjectival predicate characteristically appears to shift from its underlying postnominal position to a surface prenominal position. (121) derives *Bad King John is on the march* from an underlying $BE_{PP}[\textit{King John}_{A'}[\textit{bad}]]_{P}[\textit{on the march}]$:

$$(121) BE_{PP}[\textit{King John}_{A'}[\textit{bad}]]_{P}[\textit{on the march}] \Rightarrow \textit{IP}[\textit{AP}[\textit{bad}_j \textit{King John}_{A'}[\textit{t}_j]]_i]_{I}[\textit{is}_{PP}[\textit{t}_i]_{P}[\textit{on the march}]]]$$

Even more asymmetric is that in deictic APs (i.e., in APs where there is a lexical determiner at PF), the adjectival predicate appears to shift from its underlying post-nominal position to a surface position which is before the noun but *after* the determiner:

$$(122) BE_{PP}[\textit{the king}_{A'}[\textit{bad}]]_{P}[\textit{on the march}] \Rightarrow \textit{IP}[\textit{AP}[\textit{the bad}_j \textit{king}_{A'}[\textit{t}_j]]_i]_{I}[\textit{is}_{PP}[\textit{t}_i]_{P}[\textit{on the march}]]]$$

According to our analyses in (121) and (122), the adjectival predicate A' *bad* shifts leftwards. However, an alternative analysis is given below, where the head N (i.e., *King John* or *king*) of the subject DP shifts *rightwards*. We will postulate that the analyses in (123) and (124) are the correct ones, due to theory-internal rules which constrain our choice of landing-site. In section 2.4.1.1. we will examine such an analysis more closely.

$$(123) BE_{PP}[\textit{King John}_{A'}[\textit{bad}]]_{P}[\textit{on the march}] \Rightarrow \textit{IP}[\textit{AP}[\textit{t}_j \textit{A'}[\textit{bad}] \textit{King John}_j]_i]_{I}[\textit{is}_{PP}[\textit{t}_i]_{P}[\textit{on the march}]]]$$

$$(124) BE_{PP}[\textit{the king}_{A'}[\textit{bad}]]_{P}[\textit{on the march}] \Rightarrow \textit{IP}[\textit{AP}[\textit{the t}_j \textit{A'}[\textit{bad}] \textit{king}_j]_i]_{I}[\textit{is}_{PP}[\textit{t}_i]_{P}[\textit{on the march}]]]$$

In English there are a few exceptions to this shifting phenomenon in APs, such as *the girl asleep, a knight errant, the sum total, an heir presumptive, the president elect, a woman scorned*, etc., but in deictic APs this is the exception rather than the norm.

I propose that prenominal adjectival placement in Modern English is a fixed relic of its Proto-Germanic ancestor (ca. 3000 - 300 B.C.), which, scholars believe, exhibited a verb-final word order, or SOV (i.e., subject-object-verb).⁹⁰ The position of the core category (i.e., the predicate or V) engendered a host of other word ordering correlates

⁹⁰A proto-language or *parent* language is a reconstructed common ancestor for subfamilies of languages known as *daughter* languages. Proto-Germanic is the reconstructed parent language for the Germanic family of languages, the West branch of which includes Old English (OE) and Modern English (ModE). Proto-Germanic in turn is a daughter language of an even older reconstructed parent language, Proto-

along this verb-final (i.e., head-final) pattern, on what was perceived to be the head of a head-complement (or head-modifier) sequence. Thus S[OV] languages tend to have nouns following adjectives or an A-N sequence (where the *nominal* rather than the adjective was perceived as the head and thus in final position, as in *the bad king*), nouns following genitive subjects or an N-N sequence (where the possessed nominal was perceived as the head and so in final position, as in *the king ('s) army*), postpositions or an N-P sequence (where the preposition was perceived as the head and so in final position, as in *the castle in*), and so on (cf. Robinson 1992: 165-6; Mitchell 1995:59-61).⁹¹ Roughly speaking, this means that in Proto-Germanic an S[OV] word order would have produced constructions such as *the king the fort attacked* vs. *the king attacked the fort*, *the bad king* vs. *the king bad*; *the king ('s) army* vs. *the army (of) the king*, and *the castle in* vs. *in the castle*. A rich system of inflectional suffixes (i.e., morphological Case) made clear which word was the nominal subject, nominal object, verb, attribute, modified nominal, etc. However, by the time of Old English (ca. 449 - 1066 A.D.), the rich Case system inherited from Proto-Germanic was eroding, with the consequence that Old English gradually underwent a critical change from an S[OV] to a predominantly S[VO] (i.e., subject-verb-object) word order. The motivation for this was that over time the *order* of constituents came to replace inflectional suffixes as the means by which to distinguish the syntactic category of words. That this was a transitional state in Old English can be seen from the variable word order of SVO, OVS, and OSV in clausal structure in Old English texts.⁹² Variability of word order was a symptom of an inflectional system not yet completely lost; however, as more and more Case endings disappeared, there emerged an ultimate preference for an S[VO] pattern in order to distinguish word categories. A verb in the second position is a distinguishing feature of an S_v[VO] language; this means that the verbal head is in *first* position in a V' constituent such as *v'*[*attacked the fort*]. Hence if a V-O sequence came to identify verb and nominal in a V' constituent in Old English, one would predict this pattern to have emerged for A', P', and N' constituents. This shift did indeed occur in Old English for P' and N': for P', an N-P sequence such as *p'*[*the castle in*] shifts to a P-N sequence of *p'*[*in the castle*] in order to standardly identify in the first position *prepositions* and in the second position *nominals* that had previously carried oblique Case. This process of change is evident in an OE example such as *mid ealre þære fyrde* ('with the whole army'); the preposition *mid* is in the first position but the nominal *fyrde* (along with its quantifier *ealre* ('all') and determiner

Indo-European, which is believed to have its origins ca. 7000-5000 B.C. somewhere in Eastern Europe, possibly north near the Baltic, south near the Black Sea, or even further south in eastern Anatolia (present-day Turkey). (Cf. Robinson 1992:6,15, Barber 1993:78-9).

⁹¹Postpositions are prepositions which follow rather than precede nouns, a feature of many languages.

⁹²SVO, OVS, and OSV are acronyms for subject-verb-object, object-verb-subject, and object-subject-verb word orders, respectively.

þære ('the') still carries oblique Case - clearly indicating the transitional state to S[VO] (cf. Mitchell 1992, 5th ed.:132-3). Concerning N', along with the subjective genitive form of $_{NP}[\textit{the king } _{N'}[\textit{army}]]$ there emerges into more habitual use the objective genitive form $_{N'}[\textit{destruction (of) the city}]$, as distinct from the earlier *dative* form *destruction to the city* (cf. gen. *forspillednis þære ceastre* vs. dat. *fospillednis þæm ceastre*).⁹³ Both subjective and objective genitives are, in fact, analytically consistent with the OE shift to S[VO]. In subjective genitives such as $_{NP}[\textit{the king } _{N'}[\textit{army}]]$, the possessed nominal *army* is the head of an N' predicate and so in first position. We can see this more clearly by comparing two structurally similar examples such as $_{NP}[\textit{the king } _{N'}[\textit{army from York}]]$ and $_{VP}[\textit{the king } _{V'}[\textit{attack the fort}]]$, where *army* is the head of its N' projection and *attack* is the head of its V' projection. In objective genitives, likewise, we find an S[VO] pattern: in a construction such as $_{N'}[\textit{destruction (of) the city}]$, the nominal taking an object (i.e., *destruction*) is the head of the N' constituent and so in first position. And again matching head-first structures are evident in an N' such as $_{N'}[\textit{destruction (of) the city}]$ and a V' such as $_{V'}[\textit{destroy the city}]$.⁹⁴ The fact that both subjective and objective genitive constructions are consistent with an S[VO] word order is due to their different categorial status: $_{NP}[\textit{the king } _{N'}[\textit{army from York}]]$ is a maximal (or NP) constituent, whilst $_{N'}[\textit{destruction (of) the city}]$ is an intermediate (or N') constituent. Therefore, both can display their key (i.e., *head*) element in first position in N'. Evidence supporting this view comes from the fact that N' objective genitives can be expanded into NP subjective genitives by the addition of a Possessor nominal: $_{N'}[\textit{destruction the city}]$ expands to $_{NP}[\textit{the king } _{N'}[\textit{destruction the city}]] \Rightarrow _{DP}[\textit{the king } _{D'}[\textit{'s } _{NP}[\textit{t } _{N'}[\textit{destruction } _{PP}[\textit{e } _{P'}[\textit{of the city}]]]]]]]$.

We have seen that the OE shift to S[VO] is evident in V', P', and N'. What is curious is that A' alone did not undergo the expected shift from an A-N pattern of $_{N'}[(\textit{the}) _{A'}[\textit{bad}] \textit{king}]]$ to an N-A pattern of $_{N'}[(\textit{the}) \textit{king } _{A'}[\textit{bad}]]$, which *would* be the predictable head-first pattern if the nominal (*the*) *king* was perceived as the head category, with an A' adjunct modifier. Instead, noun-adjective patterning in Old English merely cemented the ancient Proto-Germanic pattern of A-N: cf. *se yfel cyning* ('the bad king') vs. **se cyning yfel*

⁹³For ModE objective genitive constructions such as *destruction (of) the city*, a contentless or dummy *of* preposition developed in Middle English (ca. 1100-1500), when the OE dative and genitive inflections were eventually entirely lost from nominals and their determiners (cf. dat. *þæm ceastre* ('(to) the city', gen. *þære ceastre* ('(of) the city'), and nom. *se ceaster* ('the city')). (Cf. Burrow and Tuvill-Petre:39, 159 on the late 14th c. emergence of *of*-phrases). Genitive dummy *of* originates from the weak form of *of* (the ablative function of) the OE dative preposition *off*. In Modern English, dummy *of* is a nonlexical (i.e., nonthematic) P and so, like functional morphemes, late lexically inserted at PF. Its role, like Poss *'s*, is of genitive Case-marker. (Cf. Lass 1994:233 on the source of genitive *of*).

Concerning ModE subjective genitive constructions such as *the king's army*, of the OE 3sgm *-es*, 3sgf *-e*, and 3pl *-a* nominal inflections in subjective genitives, only the 3sgm. survives, in the form of the Poss *'s* genitive inflection on Possessor nominals in ModE (cf. gen. *þæs cyninges fyrd* → *the king's army*).

⁹⁴Cf. Chomsky (1970:157-8) on the PF processes of (i) the nominalisation of a verb like *destroy* to a noun like *destruction*, and (ii) the concomitant *of*-insertion rule.

('the king bad'). This is admittedly baffling, particularly as we can find in Old English, as in Modern English, those few examples of an N-A pattern that *are* consistent with the shift to S[VO]: cf. *frea mihtig*, ('lord mighty'), *hrefn blaca* ('raven black'), *freodoburh fægere* ('stronghold fair'), and *a man afraid, the river wild, Prometheus bound*.⁹⁵ I conclude that the predominant A-N pattern of English is a fossilised remnant of ancient Proto-Germanic, and as such is an exceptional feature of Old and Modern English. Furthermore, I postulate that an adjective-noun word order had become fossilised in Proto-Germanic long before the appearance of Old English and its standardisation to S[VO]; and that an A-N word order in Proto-Germanic was the result of a misidentification of the head constituent in an adjective-noun sequence. In S[OV] Proto-Germanic, presumably, adjectives were perceived as modifier *adjuncts* to a head noun, producing an underlying structure of $N[bad\ N[king]]$. The opposite is claimed here; that adjectives are in fact head *predicates* taking a subject noun argument, producing an underlying structure of $AP[the\ king\ A[bad]]$. Recall the arguments in section 2.2.3.1. that theta theory and trace theory both provide convincing evidence that this is the case: a derivation of $BE_{AP}[the\ king\ A[bad]] \Rightarrow IP[the\ king_i\ I[is\ AP[t_i\ A[bad]]]]$ is necessary in order for *the king* to receive a θ -role (i.e., Theme) from *bad*; and, for evidence that *the king* raises to [Spec,IP], compare the ungrammatical **the king_i is AP[him_j A[bad]]*.

Because Old English underwent the syntactic shift to S[VO], Modern English is considered a head-first language. This makes adjectival placement in Modern English, as in Old English, a problem; Modern English has continued to view adjectives as prenominal modifiers on the whole. However, whether adjectives are viewed as modifiers *or* predicates, in either case the placement of an adjective *before* a noun is asymmetric in a head-first language such as English. Therefore, adjectival placement has long been seen as anomalous.

The historical shift from a Proto-Germanic head-final S[OV] word order to an Old English head-first S[VO] word order can be seen from the following examples. The AP examples exhibit no change.⁹⁶

- (125) N NV
 VP: (i) the Proto-Germanic S[OV] pattern: *þe ðas mine word gehyrþ*
N VN ('who these my words hears')
 (ii) the Old English S[VO] pattern: *þe gehyrþ ðas mine word*
N VN ('who hears these my words')

⁹⁵OE, like ModE, utilised an N-A sequence for purposes of emphasis, rhythm, style, and poetic metre, but that this pattern was available at all is due (I claim) to the fact that an N-A sequence is licit (and in fact *most* licit) within the OE shift to S[VO]. (Cf. Mitchell 1985, vol. 1:78, §172 on adjectival post-position).

⁹⁶Various OE examples are taken from Mitchell 1985, vol. 1:62; Mitchell 1995:60-1; Brook 1955:85; and Robinson 1992:164-6. Some of the diacritic marks for OE have been necessarily omitted, due to word processing limitations.

- N NV
- NP: (i) the Proto-Germanic S[OV] pattern: *þæs cyninges þegnas* ('the king's thanes')
- N VN
- (ii) the Old English S[VO] pattern: *se forspillednis þære ceastre* ('the destruction (of) the ci
- N NV
- AP: (i) the Proto-Germanic S[OV] pattern: *unrythum dædum* ('unlawful deeds')
- N VN
- miclum gefeohtum* ('great battles')
- (ii) the Old English S[VO] pattern: *bealde menn* ('bold men')
- deorc land* ('dark land')
- N NV
- PP: (i) the Proto-Germanic S[OV] pattern: *him mid* ('him from')
- þa stod him sum mann æt*
- ('then stood him some man before' - i.e.,
- N NV
- 'then stood some man before him')
- (ii) the Old English S[VO] pattern: *ymbe þa sæ* ('around the sea')
- on deora fellum* ('in deer-skins')

2.4.1.1. *Subject-Shift* in English APs

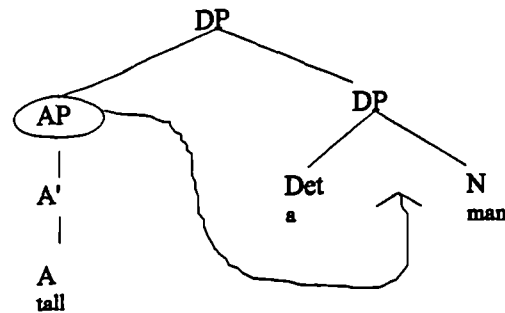
Because of the historical progression outlined above, I consider prenominal adjectival placement in Old English and Modern English to be a special case of *Subject-Shift*, whereby a subject nominal shifts to a position to the *right* of its A' predicate. Bresnan (1972:267-75, 1973:305-11) originally examined anomalous adjectival placement in a process she called *AP-Shift*. However, her analysis shifts an AP rather than the head N of a DP subject specifier (what I am proposing). In *AP-Shift* there is rightward movement of an adjectival modifier, in order to derive this modifier in a position adjacent to the nominal head:

(126) Bresnan's *AP-Shift*⁹⁷

$$\text{DP}[\text{AP}[\textit{tall}] \text{DP}[\textit{a man}]] \Rightarrow \text{DP}[t \text{DP}[\textit{a AP}[\textit{tall}] \textit{man}]]$$

⁹⁷Bresnan's (1972, 1973) derivation is actually for constructions such as *a tall enough man*, where *enough* is analysed as a QP adjunct to an AP modifier of a DP: $\text{DP}[\text{AP}[\text{QP}[\textit{enough}] \text{AP}[\textit{tall}]] \text{DP}[\textit{a man}]]$. *Enough* first raises into the AP *tall*, and *AP-Shift* then occurs to shift the enlarged AP *tall enough* into a position between Det and N of the DP. I have extracted that portion of Bresnan's analysis which is suitable for this discussion, and also use DP where she uses NP.

(126) (cont.)

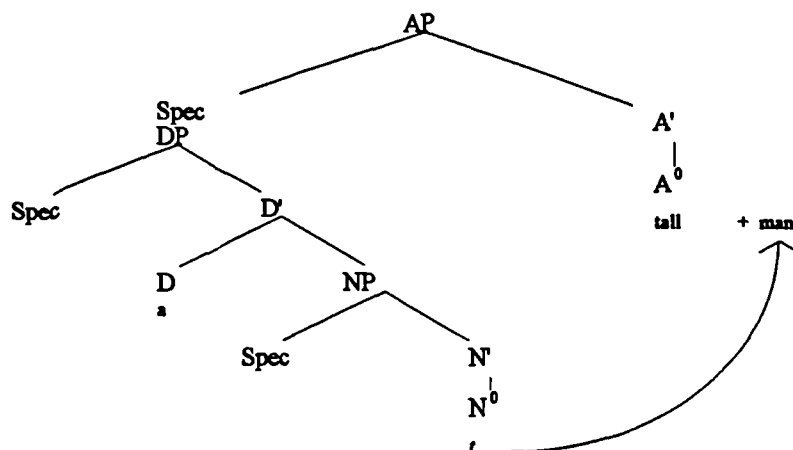


The problem with this analysis is illicit movement. After shifting of the AP *tall*, there is no suitable landing-site available; either *tall* attaches to the Det⁰ *the* or the N⁰ *man*. This entails the adjunction of an AP constituent to an X⁰ one, an unsatisfactory proposal in view of structure preservation (which we are extending to include adjunction processes - cf. fn. 17). We could easily rectify this analysis by claiming that only the A⁰ head shifts rightwards to affix to the Det⁰ or the N⁰ head, but this would present problems for the ECP, which requires that traces (e.g., the trace of *tall*) must be *properly governed* (cf. Chomsky 1981:250; esp. 1986b:16-17).⁹⁸

Therefore, I propose a different process to Bresnan's. In (127), the head N⁰ of a subject *specifier* shifts rightwards and adjoins to the head A⁰ of its A' predicate.⁹⁹ The A⁰ *tall* can not move leftwards (to adjoin to *man*) because of a concomitant ECP violation.

(127) *Subject-Shift*

$${}_{AP}[a \text{ man } A'[\text{tall}]] \Rightarrow {}_{AP}[a \text{ } A'[\text{tall}] \text{ man } t]$$



⁹⁸Proper government is the process by which a category is governed by a head in one of two manners:

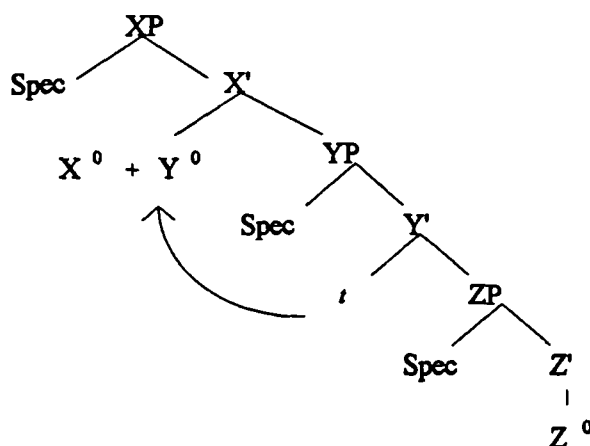
(i) *θ-government*, by which the category is assigned a *θ*-role by a lexical head; or (ii) *antecedent-government*, by which a category's *trace* is governed by its moved antecedent, with no barrier (maximal projection) intervening to block this government. (Cf. Chomsky 1981:60, 168, 250; Chomsky 1986:17).

⁹⁹Recall that at base-level, only lexical *heads* occur as subject and predicate arguments; therefore I use the term Subject-Shift to refer only to the head N of the DP subject specifier (cf. D-S *man tall* and PF *(the) man (is) tall*).

Head-to-head movement of this type is formulated by Baker (1988) as an *incorporation* process. In an incorporation analysis, morphologically complex units are derived from lexical elements such as X^0 stems or Y^0 affixes which amalgamate to form larger units, i.e., $X^0 + Y^0 = \bar{X}^0[X^0 Y^0]$. Incorporation is usually construed as head-raising processes such as *V-to-I* movement, where a lexical head V^0 raises to a functional head I^0 in order to incorporate with the Tense and Agreement morphemes in I (cf. fn. 10). However, whereas incorporation was traditionally viewed as a *substitution* process of, for example, a head V into an empty host category I , with the advent of the *split-Infl* analysis incorporation can also pertain to *adjunction* processes. That is, where the heads T and Agr are not empty but contain their own distinct morphemes such as *-ed* or *-s*, a raised V head must *adjoin* to these affixes. Along these lines, Rizzi and Roberts (1989) elaborate the notion of head-to-head incorporation to mean either *substitution* of a head into another head position, or *adjunction* of a head to another head position. In figure (118) we have an example of adjunction incorporation whereby a lexical head A^0 incorporates with a comparative *-er* or superlative *-est* morpheme to derive *tall-er* or *tall-est*.¹⁰⁰

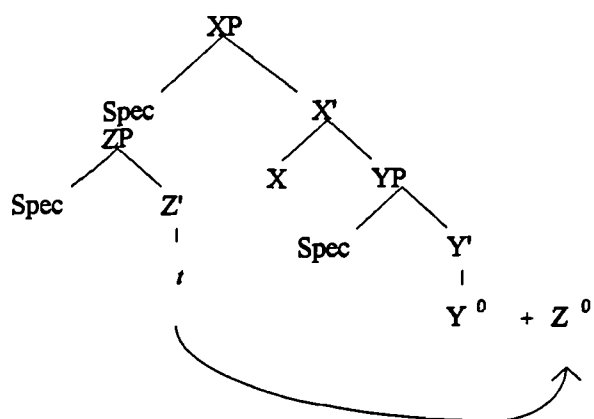
Let us posit another instance of adjunction incorporation for figure (127). Here, the subject N^0 *man* raises to adjoin to the A^0 *tall*, forming the complex *tall man*. However, this analysis also might seem to present problems for the ECP. Due to the ECP, we predict that incorporation is both (i) a raising process, and (ii) a *leftward* raising process. Normally, only heads of *complements* can incorporate into other head X^0 categories, in order to ensure antecedent-government of the trace of the moved head. Incorporation is thus not licit for heads of subjects or adjuncts, because antecedent-government would not be possible and the ECP would be violated (cf. Roberts 1991:210-11).

(128) (a) Incorporation from a complement

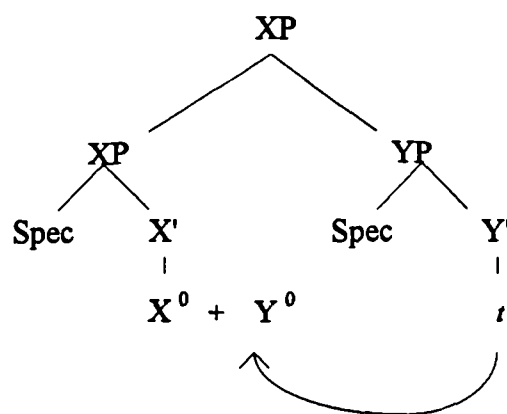


¹⁰⁰We will address *-er* and *-est* as head X^0 categories in section 2.4.2.

(128) (b) *Incorporation from a subject

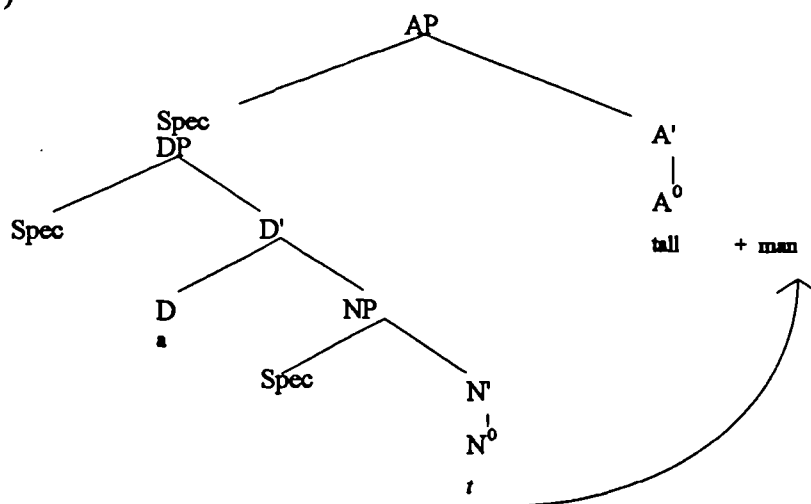


(128) (c) *Incorporation from an adjunct



However, with respect to the ECP, I suggest that the trace of the shifted subject N^0 in (127) is able to be θ -governed by virtue of the Sisterhood Condition on θ -government (cf. Chomsky 1986b:19). This principle posits that a category is properly governed if it is sister to a θ -marking head. *Tall* in (128) is the A' sister to its DP subject *man*, and, as we have argued in section 1.4, θ -marks the nominal argument *man* as Theme (cf. fn. 39). Therefore, the predicate A' *tall* θ -governs *man*, and its *trace* after movement. We conclude that the trace of *man* is properly θ -governed in figure (127), repeated below. We will return to subject-government by a predicate X' in section 2.4.3., (141) and (142).

(129)



2.4.2. Attributive and Predicative As

To claim that a construction such as *a tall man* is a subject-predicate string does not mean to say that we abandon the notion of attributive As. Rather, these are easily incorporated into our Subject Specifier framework in cases where AP constituents occupy the normal

DP subject or object position in a predication. For example, in a derivation such as $BE_{AP}[AP[a\text{ blond man}_{A'}[tall]]_{A'}[unexceptional]] \Rightarrow a\text{ tall blond man is unexceptional}$, I would posit that *tall* is a predicate A' of *a man* in the AP subject *a man tall*, and *blond* is a nonpropositional A⁰ adjunct to the subject N⁰ *man* (cf. section 1.5, (77)). *Unexceptional*, in turn, is the A' predicate to *a blond man tall*: cf. $AP[AP[a\text{ }_{A^0}[blond]_{N^0}[man]]_{A'}[tall]]_{A'}[unexceptional]]$. *Subject-Shift* moves the incorporated complex *blond + man* to the right of *tall* in order to derive the surface order in English: $a\ t_i\ tall\ [blond\ man]_i$. In Romance, where adjectival elements typically follow the N head, this shifting is not necessary. A useful method of distinguishing between attributive and predicative As is Cinque's (1994:102) observation that attributive As precede an N's complement whilst predicative As follow it. Applying this maxim to our English example, if *blond* is a modifier, we would expect that *blond* is pre-N whereas the predicate *tall* is post-N. And this is just what we find in our derivation for the AP subject *a tall blond man*: compare $a\ [blond\ man\ from\ Sweden]_i\ tall \Rightarrow a\ t_i\ tall\ [blond\ man\ from\ Sweden]_i$ with $a\ [tall\ man\ from\ Sweden]_i\ blond \Rightarrow *a\ t_i\ blond\ [tall\ man\ from\ Sweden]_i$. Several modifiers to an N head would follow the relative ordering hierarchy of modifying As for a particular language (e.g., English *size-quality-colour-N*, as in *a tall successful blond man* (cf. Quirk et. al. 1985:1338-9); or *quality-size-(shape)-colour-N*, as in *the beautiful big red ball* (cf. Cinque 1994:99-101)). The modifying As adjoin to a subject N⁰ or to a predicate A⁰, according to the linear sequence required at S-structure: cf. $AP[AP[a\text{ }_{A^0}[blond]_{N^0}[man]]_{A'}[A^0[sinister]_{A^0}[tall]]] \Rightarrow a\ t_i\ sinister\ tall\ [blond\ man]_i$.

Now let us examine a longer string such as $BE_{AP}[AP[the\text{ }_{A^0}[ambitious]_{N^0}[heir]]_{A'}[apparent]]_{A'}[optimistic]] \Rightarrow the\ ambitious\ heir\ apparent\ is\ optimistic$. Here the attributive A is the nonpropositional A⁰ adjunct *ambitious* which modifies the N⁰ *man*, whilst the predicates are the A' *apparent* and the A' *optimistic*. Where the surface order reflects the underlying order, there is no need for *Subject-Shift*. In fact word order in Romance generally supports our Subject Specifier hypothesis, as in the French counterpart *l'héritier présomptif ambitieux est optimiste*, where the underlying order and the surface order exhibit a subject-predicate pattern in both the AP subject (*l'héritier présomptif ambitieux*) and the entire AP proposition (*[l'héritier présomptif ambitieux]_i est t_i optimiste*). French does exhibit a set of pre-N modifiers, but as this is a closed set of approximately fifteen adjectives (i.e., *bon-mauvais-grande-gros-jeune-joli-long-haut-méchant-petit-beau-vaste-vieux-vilain-sot*), it is not enough to invalidate the fundamental N-A order. Concerning X⁰-adjunction, the surface structure in *l'héritier présomptif ambitieux est optimiste* leads me to conclude that, in this example, *ambitieux* is an A⁰ modifier to the predicate A⁰ *présomptif* at D-structure: cf. $ÊTRE_{AP}[AP[l'héritier\text{ }_{A^0}[présomptif]_{A^0}[ambitieux]]]_{A'}[optimiste]]$.

Finally, where propositional *APs* occupy the *DP* subject position, I assume that, after raising of the *AP* subject to [Spec,IP], nominative Case 'percolates' through the *AP* subject argument to the *DP* argument contained within (e.g., to *the heir* in *the (ambitious) heir apparent*): cf.

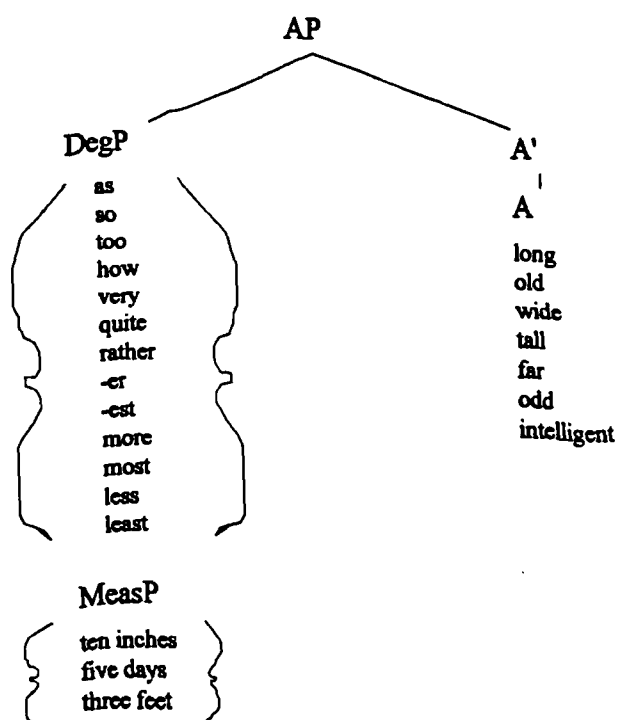
IP[AP[DP[the A⁰[ambitious] N⁰[heir]]]_i A'_i[apparent]]_T[is AP[t_i A'_i[optimistic]]].
(Cf. Stowell 1981:266 and fn. 55).

2.4.3. Subjects in [Spec,AP] and a *Num* node for degree and measure elements

If, as we have argued in section 2.4.1., the [Spec,AP] position is reserved for nominal subjects (either base-generated or movement-generated subjects), then adjectival modifiers such as degree words, measure phrases, and comparative and superlative morphemes must be somewhere other than in [Spec,AP]. I treat elements of degree (subsuming comparison) and measure as essentially quantificational and so contained in a *Num* node (cf. fn. 2).

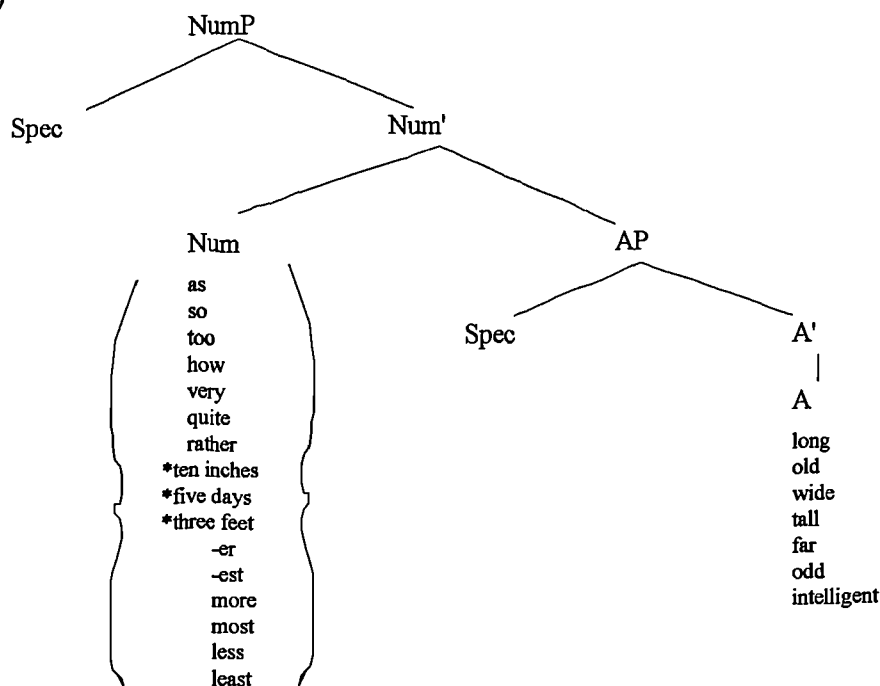
This *Num* category is a functional head and dominates elements that are abstractly *numeric* in nature. With respect to *APs*, this includes: (i) *degrees* (*so* true, *too* high, *as* bold, *very* doubtful, *how* ridiculous, *quite* unfair, *barely* conscious, (and perhaps *only* young and *just* little), *big enough*; *taller*, *tallest*, *more* intelligent, *most* intelligent) and (ii) *measures* (*six feet* tall, *nine kilometres* deep, *thirty metres* high). The function of *Num*, then, is to qualify an *A* element with some notion of intensification or amount. In figure (130), *DegP* (i.e., degree phrase), and *MeasP* (i.e., measure phrase) are analysed as occupying the [Spec,AP] position, following the joint proposals of Jackendoff (1977:137-41, 146-8, 161, 168) and Emonds (1985:161; 1986:260-1; 1987:614).

(130)



We see from figure (130) that DegP and MeasP are modifiers to the head category A, and therefore subordinate in status. However, I propose that the *dominant* notion in constructions such as figure (130) is a quantificational or numeric one, and therefore analyse *Num* as heading its own phrase (after Abney's 'DP-Analysis'). Consequently, *NumP* does not occupy [Spec,AP] in my analysis but instead the head category *Num* takes AP as its complement. *Num* + AP projects to *Num'* and ultimately to *NumP*, as shown in figure (131). Adjectival premodifiers of a numeric nature, therefore, assume maximal *NumP* status.

(131)



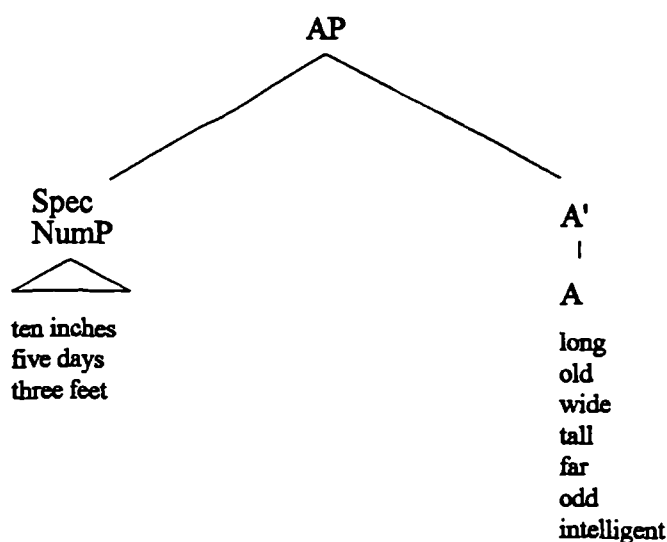
At underlying structure, the subject specifier position of NumP, like the subject specifier position of the functional category DP, is purely a vacant landing-site. It is therefore null by 'default', (i.e., the *unmarked* case) until it is filled by motivation (e.g., by raising for Case-marking -cf. figures (134) - (136)). *Num*, like *D*, is an ancillary functional category and so (I claim) experiences late lexical insertion of its morphemes at PF. Because it is an ancillary 'host' position (i.e., lacking in any lexical content of its own), *Num*, like *D*, is able to accommodate morphemes of different categorial type (cf. Abney 1987:65, no. 5).¹⁰¹

¹⁰¹In generative grammar the D node in English generally includes lexical determiners such as the definite article *the* and the indefinite articles *a* and *some* (cf. *some woman phoned*), demonstratives such as *this* and *that*, interrogatives such as *which* and *what* (cf. *which boy, what disc*), emphatics such as *what* and *such* (cf. *what stupidity!, such arrogance!*), and indeterminate determiners such as *either* (cf. *you can use either tap*). Besides the lexical determiners listed above, D is often viewed as the site of pronominal determiners (cf. *we men, you guys, us planners*) and of the possessive morpheme *'s*. (Cf. Chomsky 1957: 26-7, 1965:63-9; Jackendoff 1977: 104, 118, 134; Postal 1969:203-14, 217-19; Abney 1987:25). Numerals and quantifiers have also been traditionally placed in Det in generative analyses (cf. Jackendoff 1977: 104, 134); in the framework proposed here they are placed in *Num*. For a full discussion of the elements contained in D cf. Chapter 5.

The inserted morphemes then carry the features of their host category (e.g., [+Num]).

But we observe that the head Num node of figure (131) contains elements of both different categorial type (i.e., Deg and N) and *level* (i.e., X^0 and X^2). Accordingly, the starred strings in the Num node represent those elements that cannot be housed in an X^0 (i.e., Num⁰) node, as they are X^2 constituents. Structure preservation (in its expanded sense of fn. 17) demands that they be generated elsewhere. In order to address these complex numeric premodifiers, I propose that in constructions such as *ten inches long*, *five days old*, and *three feet wide*, the measure phrases *ten inches* and *five days* and *three feet* do not in fact occupy a Num node which then takes an AP complement. Instead, the measure phrases themselves constitute a *NumP* nominal subject specifier of an AP:

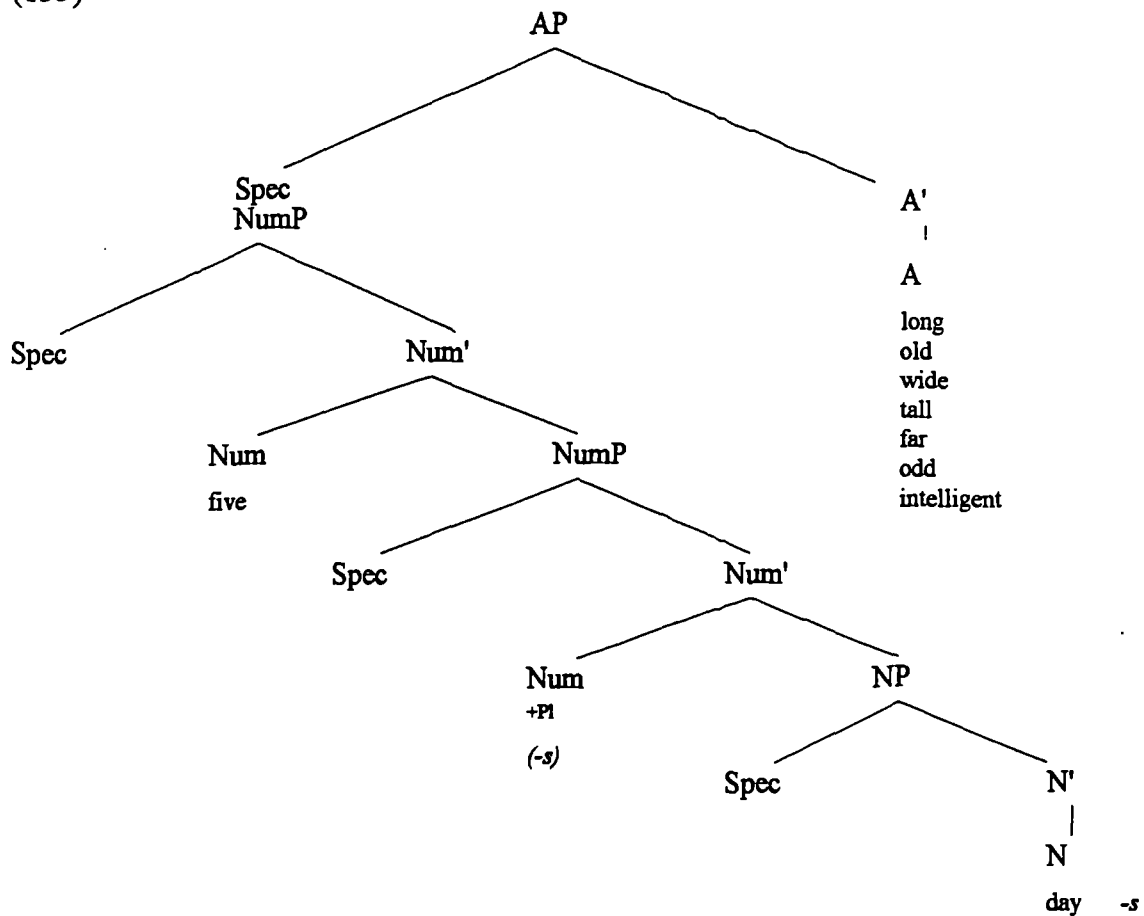
(132)



Licensing of a NumP category is due to the s-selection of a *numeric* Theme subject by the A' predicate in (132).¹⁰² Where there is a double (or indeed triple) notion of number or quantification, as in *five days old*, the NumP (the subject specifier, in this case) will involve recursion (i.e., *repetition*) of Num. The licensing of recursive Num is addressed in Chapter 4. The analysis of a NumP subject specifier such as *five days* is shown in figure (133).

¹⁰²*S-selection* (semantic selection) is the assigning of θ -roles to the arguments of a lexical head, in other words, theta theory. *C-selection* (categorial selection) is the syntactic representation of arguments as NP, AP, VP, PP, etc. (Cf. Chomsky 1986a:86-7).

(133)



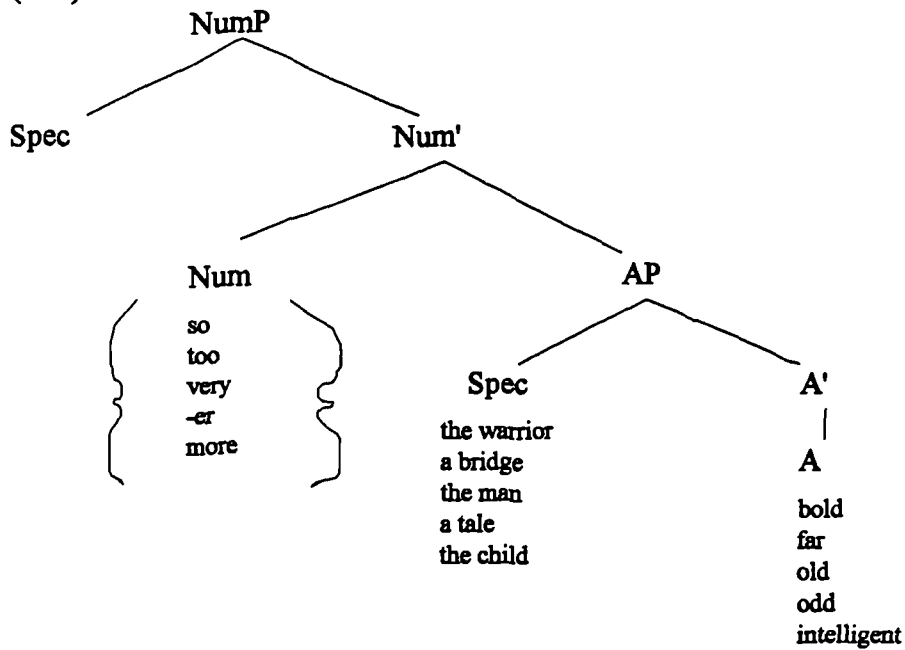
In (133), we observe that *Alternative Realisation* takes place in the lower NumP, in order for the [+Plural] feature of the Num category to be realised as an -s morpheme on the nominal *day* at PF.

Concerning the comparative and superlative morphemes *-er* and *-est*, according to our analysis in figure (131) these are Num⁰ constituents, an analysis that we will maintain. Therefore, in a construction such as *an odder tale is unlikely*, copular *be* at underlying structure subcategorises an AP proposition with a *NumP* subject specifier:

BE_{AP}[NumP[*an odder tale*] A[*unlikely*]]. We analyse *an odder tale* in figure (143).

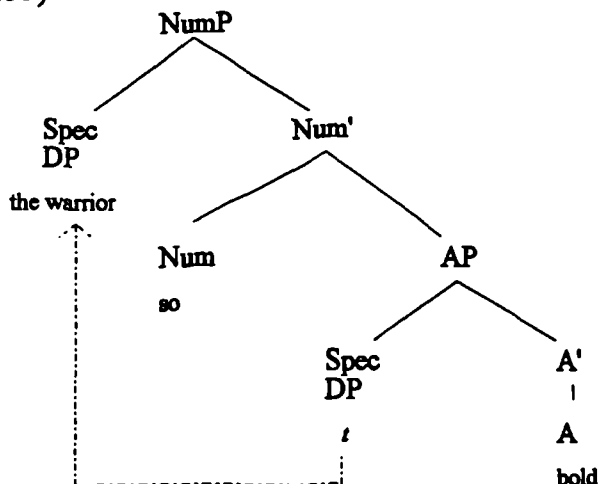
Now let us return to the simple NumP structure of figure (131), where a Num element takes an AP complement. The D-structure in figure (134) is a simplified version of (131).

(134)

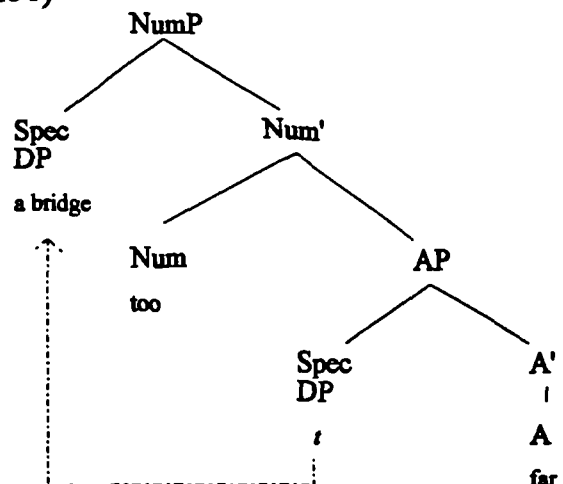


The A' predicate in (134) s-selects its subject argument (as *Theme*, presumably), in accordance with our theta theory claims of section 1.2.2. The subject specifier of a NumP, like the subject specifier of a DP, must originate in a position which is sister to a θ -marking head (cf. $NP[the\ boy]_{DP} ['s\ NP[t\ N^*[book]]]]$; $NumP[a\ girl]_{NumP} [Num[so]_{AP} [t\ A^*[young]]]]$). Therefore, in order to derive superficial structures such as *the warrior so bold*, *a bridge too far*, and so on, *DP-movement* must occur for the subject specifier of AP to precede Num of NumP. In fact, in their underlying form, NumPs such as *the warrior so bold* and *a bridge too far* are in keeping with the head-first (i.e., S[VO]) word order of Modern English: cf. $NumP[the\ warrior]_{NumP} [Num[so]_{AP} [t\ A^*[bold\ in\ deed]]]]$ and $NumP[a\ bridge]_{NumP} [Num[too]_{AP} [t\ A^*[far\ from\ the\ city]]]]$, where both *so* and *too* and *bold* and *far* head their respective Num' and A' constituents. Figures (135) and (136) show DP-raising in a NumP.

(135)



(136)



In copular constructions the derivation is much the same, with an additional instance of DP-movement in order for the subject specifier to raise to the Case-marked position of [Spec,IP]:

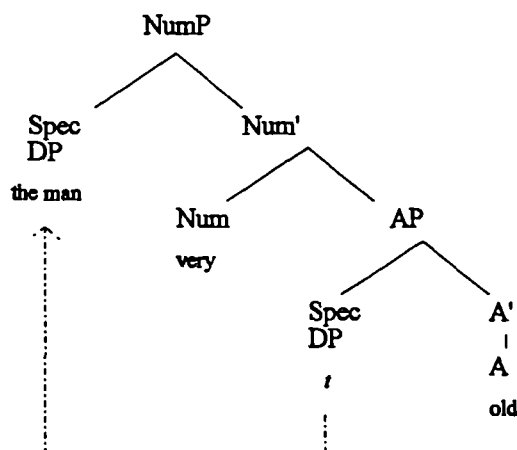
(137)

- (a) BE NumP[Num[so AP[the warrior_i A[bold]]]] ⇒ IP[the warrior_i r[is NumP[t Num[so AP[t A[bold]]]]]]
 (b) BE NumP[Num[too AP[the bridge_i A[far]]]] ⇒ IP[the bridge_i r[is NumP[t_i Num[too AP[t_i A[far]]]]]]¹⁰³

However, for more complicated derivations such as *the very old man* and *an odder tale*, certain syntactic processes must occur and in a certain order:

① *DP-movement* must occur in order for the subject specifier of the AP to raise into [Spec,NumP]. Theta theory requires that the DP subject specifier originate in a position adjacent to a θ -marking head; Case theory requires that the DP subject specifier be in the highest [Spec,XP] position, in order to be in a position which is sister to a Case-marking V or P or I or D (cf. (137)). Figure (138) shows DP-movement of *the man*.

(138)



¹⁰³ *A bridge is too far* is ungrammatical in Modern English because the nominal *a bridge* in copular constructions requires anaphoric or extralinguistic reference in order to be semantically acceptable: cf. its definite counterpart *the bridge is too far*. With indefinite nominals, a restrictive relative clause complement is necessary for grammaticality in copular constructions, e.g., *a bridge which is too far* or *a bridge that is too far*:

(i) *a bridge* CP[which_i C[e IP[t_i r[is NumP[t_i Num[too AP[t_i A[far]]]]]]]]

(ii) *a bridge* CP[O_i C[that IP[t_i r[is NumP[t_i Num[too AP[t_i A[far]]]]]]]]

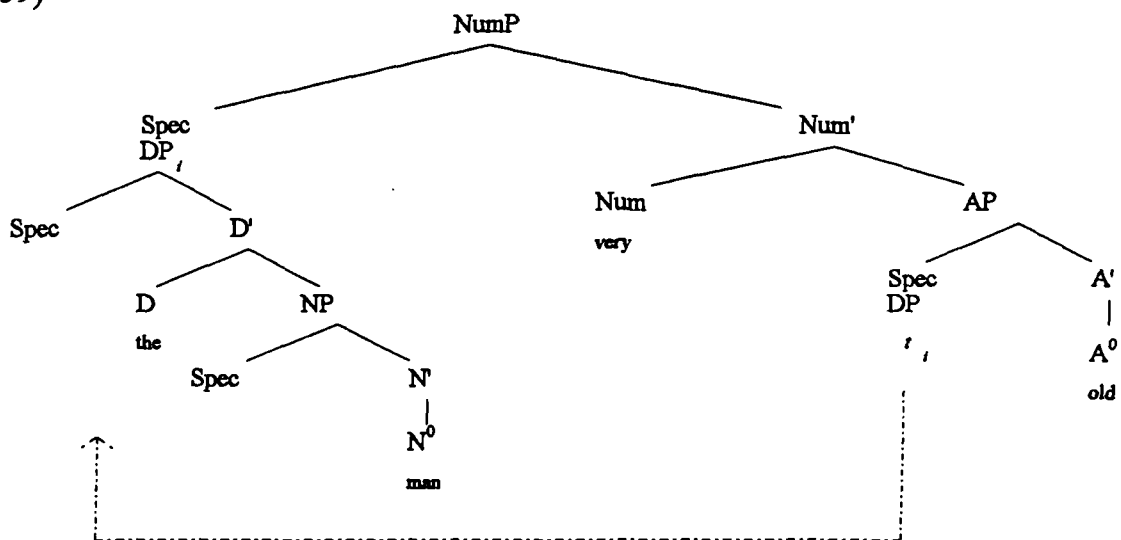
(NB: 'O' = an empty *wh*-operator, or zero relative pronoun (i. e., a covert *wh*-pronoun). For government of the trace of O across *that*, cf. Haegeman's (1991:424) interpretation of Pesetsky's (1982:306) *Complementiser contraction rule* for English, whereby *O_i + that* → *that_i*. More recently, cf. Chomsky's (1986b:24) notion of *Spec-head agreement*, whereby a unique relation of feature-sharing exists between the pair [Subj,IP] and [I,IP], neutralising the need for government of the trace of O across *that*.

In both *a bridge which is too far* and *a bridge that is too far* the relative clause complement restricts the class of bridges referred to to a particular bridge, and so gives the nominal *a bridge* anaphoric or extralinguistic reference.

After raising of *the man* to [Spec,NumP], the intermediate derivation is *the man very old*. As this construction is not stylistically acceptable in English as is *the warrior so bold* or *a bridge too far*, we need to derive *the very old man* from *the man very old*. Hence we need to postulate two possible options, as in ②.

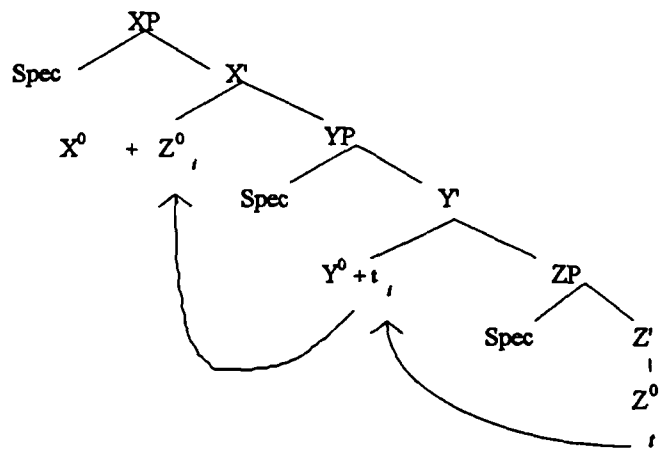
② *Incorporation* or *excorporation* must occur, in order for the N^0 *man* to move rightwards cyclically and affix ultimately to the A^0 *old*, or for the A^0 *old* to move leftwards and affix to the Num^0 *very*, with subsequent rightwards movement and affixation of the N^0 *man* to the complex *very + old*. Both options are problematic. Figure (138) is repeated here as (139), with full articulation of the DP subject specifier *the man*.

(139)



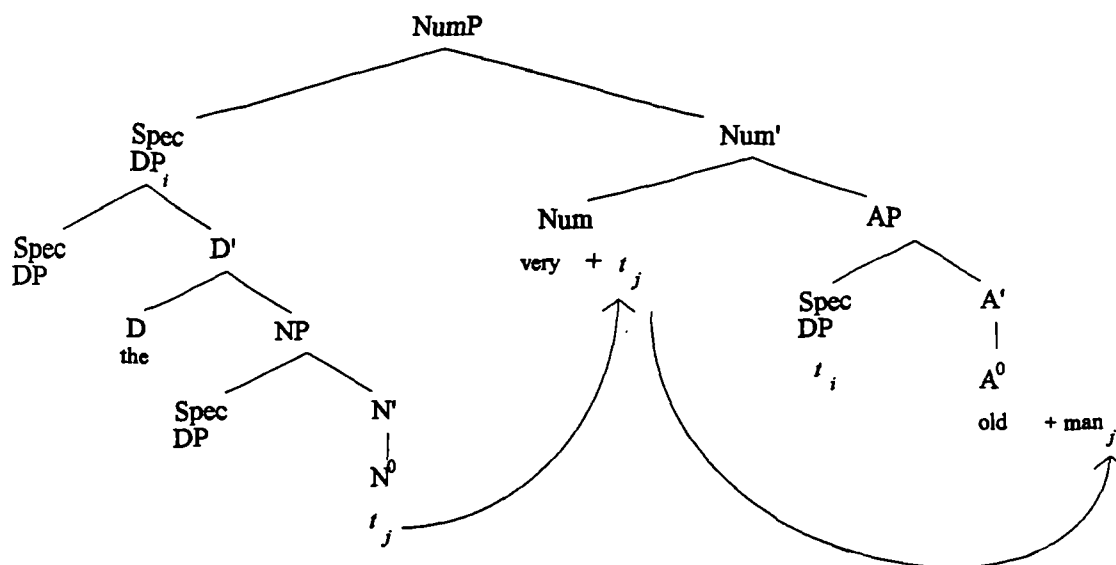
Excorporation (Roberts 1991:211) is cyclic head-to-head movement, where a head first incorporates to another head and then 'passes on', to its ultimate landing-site. Excorporation (as distinct from *incorporation* of section 2.4.1.1.) is shown in figure (140).

(140)



Due to the ECP, excorporation must allow for proper government. For this reason excorporation is usually construed as a raising process, in order to allow antecedent-government, as in (140). In our two options below, we will address the proper government of traces with θ -government.

(141) OPTION 1 (excorporation)



In figure (141), the head N *man* detaches from its DP and affixes cyclically to the head *very*, where it excorporates and moves on to the head *old*. In this position it affixes (incorporates) to *old*, forming *old man*. Government of the trace of the head N *man* is a problem, as antecedent-government is not a possibility. However, in section 2.4.1.1. we claimed that, due to the Sisterhood Condition on θ -government, traces of subject specifiers are θ -governed by their X' predicates. Hence in figure (141), the trace of the DP *the man* after movement is properly θ -governed by its A' predicate *old*, due to this trace being a sister to a θ -governing head. And, after the N⁰ *man* subsequently raises to the Num⁰ *very*, a similar instance of θ -government licences the trace of *man*. Recall that we have maintained throughout our discussion that functional categories are merely the ancillary extensions of lexical categories. Therefore, as Num and Num' are projections of the head A' predicate *old* in (141), the trace of the moved N⁰ *man* is still a sister to a θ -governing head (i.e., Num', which is the projection of the lexical head *old*). Num' can θ -govern *man* and its trace but can not L-mark it (we observed in section 2.2.3.1. that I θ -governs a VP complement but does not L-mark it). Hence Num' θ -governs the trace of *man* in (141) and so licenses it.

However, the obvious difficulty with Option 1 is that, when the N⁰ *man* incorporates with the Num⁰ *very* and then excorporates to affix to the A⁰ *old*, it must cross two cyclic nodes, DP and AP. This is illicit movement according to both the Head Movement

Many of the features listed in (280) below are deductive conclusions based upon how an N or D might be represented in the mind of the speaker. For example, a nominal such as *such brutes* might be represented by the N *brute* at base-level carrying the features of [+common], [+count], [-abstract], [+animate], [+human], [+identity] (representing a *type* of person in the person's mind), etc. (cf. Chomsky 1965:82). According to our *Variable Feature-Raising* hypothesis of (246), the [+identity] feature of N⁰ would need to project onto the functional category of D⁰ and appear in conjunction with a [-def] feature of D⁰, in order to license at PF the possible morphemes that may be inserted in D⁰ (e.g., *such*). In the case of recursive D such as in the singular form *such a brute* (DP[D[such DP[D[a NP[N[brute]]]]]]), I will speculate that the [+identity] feature from N⁰ 'passes through' the lower D⁰ on its way to the higher D⁰ landing-site, where it then licenses the insertion of *such* at PF. Both the lower and higher D⁰, meanwhile, share a copy of the [-def] feature, thereby licensing the insertion of *a* in the lower D⁰ at PF. We will discuss the licensing of recursive D⁰ in section 5.2.3.2. (280) shows some sample syntactic features on D and the possible subcategorisation frames.

(280) Some sample feature-indexes on D⁰ 185

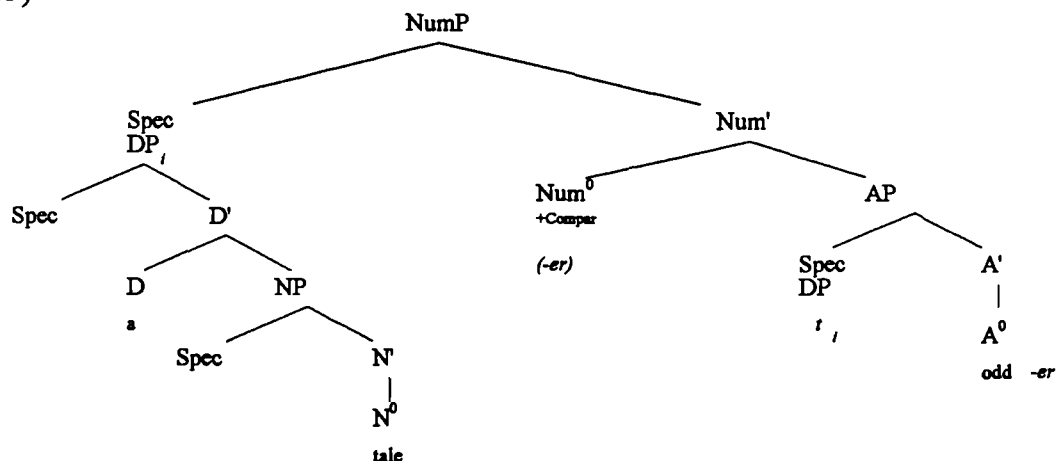
<i>a</i> , D, -Def, -Dem, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>a man, a hundred men</i>
<i>the</i> , D, +Def, -Dem, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>the chair/the chairs/the two chairs</i>
<i>this</i> , D, +Def, +Dem, +Proximate, _____	NumP	<i>this chair</i>
<i>those</i> , D, +Def, +Dem, -Prox, +Pl, _____	NumP	<i>those chairs/those two chairs</i>
<i>some</i> , D, -Def, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>some man/some men (are at the door)</i> ¹⁸⁶
<i>what</i> , D, -Def, +Wh, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>what report/what reports</i>
<i>which</i> , D, -Def, +Wh, +Discriminate, ±Plural, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>which paper/which papers</i>
<i>such</i> , D, +Def, +Identity, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>such a man (as that)/such brutes</i>
<i>we</i> , D, +Def, +pro, +1p, +Nom, +Pl, _____	$\left. \begin{array}{c} \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>we the students/we students</i>
<i>us</i> , D, +Def, +pro, +1p, +Acc, +Pl, _____	NumP	<i>us students</i>
<i>you</i> , D, +Def, +2p, +Nom, +Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>you student/you the students/you students</i>

¹⁸⁵Cf. Zwarts (1994:3) for similar sets of features realised on D.

¹⁸⁶Note that deictic (i.e., indeterminate) *some* is different from numeric (i.e., Q) *some*, as in figure (278).

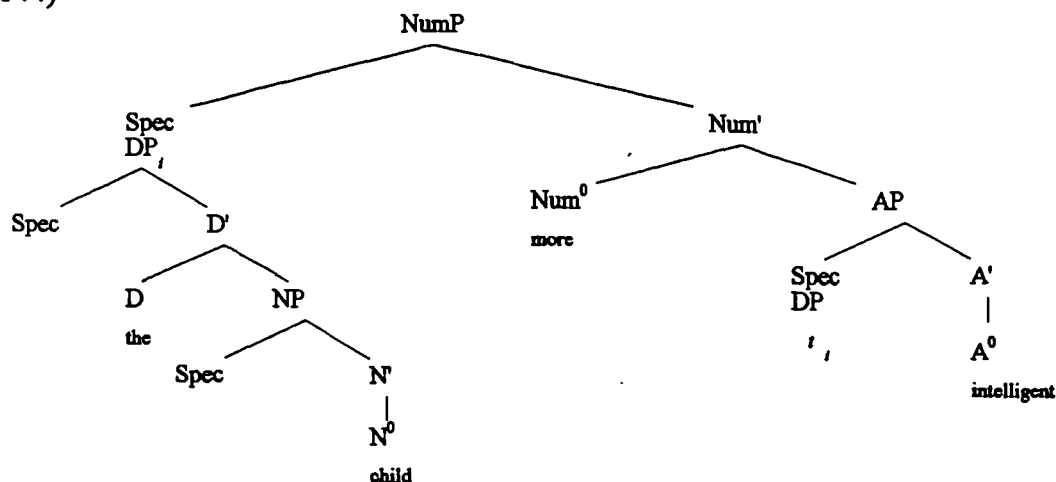
③ Finally, after raising of the DP subject specifier and the occurrence of any excorporation and incorporation processes, *Alternative Realisation* must occur in the case of morphemes such as the comparative and superlative *-er* or *-est*; in order for these morphemes to be realised on the A⁰ head at PF. In our analysis in (143), comparative and superlative morphemes such as *-er*, *-est*, *more*, *most*, etc. are Num⁰ heads.

(143)



Alternative Realisation internal to a NumP is a straightforward process at PF once all constituents have moved to form an S-structure. (143) shows the intermediate S-structure of *an odder tale*, before Option 1 or Option 2 applies to place *tale* in an N-final position. After DP-movement of *a tale* to [Spec,NumP], there is a 'clear path' between the Num⁰ category and the A⁰ head of its phrasal sister. Hence the [+Comparative] feature of Num can be alternatively realised on its sister head *odder* as the grammatical morpheme *-er* at PF. In section 3.3.3.3. we will return to Alternative Realisation for a more detailed examination. For a NumP such as *the more intelligent child*, Alternative Realisation need not occur, as the [+Comparative] feature of Num is realised *in situ* as *more*.

(144)



2.5. Subject specifiers in PPs

The [Spec,PP] position is analogous to the [Spec,AP] position in that analyses by different researchers have tended to treat this position along the same lines, i.e., as containing modifiers which vary in both categorial type (e.g., *N*, *A*, *P*) and status (e.g., X^0 or X^2). These premodifiers in [Spec,PP] are of the following types:

- (i) degree (cf. Emonds 1985:19; van Riemsdijk 1978:45-8; Jackendoff 1977:149; Radford 1988:135, 246-52)

(145)

- (a) He was *right* within the limit.
- (b) She is *well* under the productivity quota.
- (c) The measurements were *way* out.
- (d) We are *too* behind schedule.
- (e) They are *so* ahead of us.
- (f) These days the quantity is *much* over the required amount.
- (g) His proposal is *enough* within the negotiated parameters.
- (h) We talked *long* into the night.
- (i) You need to walk *far* along the road.
- (j) Some deer were found *deep* in the mire.
- (k) The yeti lives *high* up in the Himalayas.
- (l) My brother is *well in* with the organisers.
- (m) The pressure is *enough down* in level to warrant alarm.
- (n) The key is *just outside* under the doormat.
- (o) The kite soared *way up above* over the rooftops.
- (p) We discovered gold *immediately* under the soil.
- (q) You are *completely* in the wrong.
- (r) I'll see you *directly* before the trial.
- (s) The shop is *just* down the road.
- (t) Smoking is prohibited *only* inside.
- (u) I'll speak *even* without my notes.
- (v) The old tyre is *still* behind the garage.¹⁰⁴
- (w) Is your head under the tap *yet*?¹⁰⁵
- (x) He's been difficult *ever* since the quarrel.
- (y) My house is *farther* down the road.

¹⁰⁴In a Subject Specifier/Be-raising framework, the underlying structure for *the old tyre is still behind the garage* is *BE PP[the old tyre P[still P[behind the garage]]]*.

¹⁰⁵This example is similar to (v); with an underlying structure of *BE PP[your head P[P[under the tap] yet]]] ?*

- (z) The Under-Secretary is *deepest* in the affair.
- (æ) He was *more* forward in the seat.
- (ð) They are *most* over the time allowed.
- (ɒ) We are *less* under an obligation.
- (ξ) You are *least* without resources.

(ii) measure (cf. Jackendoff 1977:160; van Riemsdijk 1978:46-7, 62-3; Radford 1988:135, 251)

(146)

- (a) The factory is *eleven miles* away.
- (b) We organised a reunion *two years* after our graduation.
- (c) *Twenty metres* behind the barn is no-man's land.
- (d) *A few hours* after the meeting he drove home.
- (e) She left for America *a couple of weeks* before the wedding.
- (f) He stashed the gun *all the way* up inside a drainpipe.

(iii) direction/location (cf. van Riemsdijk 1978:46-7; Radford 1988:246-7, 251-2)

(147)

- (a) She put it *up* in the loft.
- (b) I keep the wine *down* in the cellar.
- (c) The dog sleeps *out* on the patio.
- (d) The inspector's office is *on through* towards the exit.

From the data we see that, as with adjectival phrases, the premodifier position in prepositional phrases can be occupied by degree (subsuming comparative and superlative) and measure phrases, as well as direction phrases. Whilst generative studies generally place all of these elements in [Spec,PP], I treat degrees and measures as conceptually quantificational and so, analogously to adjectival premodifiers, inserted in a Num node at PF. Hence in our analysis of PPs, pre-P modifiers of a numeric nature occupy a Num node, as in *we are* $_{NumP}[too_{PP}[e_{P}[behind\ schedule]]]$ and *it needs to go* $_{NumP}[more_{PP}[e_{P}[up\ the\ shaft]]]$; whilst pre-P modifiers of a directional/location nature occupy a (recursive) P node, as in *the dog sleeps* $_{PP}[out_{PP}[e_{P}[on\ the\ patio]]]$ and *the inspector's office is* $_{PP}[on_{PP}[e_{P}[through_{PP}[e_{P}[towards\ the\ exit]]]]]$. But before continuing with our analyses in this vein, we need to look again at the specifier position of NumP and of PP.

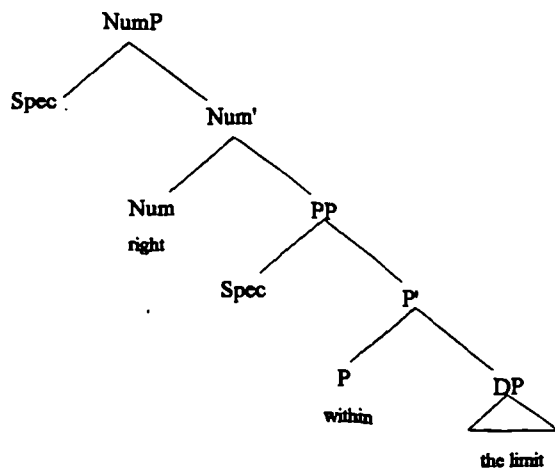
2.5.1. A recapitulation of [Spec,NumP] and [Spec,PP]

As we observed in section 2.4.2. with respect to Num and AP complements, the subject specifier position of a NumP is null by 'default'; [Spec,NumP] is utilised only as a landing-site for subject nominals raising for Case-marking (cf. *I want* NumP[*her* Num'[*completely* PP[*t* P'[*in the picture*]]]]]; *she is* NumP[*t* Num'[*just* PP[*t* P'[*down the hall*]]]]). Concerning the subject specifier position of PPs, we observed in section 1.5. (77) that this is dependent upon the complement or adjunct status of the PP constituent; *nonpropositional complements* normally have null subject specifiers (i.e., XP[*e* X']) whilst *nonpropositional adjuncts* may have null (i.e., XP[*e* X']) or absent (i.e., X⁰ or X' only) subject specifiers. As PPs generally function as modifier complements to a DP or as locational adjuncts to a VP, a PP will normally be an X^{max} constituent with a null subject specifier position. For example, in the nominals DP[*the loss*] PP[*e* P'[*of the ship*]] and DP[*her disgust*] PP[*e* P'[*at his behaviour*]]], the nonpropositional PP complements to the DP *the loss* and the DP *her disgust* are P^{max} constituents with null subject specifier positions. Similarly, in *I* VP[*t* V'[*pushed him*]] PP[*e* P'[*over the side*]] and *the dog* VP[*t* V'[*sleeps*]] PP[*e* P'[*out* PP[*e* P'[*on the patio*]]]]], the nonpropositional PP adjuncts are P^{max} constituents with null specifiers. A P adjunct may itself take a nonpropositional PP complement, as in PP[*e* P'[*out* PP[*e* P'[*on the patio*]]]]]. Finally, in the *marked* case of a Spec-activating predicate (cf. section 1.5. (v)), the subject specifier is overt: cf. *I demand* PP[*an inquest* P'[*into the matter*]]].

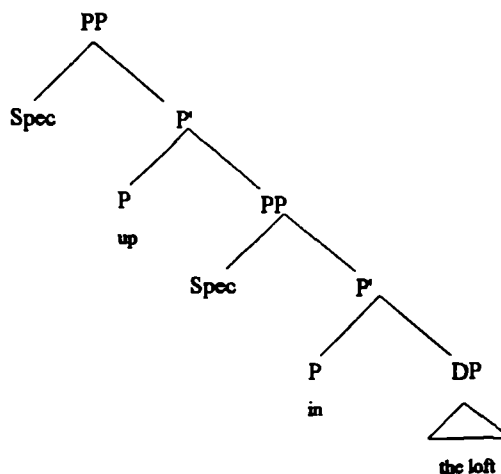
2.5.2. Num heads and P heads

Turning now to Num heads and P heads, the internal structures of a NumP such as *right within the limit* and a PP such as *up in the loft* are shown in figures (148) and (149) below. For analyses with recursive P such as (149), where a P head takes a PP complement, cf. Jackendoff (1973:348-54).

(148) *right within the limit*

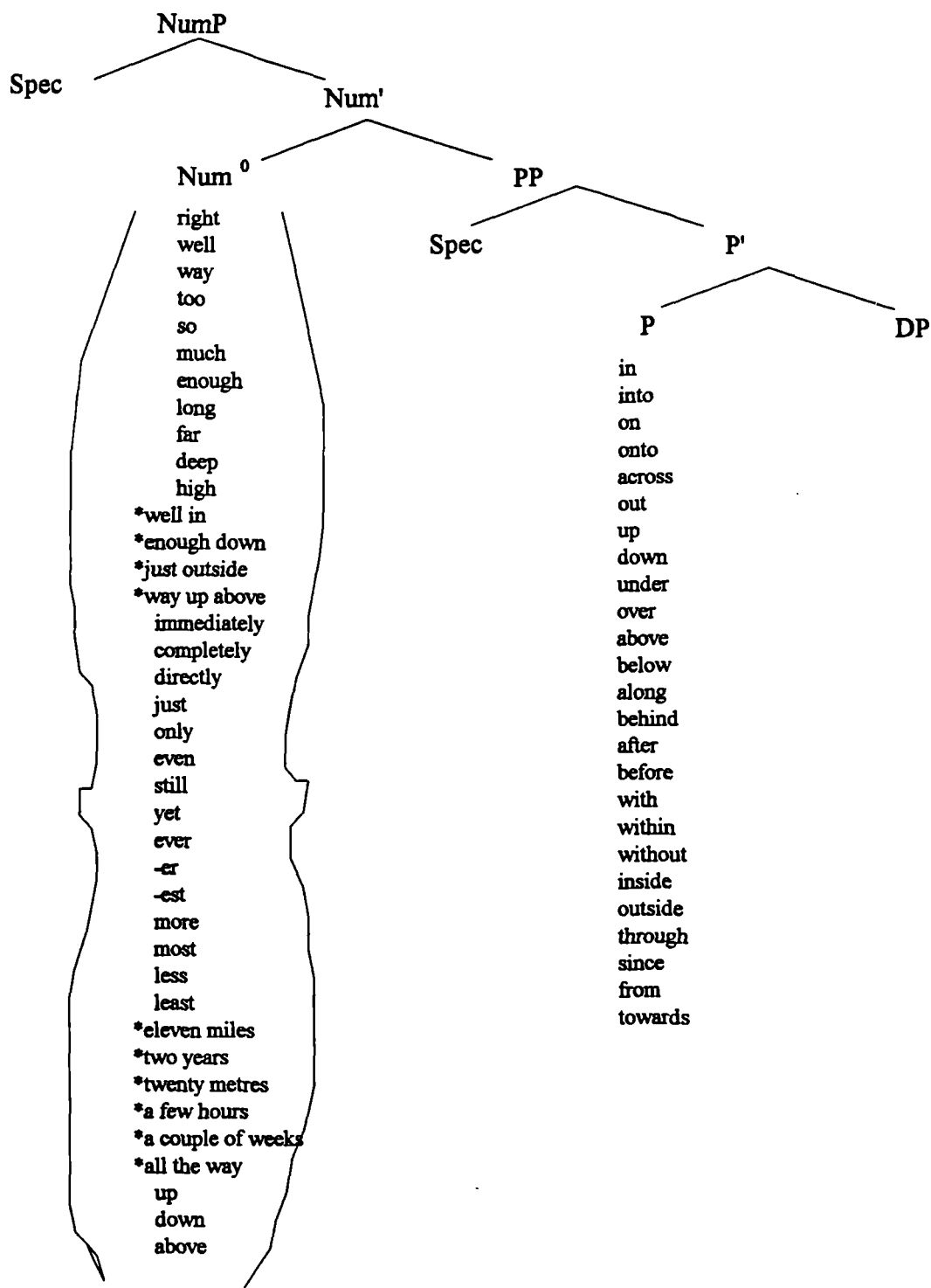


(149) *up in the loft*



A fairly comprehensive list of the proposed contents of a Num node which can take a PP complement is outlined in figure (150). As with Num and AP complements, this head Num node can contain elements of different categorial *type* (i.e., *N, A, P*) but of a single categorial *level* (i.e., X^0). Thus functional Num, like the functional category *D*, can contain elements such as nouns (*way out*), adverbs (*right within, just outside, completely under*), degrees (*too behind, so ahead*), quantifiers (*much over, enough down*), etc. (Cf. fn. 101 and Jackendoff 1977:165).

(150)



2.5.3. Complex Num and P constructions

As we saw earlier with figure (131), the starred strings in the Num node in figure (150) represent those elements that cannot be contained in an X^0 (i.e., Num⁰) node, as they are X^2 constituents. This violates structure preservation. In order to accommodate complex pre-P modifiers in constructions such as *well in with the organisers*, *enough down in level*, *just outside under the doormat*, *way up above over the rooftops*, *right on through towards the exit*, *eleven miles away from the factory*, *two years after our graduation*, *twenty metres behind the barn*, *a few hours after the meeting*, *a couple of weeks before the wedding*, and *all the way up inside a drainpipe*, we adopt an analysis of either (i) a Num head category with a recursive P complement; or (ii) a NumP subject specifier of a PP.

Num as a functional head predictably precedes the lexical head *P* (cf. *NumP*[*the city* *Num*[*completely* *PP*[*t* *P*[*under the water*]]]]] where *the city* gets a θ -role at D-structure from the *P'* predicate *under the water*), and a *NumP* subject specifier predictably precedes both *Num* and *PP* (cf. *NumP*[*five points* *Num*[*less* *PP*[*t* *P*[*from the total*]]]]] where *five points* raises to the [Spec,NumP] position). A simple word order test in (151) determines a *Num* category from a *P* category. The *Num* element is italicised.

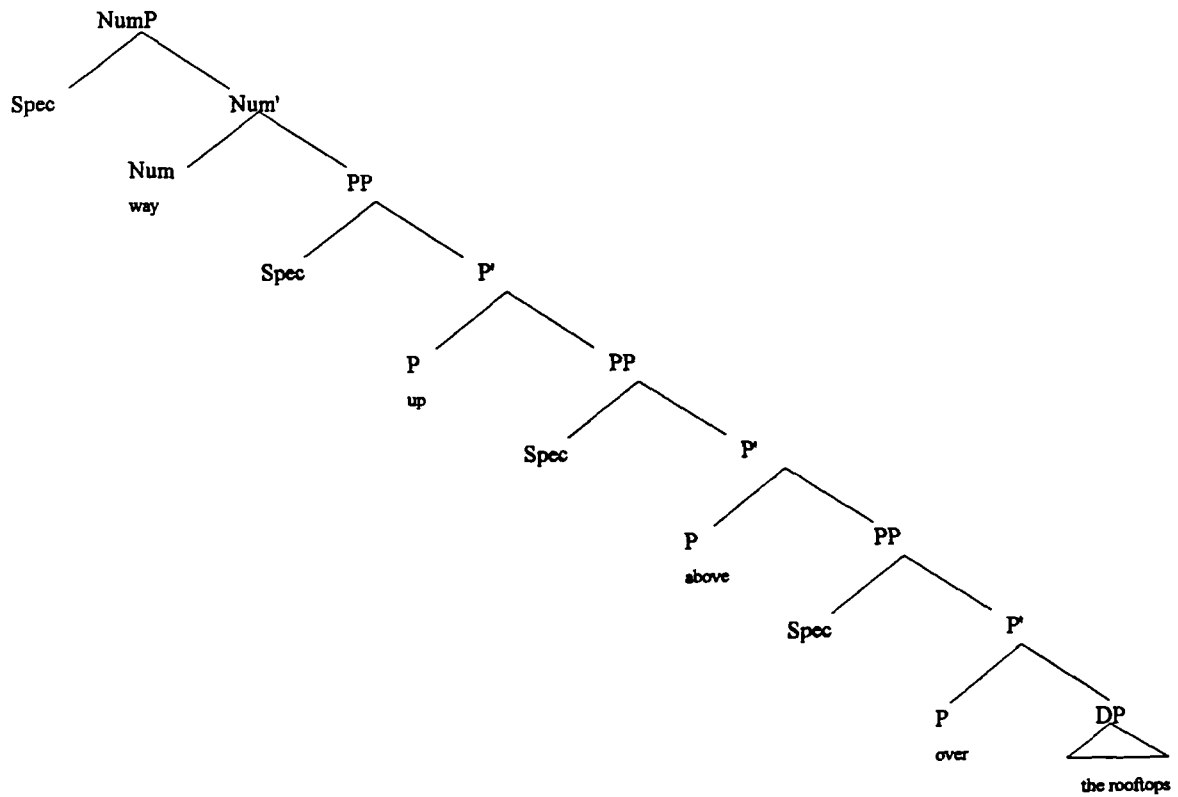
- (151) (a) *just* outside the door
 (b) *outside *just* the door
- (c) *way* before the event
 (d) *before *way* the event
- (e) *right* over the top
 (f) *over *right* the top
- (g) *completely* under the water
 (h) *under *completely* the water

The same word order test determines a *NumP* subject specifier from both a *Num* and a *P*:

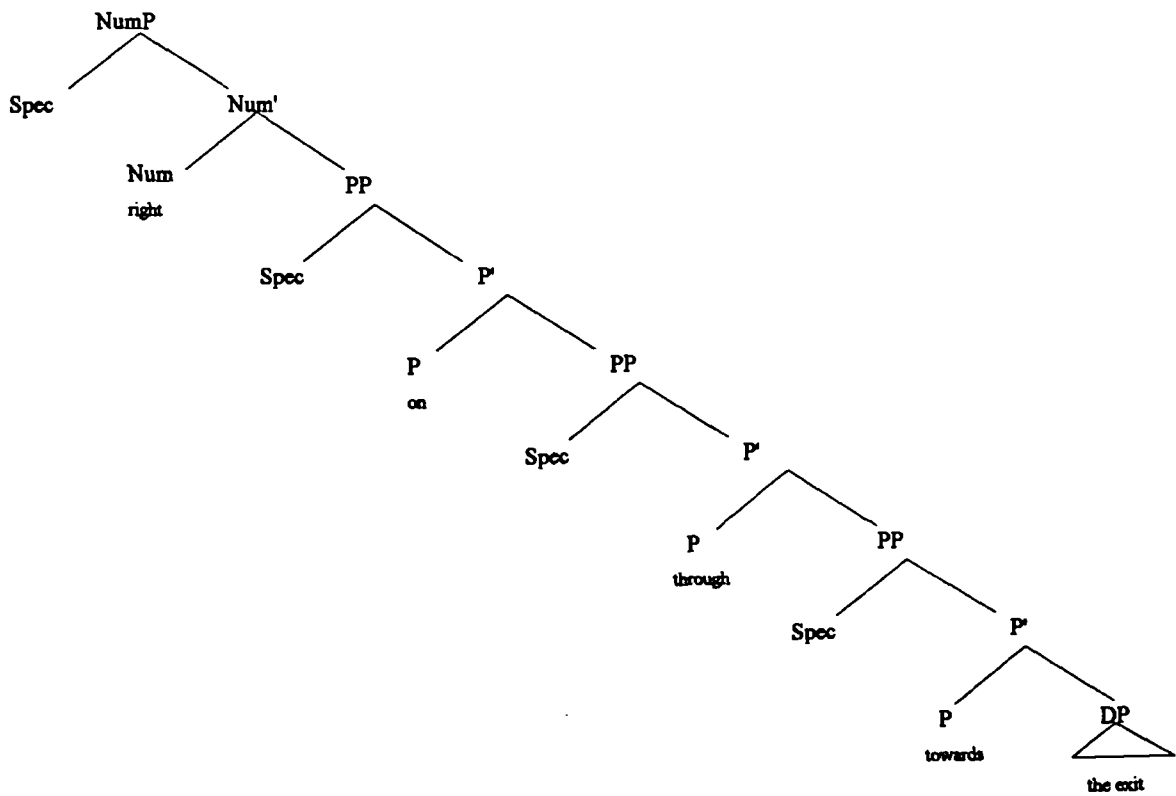
- (152) (a) *NumP*[*five points*] *less* from the total
 (b) **less* *NumP*[*five points*] from the total
 (c) **from* *NumP*[*five points*] *less* the total
- (d) *NumP*[*a few hours*] *more* behind schedule
 (e) **more* *NumP*[*a few hours*] behind schedule
 (f) **behind* *NumP*[*a few hours*] *more* schedule

Figures (153) - (154) show a Num head with a recursive P complement

(153) *way up above over the rooftops*

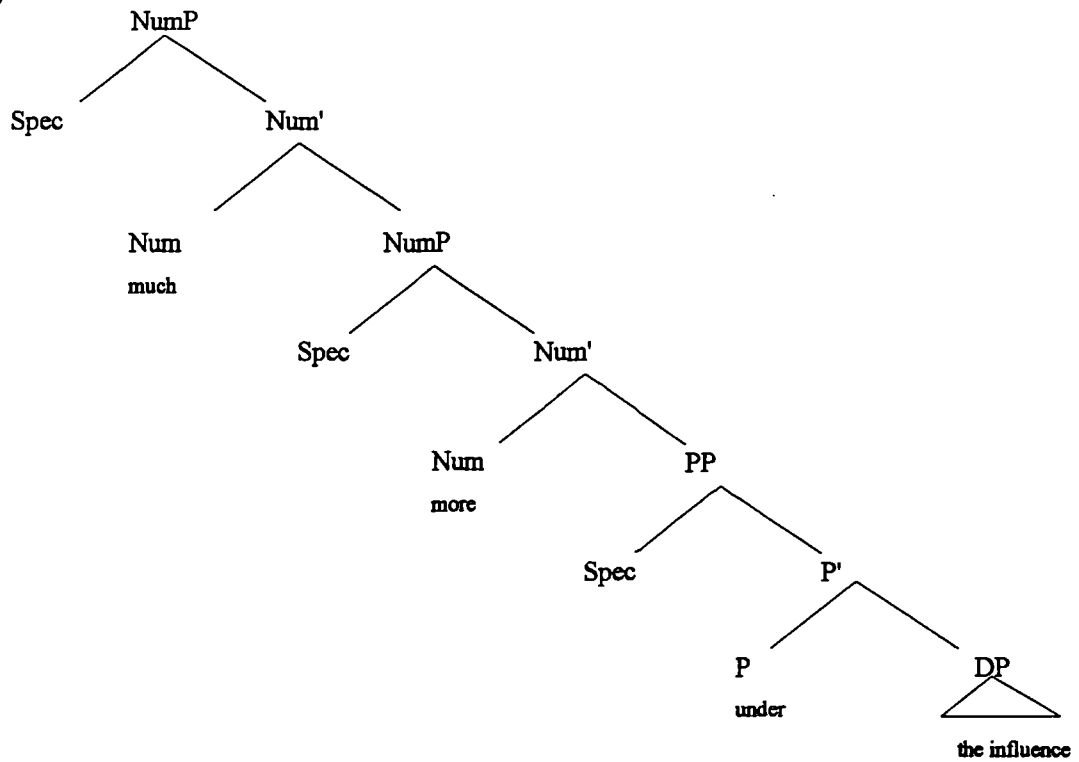


(154) *right on through towards the exit*



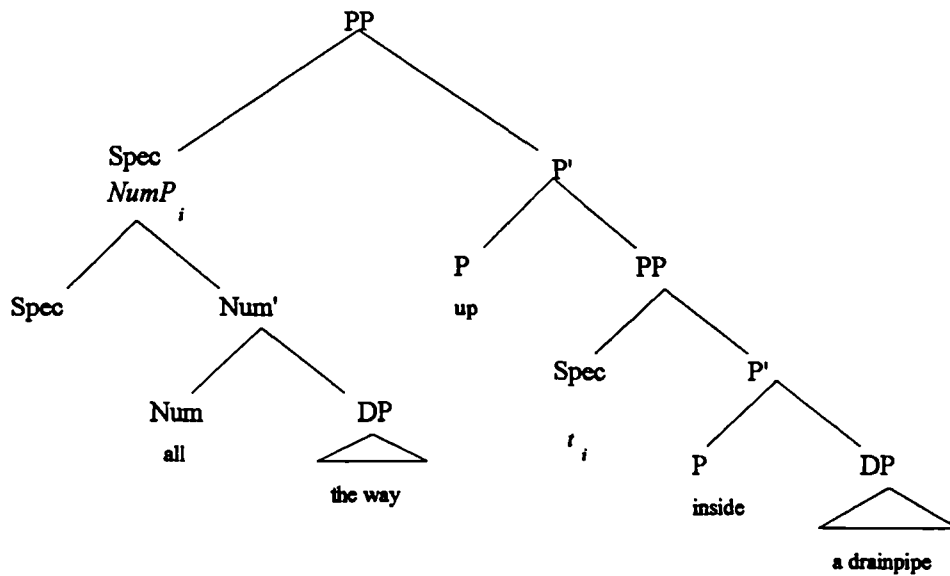
Num itself may be recursive with a PP complement:

(155)

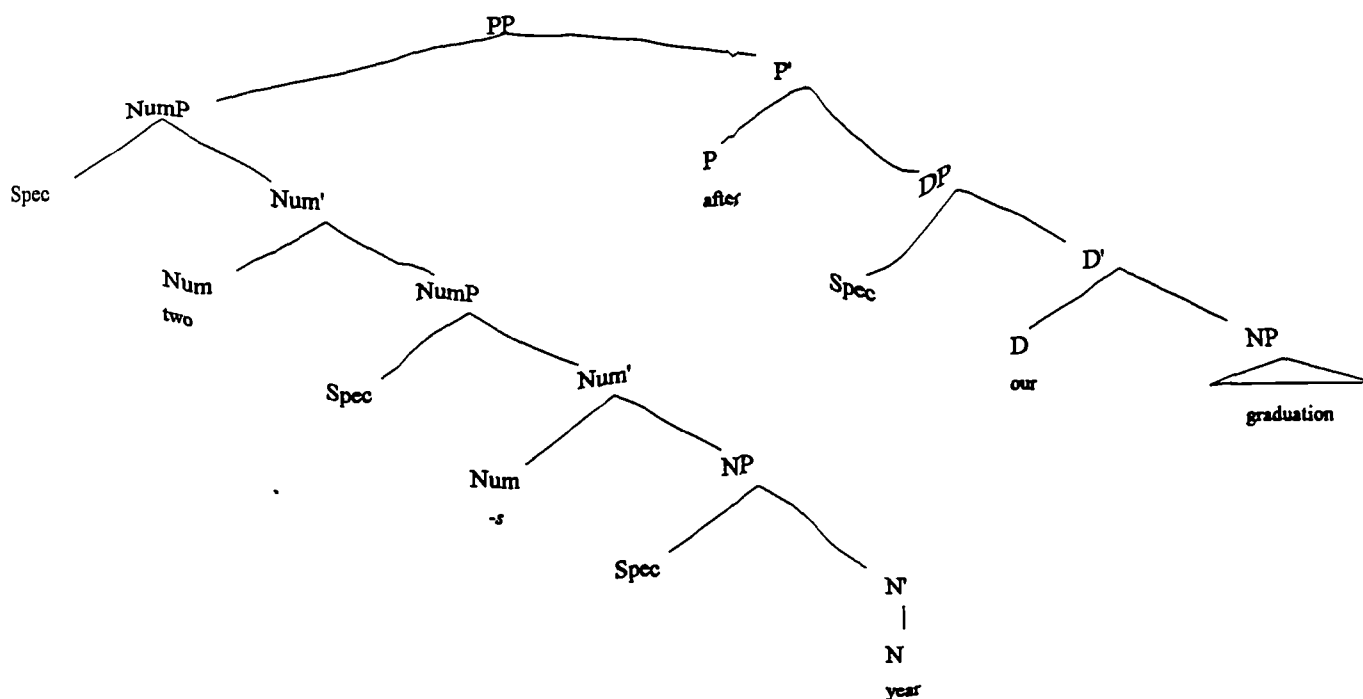


And a P head can take a NumP subject specifier:

(156) *all the way up inside a drainpipe*



(157) *two years after our graduation*



In figures (156) *all the way up inside a drainpipe* and (157) *two years after our graduation*, PPs *up inside the drainpipe* and *after our graduation* take NumP (rather than DP) subject specifiers: *all the way* and *two years*, respectively. At D-structure these subject specifiers are base-generated as sisters to the lexical P' and we observe that, analogous to the adjectival premodifier analyses of section 2.4.2., certain syntactic processes occur in a certain order. In figure (156), *Move- α* and *Late Lexical Insertion* occur successively. *NumP-movement* of the NumP subject specifier *all the way* raises *all the way* to its landing-site in the specifier position of the matrix PP, where we predict that it will be string-adjacent to a Case-marking head such as I or D or V or P.¹⁰⁶ Then, once movement is complete, the functional category morphemes *all* and *the* and *a* can be late lexically inserted at PF, triggering the functional categories Num (and NumP), D (and DP), and D (and DP), respectively.

In figure (157), *Move- α* is not necessary because the NumP *two years* in its base-generated position is already in the highest [Spec,XP] position possible for Case-marking: cf. *we waited_{PP}[two years_{P'}[after our graduation]]*, where *two years* is accusative Case-marked by *wait*.¹⁰⁷ But *Alternative Realisation* is necessary internal to the NumP subject

¹⁰⁶Raising for Case-marking is one of the principle motivations for *move- α* of nominals in GB-theory; cf. fn 42.

¹⁰⁷In non-copular (i.e., non-raising) constructions, base-generation of subject nominals in [Spec,XP] usually entails that these nominals are in Case-marked positions: cf. *I want_{PP}[him_{P'}[out of here]]*, where *him* is exceptionally Case-marked (accusative) by *want*. However, Case-marking of the nominals *two years* and *all the way* is problematic, as discussed below.

specifier *two years*, in order to realise the plural *-s* morpheme on the N category *year* at PF. Alternative realisation of the plural *-s* morpheme logically occurs *after* the late lexical insertion of all the Num morphemes. Num morphemes are late lexically inserted because we have claimed that Num, like D and I and T and Agr and Asp, etc., is an ancillary functional category. We have further suggested that these ancillary functional categories are 'dormant' in a derivation until they are *triggered*. They are triggered by the late lexical insertion of lexical or grammatical morphemes into their nodes at PF (cf. sections 1.3. and 2.3.1.). Once late lexical insertion has occurred, other PF processes such as *Alternative Realisation* can subsequently take place.

However, the reader will note from examples such as *he stashed the gun all the way up inside a drainpipe* and *we organised a reunion two years after our graduation* that Case-marking of the nominal NumPs *all the way* and *two years* immediately poses a problem: *all the way* and *two years* and are in fact isolated from any potential Case-marker at S-structure:

(158)

- a) $_{IP}[he \quad _{I}[\quad _{VP}[t_i \quad _{V}[stash \ the \ gun \quad _{PP}[all \ the \ way \quad _{P}[up \quad _{PP}[t_j \quad _{P}[inside \ a \ drainpipe]]]]]]]]]$
 b) $_{IP}[we \quad _{I}[\quad _{VP}[t_i \quad _{V}[organise \ a \ reunion \quad _{PP}[two \ years \quad _{P}[after \quad _{DP}[our \ graduation]]]]]]]]]$

In example (158) (a), *he* is nominative Case-marked at S-structure by Agr of I, *the gun* is accusative Case-marked at S-structure by the verb *stash*, and *a drainpipe* is oblique Case-marked at S-structure by the preposition *inside*. But the NumP *all the way*, even after movement (in our analysis), is likewise not in a position at S-structure which is sister to any appropriate Case-marker. In (158) (b), *we* is nominative Case-marked at S-structure by Agr of I, *a reunion* is accusative Case-marked at S-structure by the verb *organise*, and *our graduation* is oblique Case-marked at S-structure by the preposition *after*. But the NumP *two years* is *not* in position at S-structure which is adjacent to any Case-marker. Examples (158) (a) and (b) therefore, reveal a significant Case Filter violation that has been unaddressed in the cited literature (cf. Jackendoff 1977:160; van Riemsdijk 1978:46-7; Radford 1988:135, 251). Moreover, the motivation for movement of *all the way* is called into question, since raising for Case-marking doesn't meet our prediction that raising will facilitate Case-marking. In *he stashed the gun all the way up inside a drainpipe*, *all the way* is apparently without a Case-marker, despite raising to the matrix [Spec,PP] position. Such problems concerning isolated nominals in PP constructions and the constraints of Case theory require close examination, and are present whether or not a NumP analysis is adopted for *all the way* and *two years* in (158). I hope that the theoretical issues raised in this chapter are a step towards illuminating such difficulties.

Before continuing on to the next chapter, let us consolidate our proposals so far with respect to the theme of symmetry in syntactic structure. We have claimed, after Stowell (1981, 1983) a *Subject Specifier* hypothesis in which nominal subjects (e.g., DP, NumP) primarily occupy the [Spec,XP] position. We have postulated that certain verbs are *Spec-activating predicates*, by virtue of a [+Accusative] Case feature which they must discharge onto the subject DP of a sister X^{\max} complement. We have suggested that X^{\max} may have overt subject specifiers due to: (i) a Spec-activating predicate which activates a subject specifier to its right; or (ii) a lexical X' predicate which selects a subject specifier to its left. We have designated that an X^{\max} with an overt subject specifier is a *big phrase* rather than a small clause. And, since all X^{\max} have potential subject specifiers, we have distinguished between *propositions* with an overt subject DP, and *nonpropositions* with a null or absent subject specifier (e.g., nonpropositional complements as in *the problem* $_{PP}[e \text{ } _P[\textit{with syntax}]]$ and *her pride* $_{PP}[e \text{ } _P[\textit{in his achievement}]]$; and nonpropositional adjuncts such as *a girl* $_{PP}[e \text{ } _P[\textit{with auburn hair}]]$ and *he* $_{VP}[t \text{ } _V[\textit{coughed}] \text{ } _{Adv}[\textit{violently}]]$). Finally, as a consequence of subject specifiers, we have postulated a *Num* node which can be applied cross-categorially, to accommodate elements previously housed in [Spec,XP]. Hence wherever the dominant notion is one of quantification or *number* (i.e., amount or degree), a Num^0 head takes an X^{\max} complement.

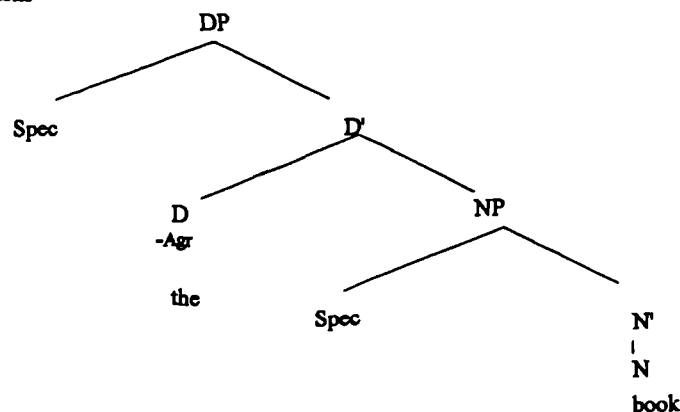
We will return to *Num* in Chapters 4 and 5. As a precursor to a study of *Num* in nominals, in the next chapter we examine in detail the syntax of DP.

Chapter 3: The case for Infl in the DP

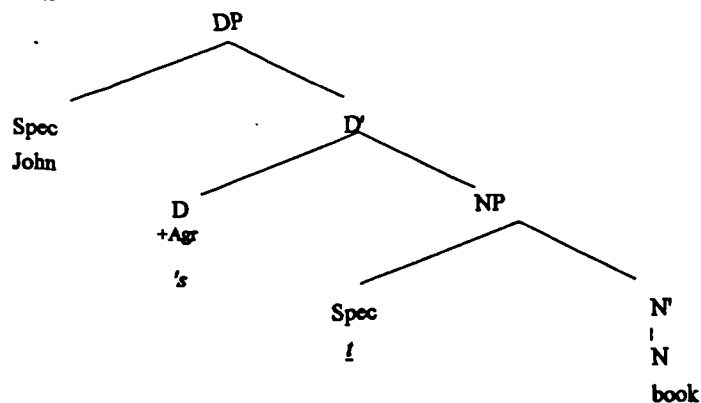
3.1. Deixis and possession

In this chapter we address some of the asymmetries in Abney's (1987) 'DP-Analysis', and elaborate DP somewhat in the light of cross-linguistic evidence from Hungarian. Recall from section 2.3.1. that in the DP-analysis, nominal arguments are maximal projections of the functional category D, which, being *ancillary*, is triggered only in instances of deixis or possessivisation:

(159) deictic nominal



(160) possessive nominal

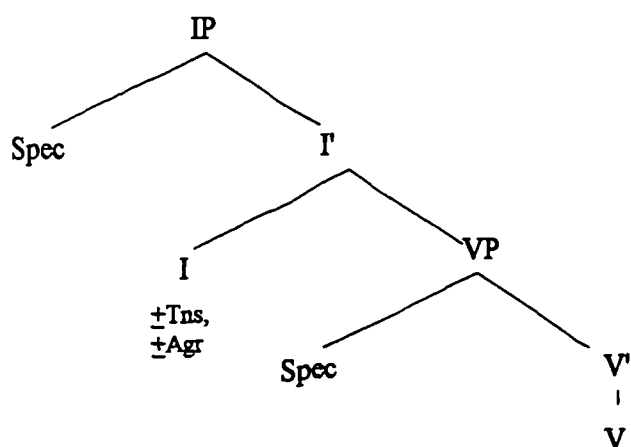


In deictic nominals such as figure (159), a determiner in D is, according to Abney, a consequence of a [-Agr] feature on D, which licenses the insertion of *the* at PF. D is [-Agr] because there is no Possessor subject in the embedded NP, which would trigger possessive morphology. In possessive nominals such as figure (160), the Possessor subject *John* triggers a [+Agr] feature on D. This, in turn, licenses the insertion of

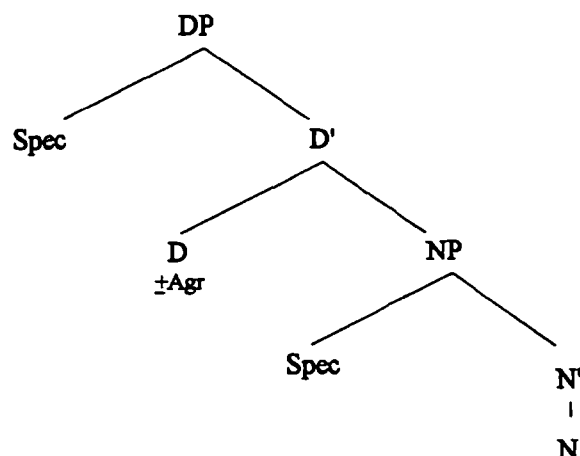
Poss 's at PF. *John* raises from its underlying position of [Spec,NP] to the superficial position of [Spec,DP] for genitive Case-assignment by [+Agr] of D (cf. fn. 65). This derives_{DP}[*John* D['s NP[*t* book]]]. We can see from conflating the data in figures (159) and (160) that deixis and possession preclude one another in English; i.e., we can have *the book* or *John's book* but not **John's the book*.⁹⁸ This conflict was, in fact, much of the motivation for Abney's 'DP-Hypothesis'.

Under the DP-Analysis then, D is the site of an Agr feature (Abney 1987:59). Abney proposes that this Agr of D is analogous to the Agr of I in clauses, so that nominal DP = clausal IP:

(161) clausal IP



(162) nominal DP



In figures (161) and (162) there is a clear correspondence between [\pm Agr] of I and D and the leftwards assignment of structural Case to a subject specifier. Hence Agr of D is the counterpart of Agr of I in its Case-assigning properties, with [+Agr,D] assigning genitive Case and [+Agr,I] assigning nominative Case. From Abney's analysis (pp. 58-9, 79, 83) we can draw the following parallels between clausal I and nominal D for English:

- (163) (a) [+Agr] of Infl is realised by agreement inflection (I^{+Agr} = -s);
 [-Agr] of Infl is realised by lexical *to*⁹⁹ (I^{-Agr} = *to*)
- (b) [+Agr] of Det is realised by possessive inflection (D^{+Agr} = 's)
 [-Agr] of Det is realised by lexical determiners (D^{-Agr} = *a, the, those*, etc.)

⁹⁸As suggested in fn. 84, this seems to be a parameter amongst languages; Hungarian, German, Italian, Finnish, Icelandic, and Somali are some of the languages that permit the cooccurrence of possession and deixis.

⁹⁹'Lexical' when applied to functional morphemes such as *to* and determiners such as *the/that* is purely a descriptive term to indicate a word form versus an inflectional morpheme. 'Lexical' in this sense is not to be confused with 'lexical category'.

In view of these contrastive realisation patterns, Abney attributes the ungrammaticality of **John's the book* to a co-occurrence restriction for English. This is a constraint whereby in nominals the features of [+Agr] (realised as *Poss 's*) and [-Agr] (realised as determiners) can not co-occur on D, in the same way that in clauses the features of [+Agr] (realised as agreement inflection) and [-Agr] (i.e., realised as *to*) can not co-occur on I.¹¹⁰ Therefore, *Poss 's* and lexical determiners can not co-occur in DP in the same way that 3sg -s and lexical *to* can not co-occur in IP in English. This is illustrated by the data in (164) and (165).

- | | | |
|-------|--|---|
| (164) | * <i>John's the book</i> | (<i>Poss 's</i> + determiner) |
| (165) | (a) * <i>John to read(-s) the paper</i> | (<i>to</i> + inflected main verb) |
| | (b) * <i>John to can read the paper</i> | (<i>to</i> + finite modal) |
| | (c) * <i>John to has read the paper</i> | (<i>to</i> + inflected aspectual auxiliary <i>have</i>) |
| | (d) * <i>The paper to was read by John</i> | (<i>to</i> + inflected passive auxiliary <i>be</i>) |

By positing an Agr element for nominals mirroring the Agr of clauses, Abney convincingly draws a more symmetrical internal analysis for the two primary lexical categories of N and V (DP and IP being their functional category expansions).¹¹¹ Agr of D plays a crucial role in Abney's analysis. Yet what exactly is this *Agr* feature? Using Chomsky's (1965:81) notion of distinctive feature-matrices, Agr can be taken to be a composite of the features *person*, *gender*, *number*, and *Case* (the ϕ -features of Chomsky 1981:52, 330 and 1986b:24). As it stands, Abney's analysis focuses only on the *Case* feature of the Agr complex; [+Agr] of D = [+genitive] *Case* (realised as *Poss 's*). Hence the DP-Analysis fails to take into account the *other* ϕ -features of *person*, *number*, and *gender*. Consequently, there still remain important questions for nominals concerning the Agr complex. As we shall see, the DP-Hypothesis must be elaborated a bit, in order to accommodate all of these ϕ -features in line with current theorising.

3.2. Why DP needs more categories

Whilst DP is becoming commonplace in generative literature as the notation for nominals and is a significant advance over earlier treatment of possessive nominals, this structure is insufficient in certain respects. One difficulty is that DP cannot address nominal constructions that are both deictic (i.e., extralinguistically referential) *as well as*

¹¹⁰[+Agr] and [-Agr] can not co-occur in English because if a lexical determiner is realised in D^0 , *Poss 's* can not be simultaneously realised and a Possessor subject could not then be assigned Case.

¹¹¹It is feasible that *Agr*, like *Num*, exists across head categories.

numeric. I take syntactic deixis to be the structural representation of exophoric (i.e., extralinguistic) reference. Thus the D category includes such deictic elements as determiners (to be enumerated in Chapter 4), possessor nominals, and pronominals. Determiners are deictic because they all ultimately indicate *exophoric* (i.e., prior to *anaphoric*) reference, with [\pm definiteness] being a specifiable feature. Possessor subjects and pronominals are deictic because they are inherently referential to the extralinguistic world, as in *Edward's* bicycle, *his* theory; *us* syntacticians, *we* gals.

If, then, we limit the D category to exophoric reference, we encounter a problem. Complex nominals that are both deictic and numeric are common in English and occur in either sequence and with multiple recursion; e.g., *the two* horses, *his two* horses, *all the* horses, *the king's two* horses, *both the king's* horses, *two (of) the king's* horses, *all the king's five hundred* horses, *the king's many hundreds* (of) horses, etc. Under the DP-Analysis as it stands, deictic and numeric elements would be competing for the same category of D. There are, in the literature of recent years, various references to a *Num* category in nominals (cf. Ritter 1991, 1992, 1993; Bernstein 1991, 1993a, 1993b; Rouveret 1991; Valois 1991a, 1991b, 1991c). Many of these analyses utilise the *Num* category for the plural morpheme (-s in English). For analysis of complex nominals such as those listed above, in Chapter 4 we will utilise *NumP* to house lexical numerals as well as plural affixes.

Equally important, it also emerges from the cross-linguistic evidence of several researchers (e.g., Szabolcsi 1983, 1990; Sioni 1990; Tonoike 1991) that Abney's position where *Agr* is a feature of D is inadequate for dealing with nominal constructions where there are multiple overt morphemes. For example, in addition to an overt Det, there may be overt *Case* and *Agr* and *Poss* in the DP, not to mention *Num*; as in the Hungarian nominal *a te-Ø vendég-e-d* (the thou-Nom-2sg guest-Poss-2sg; 'thy guest').¹¹² Consequently, we will argue for an *Infl* (I) node in the DP, to house all of these ϕ -features.

We shall start with *Agr* (Chomsky's abstract complex for the set of ϕ -features) in the DP. Concerning the status of *Agr* in nominals, there are at least three interpretations of the DP-Analysis currently circulating. These are examined in section 3.3. below.

¹¹²Case is abstract in this Hungarian example but in figure (173) (b) we will see that Case is overt in another type of possessive nominal in Hungarian.



3.3. The status of Agr in DP

From various analyses concerning Agr and D in nominals, it seems that there are various positions one can take: that Agr is a feature of D in nominals (cf. Fukui and Speas 1986; Abney 1987; Siloni 1990, 1991); that Agr is a feature of I in nominals (cf. Szabolcsi 1983, 1990; Kayne 1993; Zibri-Hertz 1995); or that Agr of D heads a category of its own in nominals (cf. Rouveret 1991; Ritter 1992; Tallerman 1993; Ouhalla 1994b), equivalent to AgrP of the 'split-Infl' hypothesis for clauses. Let us briefly review these three positions. In section 3.3.1. I present an analysis where Agr and Poss appear as features of D in nominals. In section 3.3.2. I present the view where Agr and Poss appear as features of I in nominals, corresponding to the Agr and Tense features of I in clauses. In section 3.3.3. I present an analysis where Agr and Poss head their own categorial projections within DP. Accordingly I call this latter analysis the *split-Infl of DP* hypothesis, along the lines of the 'split-Infl (of CP)' analyses of Chomsky (1988), Belletti (1988), Pollock (1989), Rizzi and Roberts (1989), and others (cf. fn. 34 for an analytical review of the 'split-Infl' hypothesis).

3.3.1. Agr as a feature of D (the *Agr-D* analysis)

In the syntax of a construction, we can define *feature* as an abstract binary quality that is specified for a positive or negative value, and *category* as a site for the insertion of lexical or grammatical morphemes (at D-structure or at PF). With these definitions, *feature* will play a part in the instantiation of certain types of morphemes, whereas *category* will act as a source-site for base lexical insertion of these morphemes, or as a landing-site for these morphemes under *move- α* . As an example, let us take the category D. As a *category* in the DP-Analysis, D can accommodate the PF-insertion of either the Poss 's' morpheme or a lexical determiner, or can act as a landing-site for X⁰ elements. Abney claims that D carries the *feature* of Agr.¹¹³ As a binary property, Agr is inherently specified for a [+value] or a [-value]. According to Abney, if the value of Agr is [+Agr], then Agr as a feature of D will license the insertion of Poss 's'. If the value of Agr is [-Agr], then Agr of D will license the insertion of a lexical determiner such as *a*, *an*, *that*, etc. I assume that the type of determiner that is instantiated depends on the other features of a particular category D, such as [\pm Definite], [\pm Demonstrative], [\pm Plural],

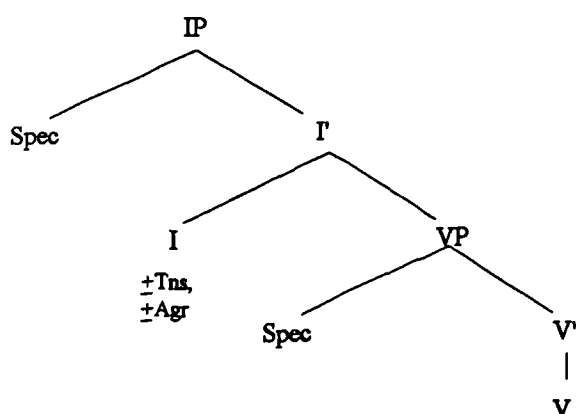
¹¹³For Abney, *Agr* (and not *I*) is an abstract composite element comprising, presumably, all of the ϕ -features person, number, gender, and Case; yet, as we noted in section 3.1., he is taking [+Agr] of D to be equivalent only to a *Case* feature (realised as Poss 's'). Hence where Agr of D = [\pm Case], as in the DP-Hypothesis, there is no acknowledgement of the *other* ϕ -features of the DP.

[±Proximate], etc. If, for example, a category D is the site of the features [-Agr], [+Def], [+Demon], [+Plural], [-Proximate], this would license the insertion of the lexical determiner *those* in English:

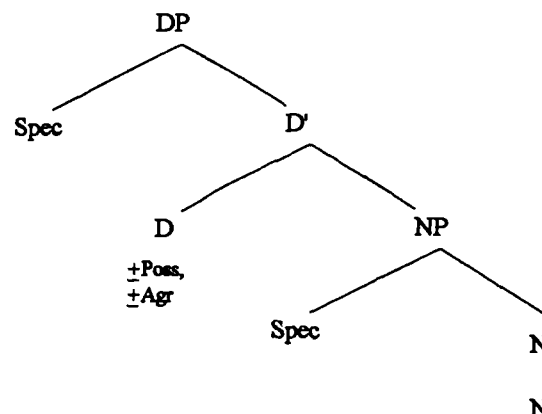
(166) D, -Agr, +Def, +Demon, +Plural, -Prox ____ NP realisation: *those*

Furthermore, if nominal D carries a [±Agr] feature like its clausal I counterpart, then we might expect D to carry a feature equivalent to clausal [±Tense]. Szabolcsi (1983: 89-90) claims that [*±Poss*] is the nominal equivalent of clausal [±Tense], due to the fact that possessor-noun agreement is identical to subject-verb agreement in Hungarian (i.e., $DP[\phi, Subj = \phi, N]$ and $IP[\phi, Subj = \phi, V]$). Under the DP-Analysis, where [-Agr] = lexical *det* and [+Agr] = *Poss* 's, [+Agr] is equivalent to [+Poss] in Szabolcsi's notation. Assuming that DP = IP, as Abney suggests, we can now represent D and I as carrying corresponding nominal and clausal features:

(167) features of I



(168) features of D



We can see from figure (168) that Agr and Poss are distinct features (Szabolcsi's claim), whereas for Abney, [+Agr] (i.e., *Poss* 's) = [+Poss]. To support her view Szabolcsi cites Hungarian data where Poss and Agr have overt morphology:

(169) az én-Ø vendég-e-m
 the I -Nom guest-Poss-1sg
 'my guest'

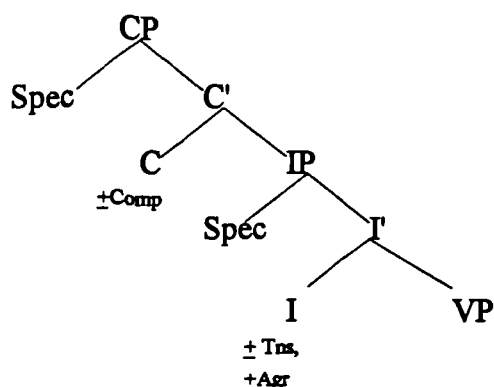
(170) a te-Ø vendég-e-d
 the thou-Nom guest-Poss-2sg
 'thy guest'

Such data from Hungarian provide evidence that Poss and Agr are distinct.¹¹⁴ But are they distinct features or distinct categories? And how can a lexical determiner be present along with overt Poss and Agr? All three of these elements can not occupy the single node of D. In Section 3.3.3. we will review some more data which suggest that all of these elements require distinct *categories*.

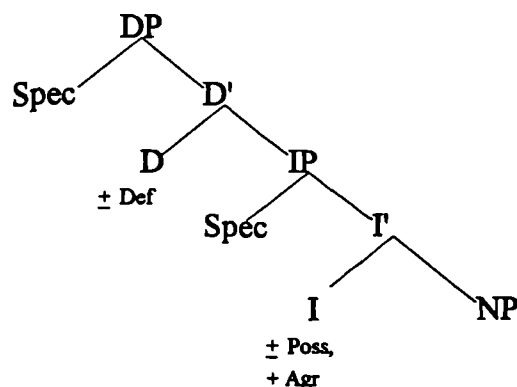
3.3.2. Agr as a feature of Infl of DP (the *Agr-I* analysis)

In the *Agr-D* analysis of section 3.3.1., D of nominals is similar to I of clauses, with [D,DP] exhibiting the features [\pm Poss] and [\pm Agr] and [I,IP] exhibiting the features [\pm Tense] and [\pm Agr]. However, Szabolcsi (1983, 1990) and Siloni (1990) claim that D is the nominal counterpart of C (not I), and suggest that both CP and DP contain an Infl node. This position suggests that I of DP houses the \pm Poss and \pm Agr features, and not D; and that **DP = CP**. This is represented in figures (171) and (172):

(171) clausal CP



(172) nominal DP



Their claim is based on data whereby Det and Agr-I are distinct in nominals in the same way that Comp and Agr-I are distinct in clauses. Let us return to our Hungarian nominals for such examples. Szabolcsi (1983, 1987) notes that in Hungarian nominals, a Possessor subject may be overt if and only if the possessed noun bears person-number agreement. Possessive DPs in Hungarian are of two types: ① where the determiner precedes the Possessor subject, generating a sequence of Det + Possessor; and ② where the determiner follows the Possessor subject, generating a sequence of Possessor + Det. If the determiner precedes the Possessor subject, this subject is the nominative case, with Poss and Agr

¹¹⁴In English, under the 'split-Infl' analysis (cf. fn. 34), we posit distinct Tns and Agr nodes based upon evidence from only a single morpheme for each, 3sg *-s* and *-Past -ed*: cf. *he walk-s-Ø* (walk-Agr-Tns) and *he walk-Ø-ed* (walk-Agr-Tns). We are extending this practise here to the Hungarian data.

realised on the head noun. If the determiner follows the Possessor subject, this subject is in the dative Case, with Poss and Agr again realised on the head noun. This is an invariable alternation. Figure (173) illustrates this.

- (173) (a) a te-Ø vendég-e-d
 the thou-Nom guest-Poss-2sg
 'thy guest'
- (b) te-nek-ed a vendég-e-d¹¹⁵
 thou-Dat-2sg the guest-Poss-2sg
 'thy guest'

Szabolcsi posits an abstract Case morpheme in (173a), claiming that the subject is morphologically unmarked for Case, as are English nominatives (cf. *he bought it*, *I bought him a book*, *his book*). In (173b) the Possessor subject *te* is clearly marked for dative Case. By extending this notion of abstract morphemes, we can re-analyse my own example of fn. 84 as:

- (174) Péter-nek a könyv-Ø-je
 Peter-Dat the book-Poss-3sg
 'Peter's book'

with the postulation of an abstract Poss morpheme on *könyv* ('book').¹¹⁶

Having established the dual pattern of Det + Possessor and Possessor + Det in Hungarian, let us consider some licit strings. In English and Hungarian we can generate Comp + IP for clauses (as in *I know* $_{CP} [C [that]_{IP} [he]_{I^{+TNS, +AGR}}]_{VP} [t work-s / work-ed]]]]]$), and in Hungarian we can generate Det + IP for nominals (as in $_{DP} [D [a]_{IP} [te]_{I^{+Poss, +AGR}}]_{NP} [t vendég-e-d]]]]]]$).¹¹⁷ If we accept that Comp and I are discrete categories because

¹¹⁵It must be noted here that although the *-e* morpheme in *vendég-e-d* may appear to be an epenthetic vowel as it apparently is in *te-nek-ed*, I am discounting this possibility due to Szabolcsi's own careful analyses of her data and to such examples as :

ki-nek, alsz-ik a t_i vendég-e-Ø-Ø?
 who-Dat sleep-3sg the guest-Poss-3sg-Nom
 'whose guest sleeps?'

If *-e* were epenthetic (i.e., to break up a consonant cluster), we would expect a final consonant in the string *vendég-e-Ø-Ø*. (Cf. Szabolcsi 1983:89-92 for data).

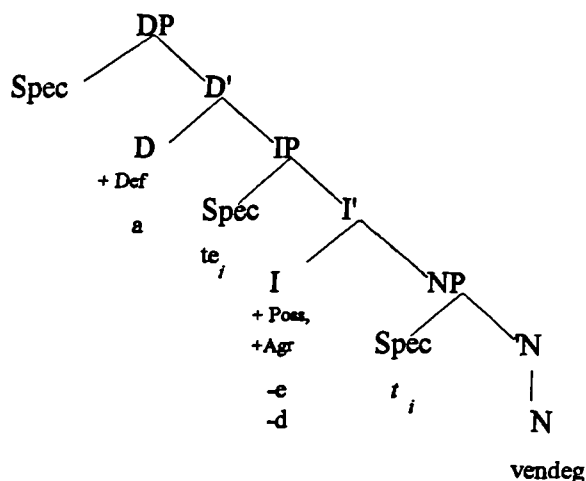
¹¹⁶Szabolcsi (1987:171) states that Hungarian noun phrases can have an overt subject if and only if the possessed noun bears person-number agreement with the Possessor subject. As *-je* is a 3sg agreement morpheme, I take it that the Poss morpheme in (174) is abstract, as it is overt in the examples in (173).

Finally, recall from section 1.1.1.1. (i) that it is conventional, in English, to postulate an abstract tense morpheme in examples such as *he walk-s-Ø*, and an abstract agreement morpheme in *he walk-Ø-ed*. (Cf. fn. 38 on Agr preceding T).

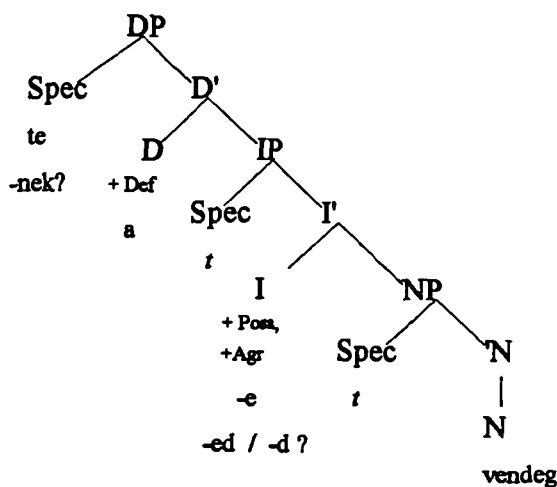
of the existence of both a complementiser and overt Agr in clauses, then by extension we must postulate that Det and I are discrete categories because of the existence of both a determiner and overt Agr in nominals.

However, in the *Agr-I* analysis of figure (172), Szabolcsi assumes that I houses the features \pm Poss and \pm Agr in nominals. Such a position is problematic on several levels. For example, the Hungarian nominals we've seen in example (173) show overt morphemes for Det and Poss and Agr and Case. These nominals are repeated in (175):

- (175) (a) $DP[e]$ $D[a]$ $IP[te-\emptyset]$ $I[I^{+Poss, +Agr}]$ $NP[t \text{ vendég-e-d}]$]]]]
 the thou-Nom guest-Poss-2sg
 'thy guest'



- (b) $te\text{-nek-ed}$ $DP[a]$ $IP[t]$ $I[I^{+Poss, +Agr}]$ $NP[t \text{ vendég-e-d}]$]]]]
 thou-Dat-2sg the guest-Poss-2sg
 'thy guest'



¹¹⁷In these examples, the Poss and Agr morphemes of I are *alternatively realised* on the head V and head N, respectively (cf. fn. 11).

In (175 (a)), two overt morphemes for Poss and Agr are competing for PF-insertion under the single category of I. In (175 (b)), not only are Poss and Agr competing for PF-insertion under the same category of I, there are two morphemes to realise Agr of I (*-ed* and *-d*). In addition, in (175) (b) the Case morpheme (*-nek*) needs a site in which to be inserted at PF. Therefore, although all of these morphemes are *ancillary* (i.e., non- θ -associated; cf. section 1.3), they are unlicensed within X-bar theory. They are unlicensed because PF-insertion of multiple overt morphemes in a single node I violates a fundamental principle of X-bar theory. While we observed in section 3.3.1. that certain features on a category will influence the insertion of a particular morpheme, features may only contribute to the realisation of *one* grammatical morpheme. More than one morpheme with overt morphology in the same node suggests that more functional categories are needed to house these morphemes.¹¹⁸ This is a central notion of the split-Infl analysis for clauses. The functional categories carry the features which will license the insertion of certain morphemes at PF.

Due to Hungarian data where numerous features require overt realisation, we reject analyses where several features can be realised morphemically in a single node, such as the *Agr-D* analysis of Section 3.3.1. and the *Agr-I* analysis of Section 3.3.2. In Section 3.3.3. we will examine cross-linguistic nominals using an analysis where Det, Poss, separate Agr, and Case are PF-inserted in their own categories. For the moment, however, as English exhibits a distinctly impoverished morphology in nominals, we will utilise the simplified *Agr-I* analysis in order to make certain claims about the internal structure of DP. This entails accepting that there is an Infl category within DP (which we will later 'split' into AgrP and PossP and CaseP). In our future discussion then, we will notate with the single node I the separate categories of Agr and Poss and Case, whenever full articulation is not explicitly needed.

3.3.2.1. Evidence for an Infl node in DP (evidence that DP = CP)

Our Hungarian data show us that Det and Infl can co-exist in the nominal phrase. Where there is an overt determiner housed in D, another node must exist to house the [\pm Poss] and [\pm Agr] (and [\pm Case]) features in nominals. This is naturally the abstract category I, which realises Agr and assigns Case in clauses. And if IP is a constituent of DP, then DP must be the nominal analogue of clausal CP. I present below three empirical arguments in defense of this claim.

¹¹⁸I am speaking of *insertion* processes here, not adjunction or 'raising' or Alternative Realisation processes, which would derive two morphemes in a single node.

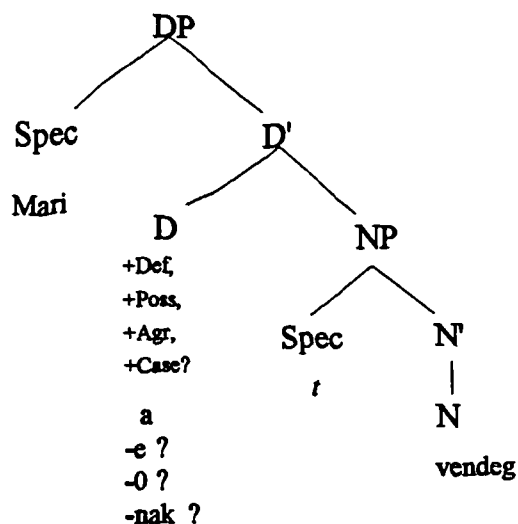
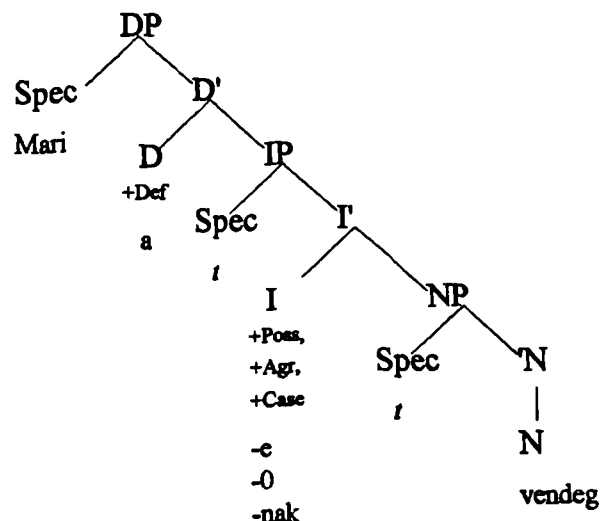
(a) *X-bar theorem*

We noted in section 3.3.2. that a fundamental property of X-bar theory is that each morpheme has its own category. We have seen that where $DP = IP$, as Abney suggests, and where $D = [+Def]$ or $[+Poss]$, Hungarian nominals such as the following with an overt determiner and overt Poss in D will violate this principle (cf. Szabolcsi 1983:91):

- (176) *where $DP=IP$ [*Mari-nak_i* D [*a* *e* \emptyset NP [*t_i* *vendég-e- \emptyset*]]]]¹¹⁹
 Mary-Dat the Poss Agr guest-Poss-3sg
 'Mary's guest'

In this example, Agr is abstract but may just as well be overt (cf. *vendég-e-d*: guest-Poss-2sg), in which case there would be three overt morphemes instead of the two shown in the D node. And again there is no node in which to house the dative Case affix *-nak*. We must therefore conclude that $D \neq I$ and that this analysis is untenable. On the other hand, an analysis where abstract I houses all of these morphemes will easily accommodate this construction (assuming that I is merely a collective site for the moment).¹²⁰

The two contrastive positions for DP-without-Infl and DP-with-Infl are represented in figures (177) and (178) below.

(177) where $DP = IP$ (178) where $DP = CP$ 

¹¹⁹Note that (176) couldn't be generated where DP is equivalent to IP . The example as it stands is grammatical.

¹²⁰Abney (1987:85) does acknowledge that an analysis where **D** can house either a lexical determiner or a possessive morpheme is problematic for languages like Hungarian (cf. fn. 84).

In nominal constructions, on the other hand, an escape hatch is required in order to avoid a violation of the *Case Filter*. We have seen in section 3.3.2. that Hungarian nominals may exhibit the pattern Det + Possessor or Possessor + Det. Szabolcsi (1983:91-2) notes that, in Hungarian nominals, *wh*-operators acting as Possessors precede the determiner and occur only in the *dative* Case:

(181) (a) ki-nek a vendég-e-Ø
 who-Dat the guest-Poss-3sg
 'whose guest'

(b) *a ki-Ø vendég-e-Ø
 the who-Nom guest-Poss-3sg
 'whose guest'

Non *wh*-Possessors in Hungarian may be in either dative or nominative Case, depending on their structural position. If they precede the determiner they take dative Case, and if they follow the determiner they take nominative Case:

(182) (a) Mari-nak a vendég-e-Ø
 Mary-Dat the guest-Poss-3sg
 'Mary's guest'

(b) a Mari-Ø vendég-e-Ø
 the Mary-Nom guest-Poss-3sg
 'Mary's guest'

Hence dative Possessors precede Det and nominative Possessors follow Det in Hungarian. From the data in (181) and (182), we posit either: (i) that Infl of DP can assign dative as well as nominative Case leftwards: $DP[D[D \ IP[DP_i \ \Gamma[I^{+Nom/+Dat} \ NP[t_i \ N[N]]]]]]]$; or (ii) that D of DP can assign dative Case: $DP[D[D^{+Dat} \ IP[DP_i \ \Gamma[I^{+Nom} \ NP[t_i \ N[N]]]]]]$. Both options are stipulative, as we shall see below.

Now, applying the Case-marking of dative and nominative Possessors to the Case Filter, if a *wh*-Possessor and a determiner can both occur in the initial position of DP in Hungarian, there must be an escape hatch exterior to IP of DP, as in (183) (a) below.

(183) (a) $DP=CP[ki-nek_i \ D[a \ IP[t_i \ \Gamma[I^{+Poss, +Agr, +Case} \ NP[t_i \ vendég-e-\emptyset]]]]]]$
 who-Dat the guest-Poss-3sg
 'whose guest'

Case to Possessors that raise again to [Spec,DP] (perhaps under some 'attraction' of D⁰). Hence it is suspect.

Another option, suggested by Kayne (1993:4-5), is that the Possessor subject is somehow dative Case-marked in the [Spec,DP] position in the presence of a *definite* D⁰, after the Possessor raises to this position. This suggests that D is involved in the Case-marking. Infl of DP, Kayne claims, is not sufficient on its own to license (via *dative* Case-marking) a Possessor subject in its Spec (i.e., in [Spec,IP]). But in the [Spec,DP] position, the Possessor subject 'picks up' dative Case, presumably by proximity to a definite D⁰, which licenses the Possessor to be dative. Since Szabolcsi draws a parallel between D⁰ and C⁰, Kayne reasons that D⁰ can be compared to C⁰ of Germanic V2 languages, where C⁰ plays a role in licensing Case on the subject DP in clauses. However, this option also is stipulative. Recall our earlier observation (cf. fn. 65) that it is *Agr* of I or D that is the actual Case-assigner. In our 'Infl in DP' analysis, *Agr* of I replaces *Agr* of D as the Case-marker. Thus *Agr* of I is ultimately the Case-marker in nominals, be it nominative or dative Case.¹²² To suggest that the Possessor DP is licensed for dative Case in the [Spec,DP] position is to imply that somehow D is a Case-marker. But as *Agr* of I is the Case-marker, we would predict that D of DP has only a \pm Def feature, not a \pm *Agr* feature. Thus an implication that both I and D can Case-mark (via *Agr*) is redundant and uneconomical. It is also suspect, in light of our observation at the beginning of this section (*X'-bar theorem*) that overt *Agr* and Det morphemes require their own categories. We have seen that Hungarian nominals can have an overt *Agr* and an overt Det morpheme at the same time (cf. *te-nek-ed a vendég-e-d*, thou-Dat-2sg the guest-Poss-2sg ('thy guest')); therefore, proposing D as a Case-licenser entails an *Agr* of D, a position which now seems untenable in view of the data. And, as Kayne himself adopts Szabolcsi's analysis of Infl in DP, it is unclear how D of DP can manage to license dative Case in nominals whilst I of IP assigns nominative Case in the same nominal. Kayne mentions only that a Possessor subject picks up dative Case after moving to the [Spec,DP] position, and that a definite D⁰ licenses a Possessor DP. But the Possessor DP must get Case from some Case-assigning *Agr* in the first place.

Since neither of the two options presented above is fully satisfactory, we postpone for the moment the question of how dative Possessors (*wh*-Possessors and non-*wh* Possessors) get Case in Hungarian nominals and in German nominals: cf. *dem Peter seine Schuhe* (the Peter-Dat his shoes; 'Peter's shoes'). In section 4.1.2. I present my own proposal for nominative and dative Case-marking of Possessor DPs in Hungarian. What we can conclude, from the data presented in (181) - (183), is that *ki-nek* moves to an initial A' position in DP, that D \neq I, that D = C, and that therefore [Spec,DP] = [Spec,CP].

¹²²Although I will suggest in section 4.1. that K of I replaces *Agr* of I as the Case-assigner.

(c) ECP

Where DP = CP, we can expect to see parallel syntactic processes within each phrasal counterpart. *Wh*-extraction is one such process. In CPs in English, *Wh*-elements can not be extracted from complement clauses where there is a violation of the ECP. This is commonly referred to as the *that*-trace effect, whereby an intervening complementiser obstructs government of the trace of a *wh*-word:

(184) **Who_i* do you believe $_{CP[t_i]} C[that] IP[t_i] I I VP[t_i left]$]]]]?

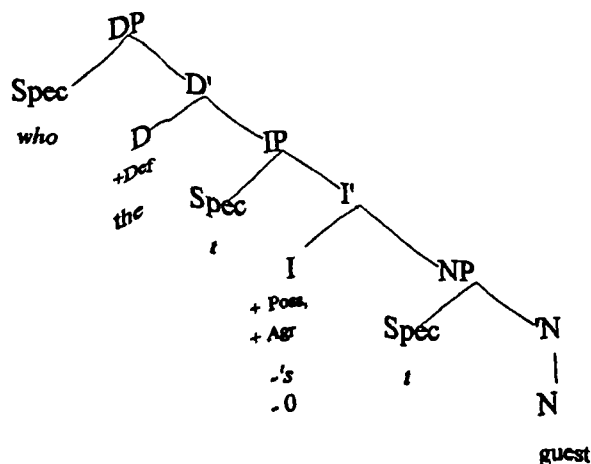
In this example, extraction of the *wh*-subject *who* from IP is illicit, because its intermediate trace can not be properly governed due to the presence of the complementiser *that*. *Who* can not antecedent-govern its intermediate trace because of intervening elements, and Infl (I) is not a proper governor (i.e., it can neither θ -govern nor antecedent-govern). External θ -government of the intermediate trace by the lexical item *believe* is blocked by *that*. Consider now the extraction of a *wh*-object from a complement clause:

(185) *Which girl_j* do you think $_{CP[t_j]} C[that] IP[he_i] I I VP[t_j picked t_j]$]]]]?

In this example there is no violation of the ECP because the lexical item *pick* can θ -govern the trace of *which girl*.

In similar fashion, Szabolcsi (1983:90) notes that *wh*-elements can not be extracted from complement nominals in Hungarian where there is a violation of the ECP. Using her observation, we will postulate a universal constraint for nominals using English data. In DPs in English, *wh*-subjects can not be extracted from complement nominals due to a *Det*-trace effect, whereby an intervening determiner obstructs government of the trace of a *wh*-word.

(186) *Richard knows $_{DP[who(se)]} D[the] IP[t] I I' [s] NP[t guest]$]]]])?



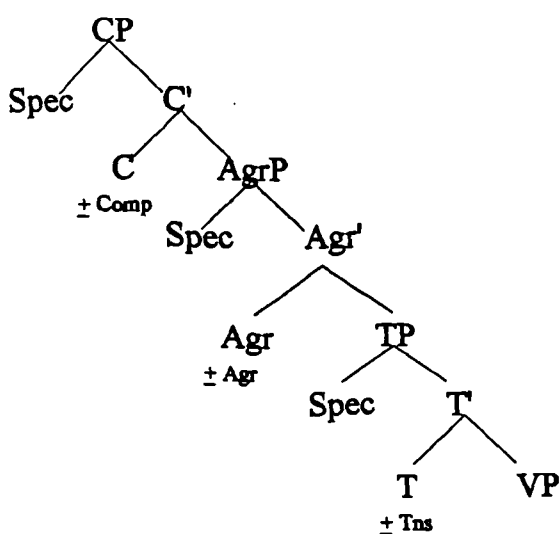
Szabolcsi (1983:92) claims that coindexing of *ki-nek* with its trace in subject position assures that the trace is properly governed. Yet this is stipulative as well as incompatible with the notion of proper government. We can employ the notion of *Spec-Head agreement* (cf. Chomsky 1986b:24 and fn. 103) in order to rehabilitate (188), but this also is stipulative. Spec-Head agreement is a relation whereby the ϕ -features of a head X are 'shared' with its specifier, as in when a lexical head governs and agrees with its subject in person, number, gender, Case, etc. (cf. *he smiles* vs. **he smile*).¹²⁵ In (188) *ki-nek* agrees with the relevant features in I, so in effect the relationship of *ki-nek* and its trace in [Spec,IP] is legitimised via Spec-Head agreement despite the presence of *a* in D. I leave the reader to ponder the legitimacy of (188) in view of the ECP.

Despite the difficulty with (188), the empirical evidence presented in this section lends support to the claim that DP is the nominal analogue of CP. This position is adopted throughout this thesis.

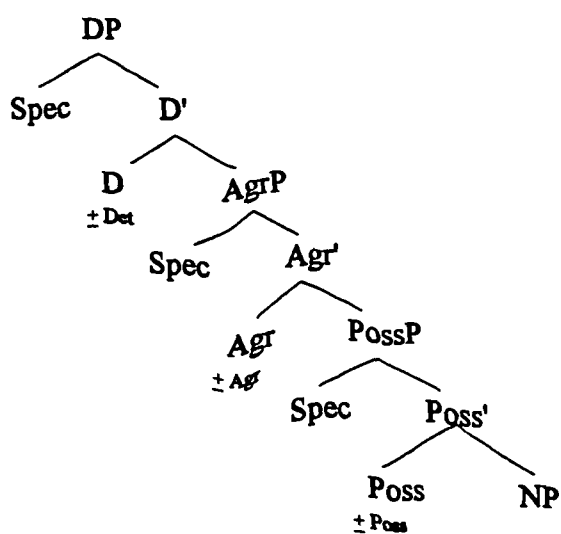
3.3.3. Agr as an independent category within DP (an incipient *split-Infl* of DP analysis)

Under a split-Infl (of CP) analysis, Agr and Tense head their own categorial projections in the clause. Under a *split-Infl of DP* analysis, Agr and Poss head their own categorial projections in the nominal. Figures (189) and (190) illustrate the correspondence of IP and DP under the split-Infl of CP and (provisional) split-Infl of DP hypotheses.

(189) split-Infl of CP analysis



(190) *split-Infl of DP* analysis (incipient)



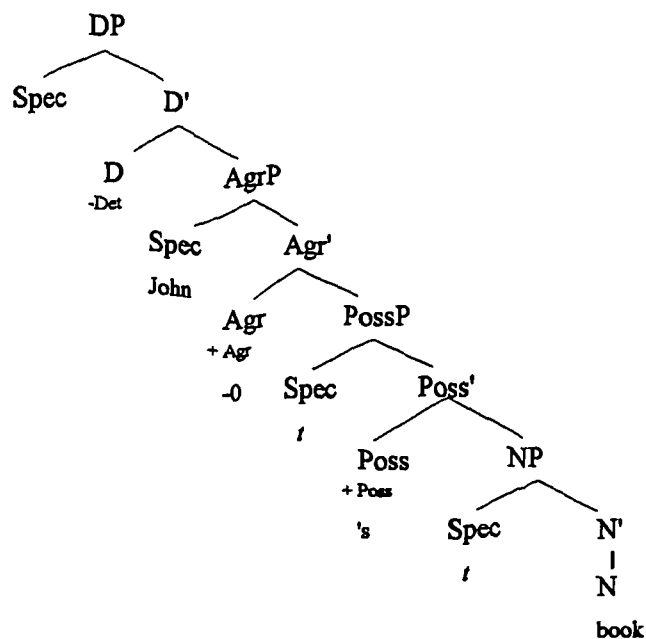
¹²⁵Chomsky 1981:330 suggests that there may be additional ϕ -features, such as $\pm wh$.

One possible asymmetry between clausal and nominal structure that immediately presents itself in (189) and (190) is the position of the Case-assigner in the two structures. In (189), Agr of AgrP is the (nominative) Case-assigner in the clause, as we observed in fn. 65. This is because of its [+Agr] feature. For Chomsky (1981:52, 162), the [+Agr] feature-complex is basically [+N] in character, with multiple properties of person, gender, number, and Case that it 'copies' to the subject nominal. In this way [+Agr] can be thought of as a kind of abstract N which governs and assigns Case to the subject. Presumably, Agr as an *F*-feature (i.e., a feature of a functional category) gets its properties from feature-sharing with the nearest lexical head. In (189) the nearest lexical head is V of VP. Let us suppose that a finite V will project its +properties of person, gender, number, and (subject) Case into a 'complex' [+Agr] feature on the category of Agr.¹²⁶ And that [+Agr] then 'assigns' these properties to the subject nominal in [Spec,AgrP], so that the features of [Agr,AgrP] and [Spec,AgrP] are 'matched'. This is the essence of *Spec-Head agreement* (cf. Chomsky 1986b:24; Ouhalla 1994a:184). We know that [+Agr] is a discrete element because of data like *he works*/**he work*, *he does work*/**he do work*; and and cross-linguistic data such as **e smokes cigars* and *e fuma sigari* tell us that [+Agr] in English requires an overt subject for its properties, whereas [+Agr] in Italian doesn't.

To return to our possible asymmetry concerning Agr and Case, if the feature [+Agr] is the Case-assigner in the clause, we run into difficulty with the DP-Analysis for the nominal. In section 3.1. we suggested that D of DP is the genitive Case-assigner in the nominal, when D carries the feature [+Agr]. But under our *split-Infl of DP* analysis of (190), [+Agr] is naturally housed under Agr, not D. The asymmetry arises because Abney proposes that the [+Agr] feature in English is realised as *Poss 's* under D. Yet we have seen that Hungarian exhibits overt Det and Poss and Agr. Therefore, I propose that the [+Agr] feature is abstract in English (as is clausal Agr except for 3sg) and is realised as *-0* under Agr, and provisionally hypothesise that a [+Poss] feature in Poss is realised by the *Poss 's* morpheme. This is shown in figure (191). *John* raises only to [Spec,AgrP] in (191), as there is no motivation for it to raise to the A'-position of [Spec,DP].

¹²⁶Functional Agr must be independent from V so that, in English, it may assign its ϕ -features of person, number, gender, and Case *leftwards* to DP arguments in the [Spec,AgrP] position. Lexical V may only assign such features *rightwards* to DP arguments (cf. section 2.1.).

(191)



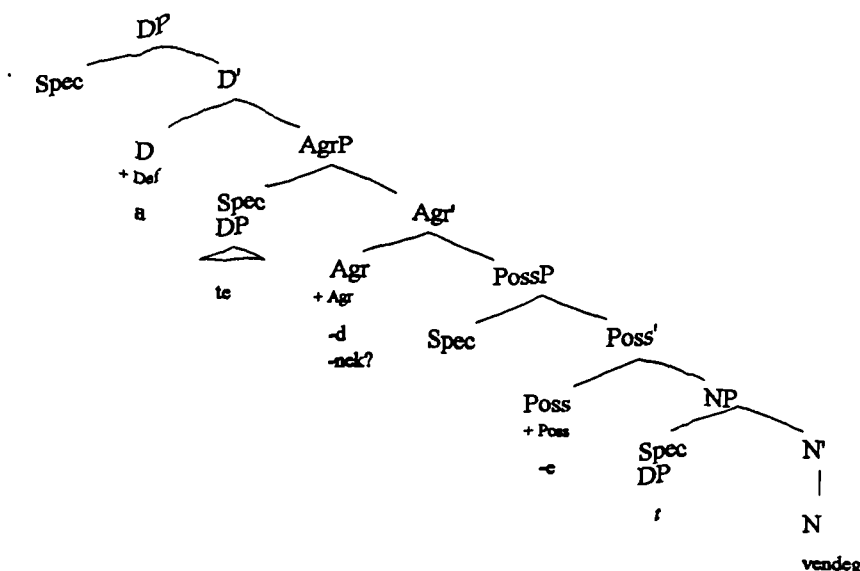
If (191) is an accurate representation, then which feature assigns Case in the nominal, [+Agr] or [+Poss]? The logical candidate is [+Agr], if we follow the parallelism with clausal Agr. But there are problems with [+Agr] as a Case-assigner, as we shall see in the next section.

3.3.3.1. Agr as *Person*

In section 4.3. we will argue that *gender* of Agr is a feature of the head N at base-level, and in section 4.4. we will argue that *number* of Agr is its own entity. In our discussion then, the remaining properties of Agr are *person* and *Case*. We could conflate these two properties into one Agr node and say that [+Agr] assigns Case leftwards and assigns person rightwards, as in *he wants the report* (*he-Nom want-3p*).¹²⁷ But this is incompatible with our *categories vs. features* analysis so far, where every overt morpheme requires an overt category. In our earlier Hungarian example of $_{DP}[te\text{-}nek\text{-}ed\text{-}D[a\text{-}NP[t\text{-}N[vendég\text{-}e\text{-}d]]]]$ (cf. (173) (b)), Poss and Agr are plainly evident on the head N *vendég* whilst Case and Agr are plainly evident on the Possessor subject *te*. Aside from the problem of two separate Agr affixes, a single category of Agr can not realise both [+Agr] and [+Case] on *te*. This is shown in figure (192):

¹²⁷In our discussion, '1p', '2p', and '3p' notate 1st person, 2nd person, and 3rd person, respectively. *Number* (as in singular vs. plural) is discussed separately in section 4.4.

- (192) *te-nek-ed* *a* *vendég-e-d*
 thou-Dat-2sg the guest-Poss-2sg
 'thy guest'



Te is base-generated in the [Spec,NP] position, for Possessor θ -marking by *vendég*. As a pronominal DP, *te* requires Case. In accordance with clausal raising, we could posit that *te* raises to the [Spec,AgrP] position for Case-marking. But the [+Agr] feature of Agr is realised by *-d*, an inflectional *person* morpheme that attaches to the head N *vendég*.¹²⁸ Therefore, the dative Case morpheme *-nek* can not be realised as Agr.

From (192) it is evident that Agr of DP can not simultaneously realise overt [+Agr] rightwards on *vendég* and overt [+Case] leftwards on *te*. We conclude that categorial Agr houses only the [+Person] feature (2*p* in this instance). By extension, we conclude that an Agr category can not house a [+Agr] feature-complex comprising multiple ϕ -features. This outlook is untenable in light of evidence from Hungarian. Therefore, we posit that a discrete category Case houses the [+Case] feature which assigns Case. We will call this category *Kase* after Fukui and Speas (1986:138), and its projection *KP*.¹²⁹ We will follow their use of the term *Kase* to mean both the Case assigned by lexical categories (e.g., accusative and oblique), and the Case assigned by functional categories (e.g., genitive and dative). *Kase* and *KP* is discussed in section 4.1. For the present we deduce that *te* does not raise to [Spec,AgrP] for dative Case.

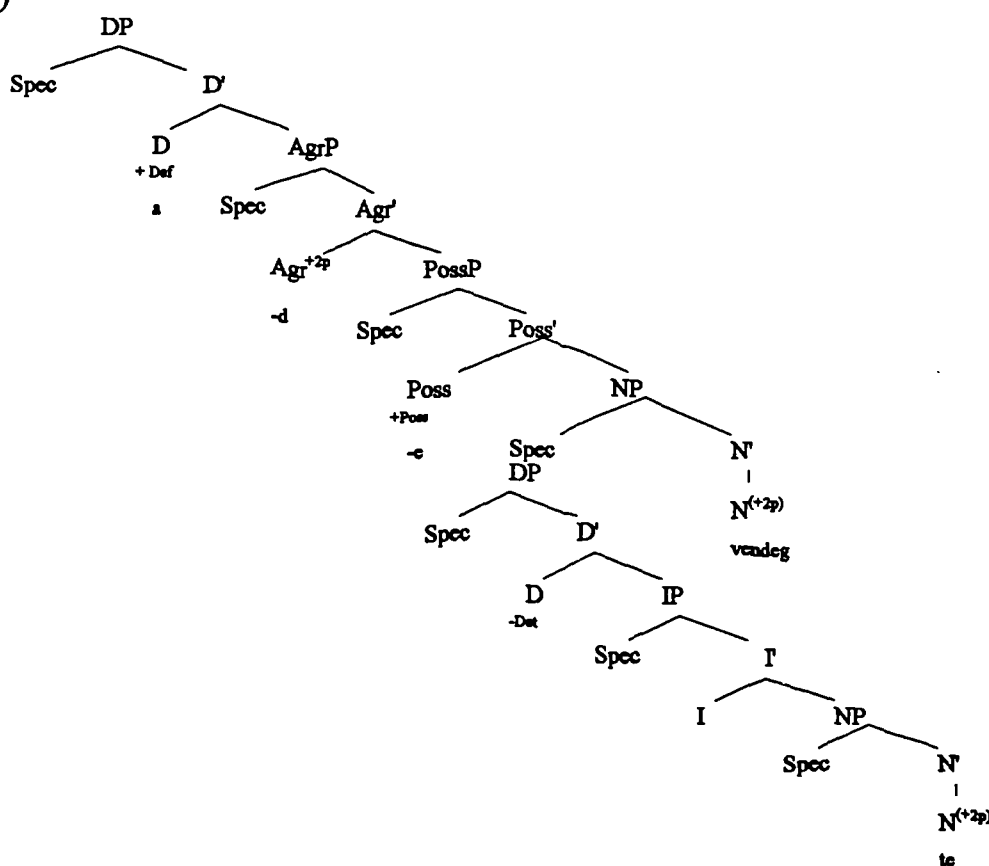
¹²⁸*Te* gets its own Agr *-ed* affix internal to its DP. This is discussed in section 3.3.3.4.

¹²⁹Cf. Valois (1991a:368-9 and 1991b:71-72, 78-83) for his similar *Case* category and *CaP*.

3.3.3.2. Agr and Spec

Leaving aside the question of Kase for the moment, let us consider how the head nominal *vendég* and its DP specifier *te* get Agr in *te-nek-ed a vendég-e-d*. At base level the Possessor subject *te* copies its [+Person] property (2nd) onto its lexical head N *vendég*. This accounts for overt Agr on both Ns; *Spec-Head agreement* mediates between the specifier *te* and its head N *vendég* (and vice-versa).¹³⁰ The [+Person] feature on *vendég* triggers in the matrix DP the functional category of Agr, as an insertion site for the 2nd person morpheme *-d* at PF (cf. sections 1.3. and 2.3.1. on the triggering of ancillary functional categories). Figure (193) shows the Spec-Head relation.¹³¹

(193)



However, we see from figure (193) that our analysis so far can only accommodate Agr (and Poss) on the head N *vendég*; there is no provision for Agr (and Poss) on the Possessor *te*. This is because, as we saw from figure (192), *te* is a DP, with its

¹³⁰At base-level, I assume that *Spec-Head agreement* operates either by a head assigning its ϕ -features to the subject specifier, or by a subject specifier assigning its ϕ -features to the head.

¹³¹In figure (193), our composite notation I of the lower DP represents AgrP and PossP (etc.) of this DP, as we do not need full articulation of this DP for this analysis.

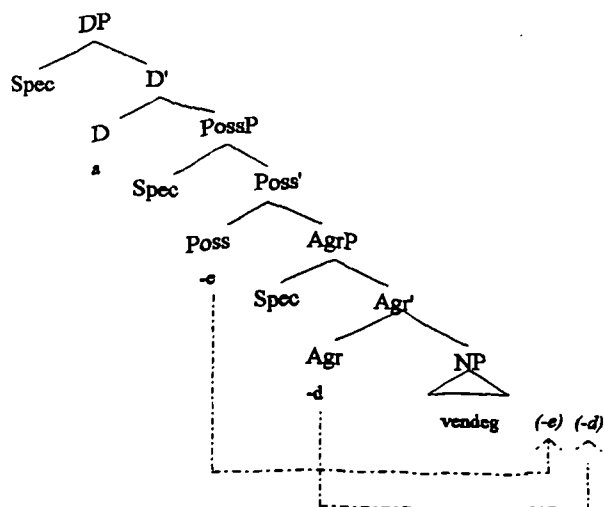
own functional categories; the inflectional morphology to realise these *F*-categories will occur internal to the DP projection of *te*. As the analysis of *te-nek-ed a vendég-e-d* is a fairly complex one, we will conduct it in successive stages. In the next section we examine the Alternative Realisation of the Agr and Poss morphemes on the head N *vendég*. The realisation of the Agr and Case morphemes on *te* will be discussed in section 4.1.2.

3.3.3.3. The *Agr-up or Agr-down* parameter

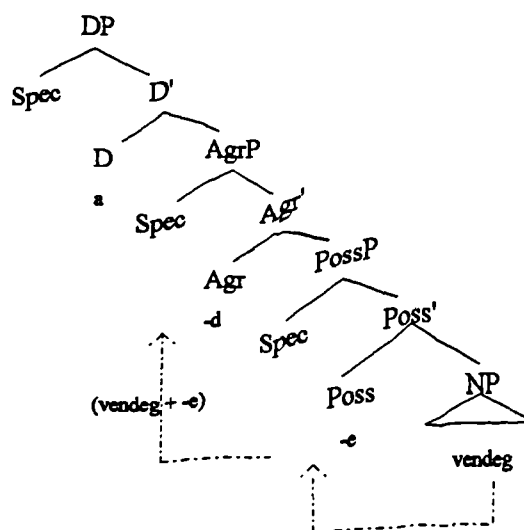
Vendég in (193) exhibits both Poss and Agr morphemes. In pondering the respective position of these nominal categories, it is useful to note that the position of clausal AgrP seems to be a parameter amongst languages. Whilst AgrP is commonly the highest functional category in Germanic and Romance clauses, Ouhalla (1990) provides evidence from Semitic clauses of cross-linguistic variation in this regard. In Arabic and Berber, TP must be higher than AgrP in order to derive the right order of morphemes at S-structure. Assuming that morpheme order at S-structure reflects the hierarchical arrangement of functional heads, we can deduce the parameter setting for any particular language. Let us call this parameter the *Agr-up or Agr-down* parameter. This parameter logically applies to the position of AgrP in nominals. In our discussion we will infer the position of AgrP in nominals from the data under examination.

In Hungarian AgrP must be higher than PossP in order to derive the morpheme order in *te-nek-ed a vendég-e-d*. Recall from Chapter 1 that we are adopting Emonds' *Alternative Realisation (AR)* of morphemes in this thesis, as opposed to a 'lowering' transformation whereby morphemes are 'lowered' onto lexical heads, or a 'raising' transformation whereby morphemes are raised to lexical heads via head-to-head movement. The type of transformation that one adopts will determine the morphemic sequence in an analysis. For example, a lowering analysis requires the sequence Poss + Agr for the correct derivation, whereas a raising or *AR* analysis requires the sequence Agr + Poss for the correct derivation. These three alternatives are presented in figures (194) (a) - (c). The Possessor subject *te* has been removed for the moment.

(194) (a) Lowering



(194) (b) Raising



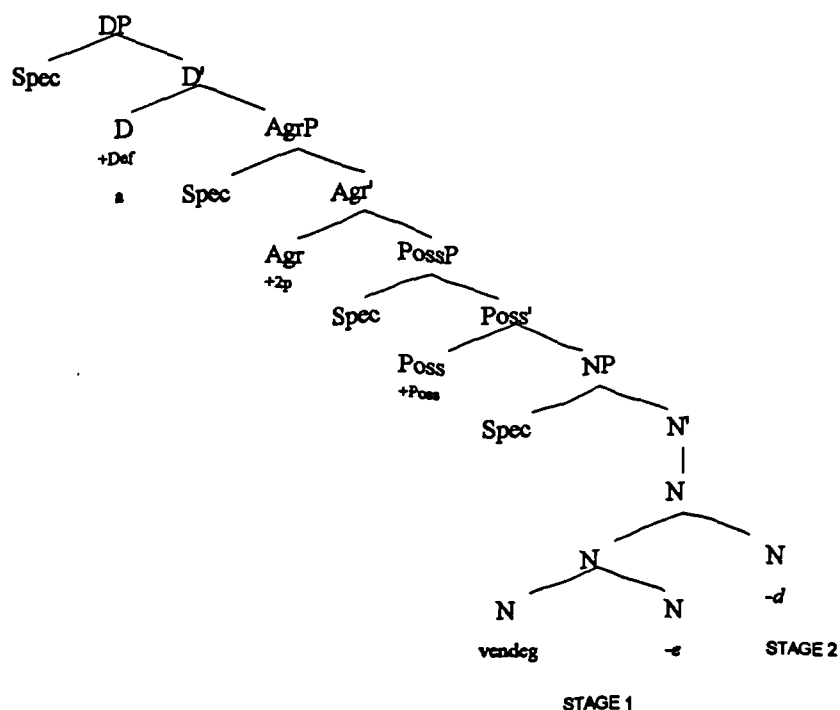
In a lowering analysis, PossP would have to be higher than AgrP, in order to derive the sequence *vendég-e-d* (N + Poss + Agr) at S-structure. The Poss morpheme *-e* lowers onto the head N *vendég* and the Agr morpheme *-d* subsequently follows. But this entails lowering the Poss *-e* morpheme 'over' the Agr *-d* morpheme, an undesirable step as it violates the Head Movement Constraint (cf. Travis 1984, Chomsky 1986b:71). The HMC states that a morpheme under a Y^0 category may move only to the position of an X^0 category that governs YP; i.e. that Y^m is restricted to raising to X^0 in the configuration $X^0 Y^mP$. This restriction is motivated by the ECP.¹³²

In a raising analysis, the ECP is satisfied but AgrP would have to be higher than PossP, in order that the head N *vendég* can raise to Poss to amalgamate with *-e* and still govern its trace. The complex unit *vendég + -e* then raises again to the Agr head to amalgamate with *-d* of Agr, antecedent-governing the trace in Poss. We can see from (194) (b) that raising operations must observe strict cyclicity in order to provide the proper government of traces (i.e., *move-a* is required in a lower cycle before it can apply to a higher cycle).

¹³²Since Chomsky's 'economy' principle (Chomsky 1988), lowering has been generally discredited in GB-theory as a more 'costly' operation than head-to-head raising. Lowering inevitably requires a corrective raising manoeuvre at LF to derive a licit string of morphemes at PF. It thus involves an additional instance of *move- α* . In (194) (a), for example, after lowering of the Poss *-e* morpheme, its trace can not be antecedent-governed, violating the ECP. *Vendég + -e* would therefore have to raise to Poss at LF, in order to remove the 'offending' trace in Poss. The same problem would occur with the lowering of the Agr *-d* morpheme. Cf. Ouhalla (1994:305-6) for offending traces in English and French.

Whilst lowering and raising of inflectional morphemes derive an S-structure prior to PF, Alternative Realisation occurs at PF. Recall from section 2.4 that in an *AR* analysis, a feature *f* of a host category *X* is realised as an inflectional morpheme *m* on the head of a phrasal sister at PF, obviating the need for movement processes: $[X^0, f]_{YP}[\dots Y^0 \dots] \rightarrow X^0_{YP}[\dots Y^0 + m \dots]$.

(194) (c) Alternative Realisation



In an Alternative Realisation analysis, AgrP is higher than PossP, as in raising. However, the derivation is slightly different. We observed in section 2.4. that in order for *AR* to proceed, *X* must *c-command* and govern *YP*, and that there must be a clear path between $[X, f]$ and the head Y^0 of the sister *YP*. That is to say, no overt element may intervene outside *YP* between the feature on X^0 and the sister Y^0 on which it will be realised as a grammatical morpheme (cf. Emonds 1985:227; 1986:272; 1987:615; 1994:168). Therefore, in (194) (c) Poss must be string-adjacent to its sister NP complement, in order to *c-command* this NP and alternatively realise its [+Poss] feature as an *-e* affix on the head N *vendég*. But what then, of the Alternative Realisation of the [+2p] feature in Agr in (194) (c)? Agr *c-commands* but does not govern NP. However, once the [+Poss] feature of Poss is discharged onto the N *vendég* as an affix (Stage 1), there is in fact a clear path between Agr and the head N of NP, as nothing intervenes between the 2p feature of Agr and N of NP. Therefore, I propose that a situation of *virtual minimality* exists between the category Agr and its

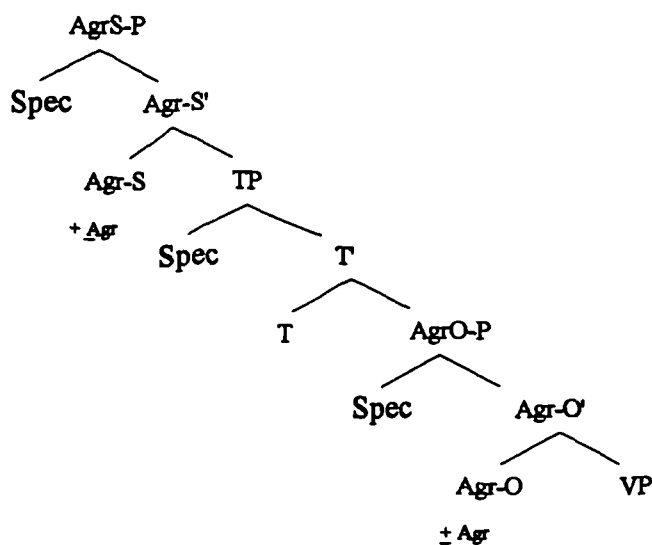
'constituting sister' NP.¹³³ Once Poss is emptied of its features, Agr virtually governs NP, and the [+2p] feature of Agr can then be alternatively realised on the composite *vendég* + *-e* as the affix *-d* (Stage 2). This successive realisation suggests that strict cyclicity is a requirement for Alternative Realisation at PF, as it is for raising to derive a particular string at S-structure.

3.3.3.4. Agr-S and Agr-O in the nominal

Having considered the process by which inflectional morphemes attach to the head N in nominals, let us now look at the realisation of separate Agr morphemes on both the head N and a Possessor N in a single DP.

In recent years there have been many analyses utilising the concept of an 'Agr-S' and an 'Agr-O' (cf. Chomsky 1988a:16, Chomsky and Lasnik 1991:34, 81) in the clause. Basically, this notion concerns the morphology apparent in many languages where both a subject nominal and an object nominal exhibit agreement with a verbal element. The two distinct agreements cannot be housed in the same Infl node, or in the same Agr node of a split-Infl analysis. Chomsky proposes that there are two distinct Agr elements, one associated with the subject ('Agr-S') and one associated with the object ('Agr-O'). He suggests a structure along the lines of (195) to capture this distinction.

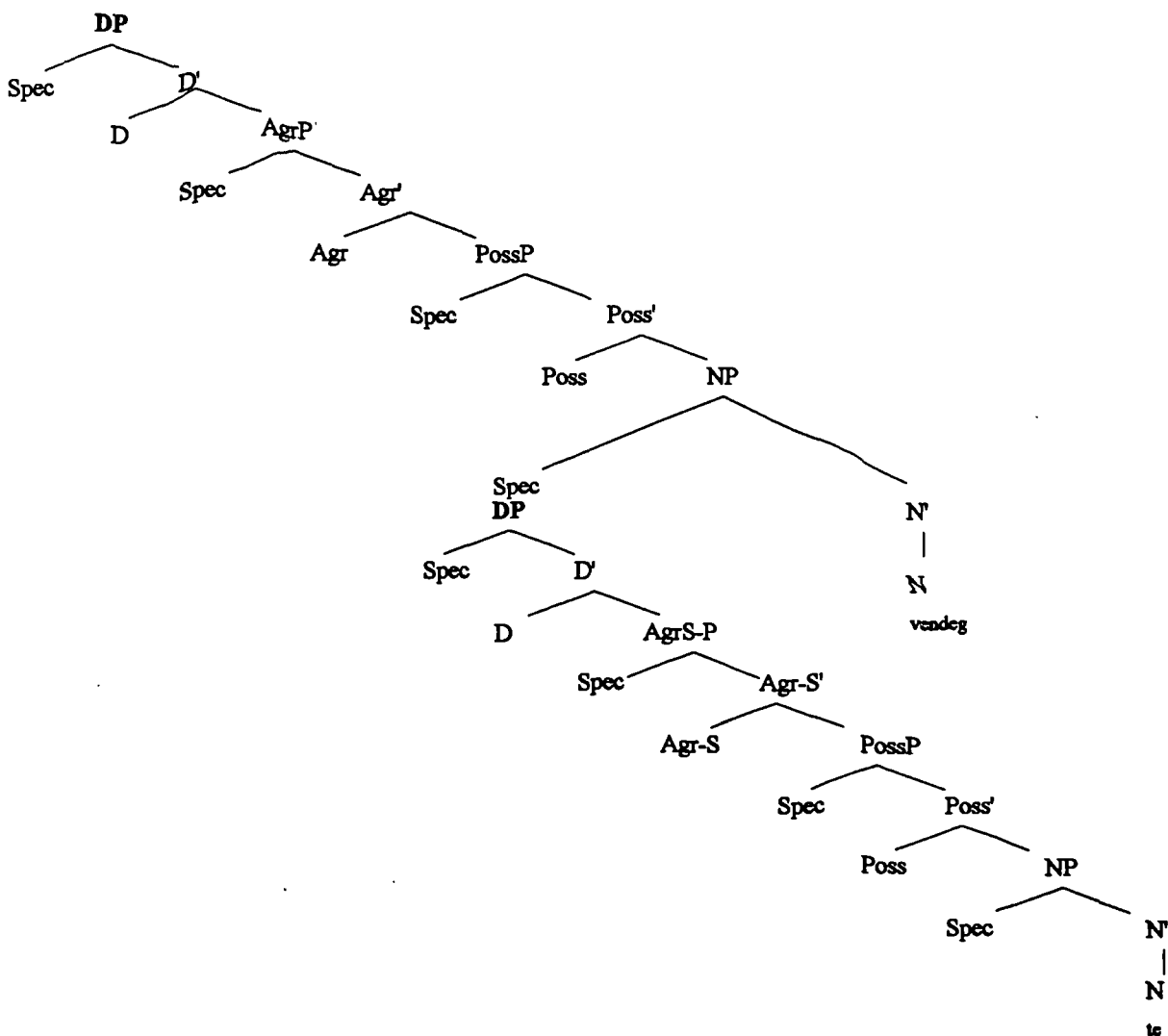
(195) Agr-S and Agr-O in the clause



¹³³ A 'constituting' phrasal sister is one whose head realises as a grammatical morpheme all of the features from a host category X, provided that no overt material blocks the AR of f of X onto Y⁰ of YP. In (194) (c), NP 'constitutes' a sister to Agr provided PossP is empty. Once this is the case, Agr can then discharge its [+2p] feature as a *-d* morpheme on the N unit *vendég* + *-e*. Agr of AgrP is then empty whilst N of its constituting sister NP realises its features. (Cf. Emonds 1994:161 on the notion of 'constitute').

However, in our analyses we have adopted the position that there is a split-Infl within the DP. This entails that *every* unique DP in a nominal construction will have its own Poss and Agr internally. In possessive nominals there are two Agr positions, one in the Possessor DP subject, and one in the overall DP itself. The Agr of the Possessor DP subject is the Agr of the N of this DP, whilst the Agr of the overall DP is the Agr of the head N of the overall nominal. We can thus retain the distinction of (195) by referring to the Agr of Possessor DP subjects as Agr-S, and to the Agr of the overall DP as simply Agr. Figure (196) shows the two DPs in $DP[te-nek-ed]_D[a_{NP}[t_{N'}[vendég-e-d]]]$, prior to *move- α* .

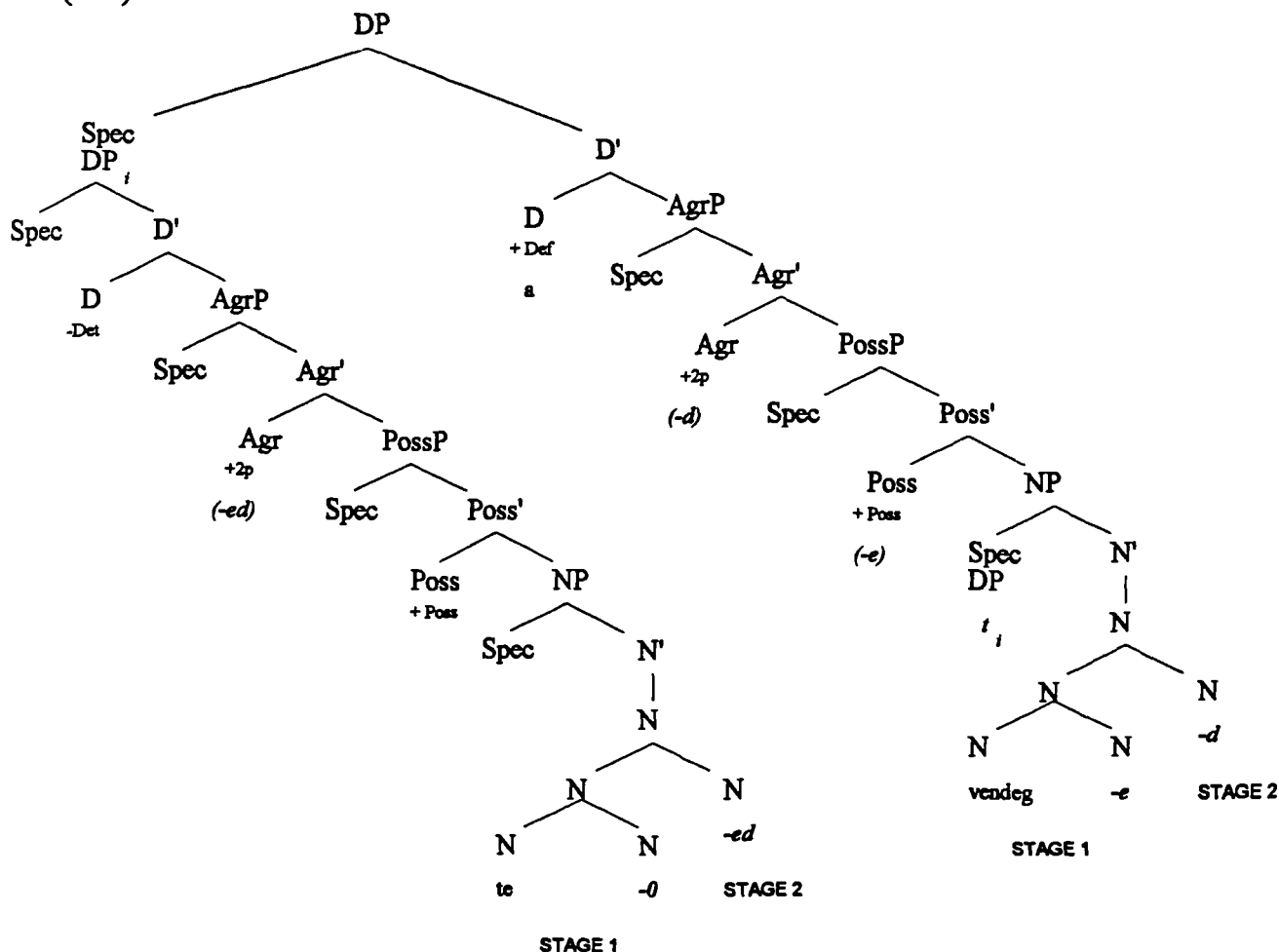
(196)



Spec of XP is, perhaps with few exceptions, a DP position. The Possessor subject *te* is a DP occupying the [Spec,NP] position. *Te* receives its Poss and Agr morphemes internal to this position. This happens via Alternative Realisation at PF, after *move- α*

of the DP *te* to the matrix [Spec,DP] position, and the Late Lexical Insertion of all functional morphemes. *Te* raises to the matrix [Spec,DP] position in order to occupy an A'-position preceding the determiner in Hungarian (cf. section 3.3.2.1.(b)); raising of *te* for Case-marking is reviewed in section 4.1. Figure (197) shows the PF derivation of *te-nek-ed a vendég-e-d*.

(197) PF



From the analyses presented in this section, the evidence suggests that a *split-Infl of DP* analysis (to be revised and fully articulated in the next chapter) uniformly addresses both Agr-S and Agr-O in the nominal.

In Chapter 4 we will examine independently each of the ϕ -features of Infl (i.e., *person*, *number*, *gender*, *case*, and possibly *poss*) and further elaborate DP. We begin with Case, in order to distinguish Case from Poss before continuing our discussion of the other ϕ -features.

Chapter 4: The ϕ -features of DP

4.1. Case in the DP

In Chapter 3 we accounted for Agr and Poss as distinctive categories in the nominal phrase. The empirical evidence from Hungarian in section 3.3.3.1. (Agr as *Person*) suggests that *Case* also must be a discrete node, in order to carry the [+Case] feature that will license the insertion of a Case morpheme. In this chapter we will assume that it is this [+Case] feature that assigns Case leftwards to subjects in the clause and in the nominal, and not [+Agr]. We have proposed that a *Kase* category carries the Case feature.¹³⁴ Therefore, [Spec,KP] is the standard Case-assigned position and not [Spec,AgrP].

Our revised representations of CP and DP are shown in figures (198) and (199). Notice that (199) is a departure from our tentative claim in section 3.3.3., where we hypothesised that *Poss 's* is housed under [Poss,PossP]. I propose that *Poss's* is PF-inserted under K of KP, where K carries a feature of [+Genitive], which will license the insertion of the 's morpheme.¹³⁵ K is the site of a Case morpheme which is realised to the left on a *Possessor* DP, whilst Poss is the site of a Possessed morpheme which is realised to the right on a *possessed* N in languages like Hungarian:

$$DP[e_D[D_{AgrP}[DP_i Agr[Agr PossP[t_i Poss[KP[t_i K[K NP[t_i N[N]]]]]]]]].$$

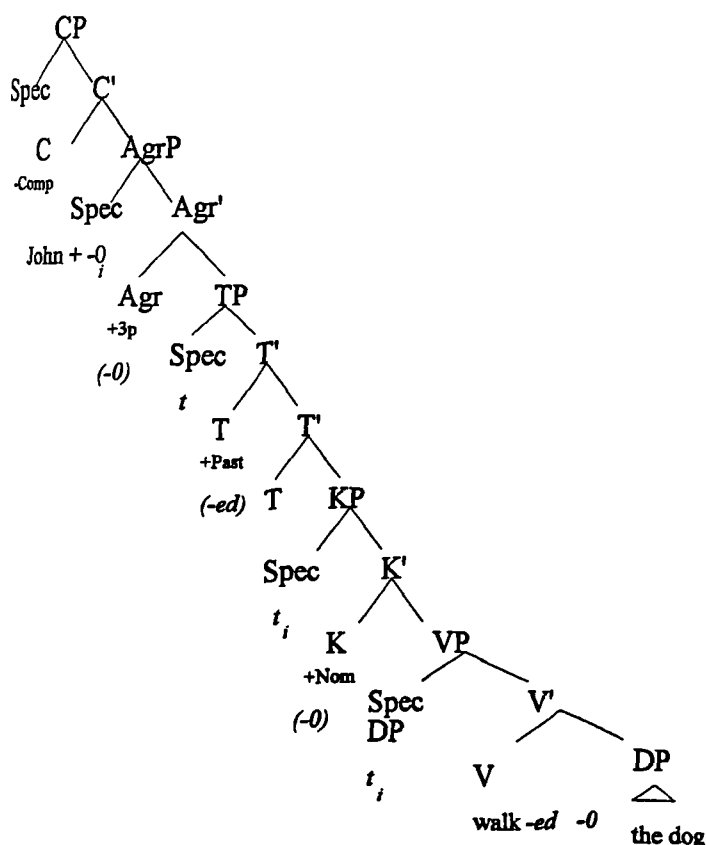
I will tentatively assume that KP immediately dominates VP or NP so that a subject DP may raise to [Spec,KP] and acquire a Case morpheme in the first instance (cf Valois 1991a: 72, 1991b:369 on the position of his Ca(se)P in French nominals). The subsequent raising of the subject DP to [Spec,AgrP] is discussed in conjunction with figures (198) and (199) below. For possessive nominals such as in (199), we will hypothesise for the moment that English realises a \emptyset morpheme in PossP. Alternatively, we could say that English does not project PossP. Either way, in order to accommodate complex DPs cross-linguistically, we will assume that all of the functional projections of DP are *available* as a UG potentiality

¹³⁴Recall that we are using the term *Kase* to mean both the Case assigned by lexical categories (e.g., accusative and oblique) and the Case assigned by functional categories (e.g., genitive and dative). (Cf. section 3.3.3.1.).

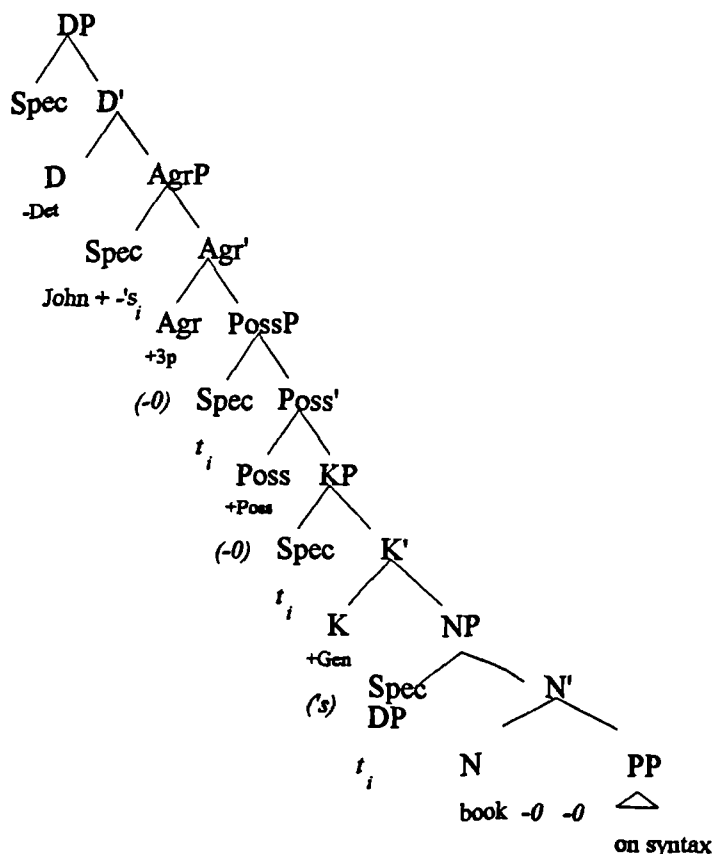
¹³⁵Ritter (1988, 1992) postulates an abstract [+Gen] feature D (D^{+Gen}), which assigns genitive Case to the *right* in Hebrew. I propose that [+Gen] occurs on K (K^{+Gen}) and, in English, assigns Case to the *left*. Essentially, this notion derives from Chomsky's (1981:52, 162, 188) conception that (i) an abstract [+Agr] element of Infl governs and assigns Case to subjects in clauses; and (ii) an abstract element [+Gen] governs and assigns Case to subjects in genitives (cf. fn. 65). [+Gen] is merely the isolation of the *Case* ϕ -feature of Agr; I have claimed throughout that these features require independent categories (with the exception of *gender*: cf. section 4.3.).

at the base-level. Figures (198) and (199) show some of the available *F*-projections in clausal and nominal configurations. Recall that in the Subject Specifier analysis adopted in this thesis, DP subjects are base-generated in the [Spec, NP] and [Spec, VP] positions for θ -marking, before raising for Case-marking.

(198) Kase in the clause



(199) Kase in the nominal



In (198) we see that in the clause, the DP *John* raises to [Spec, KP] in order to get nominative Case from the [+Nom] feature in K. A value of [+Nom] is present in K presumably due to the underlying structural position of *John* in [Spec, VP]. K and its projection KP are thus triggered as an insertion site for a Case morpheme at PF, and K^{+Nom} assigns Case leftwards to the DP projection of *John* at S-structure.¹³⁶ I am postulating that in this instance the Case morpheme is abstract, due to both the Case Filter and our expectations of UG (cf. fn. 116, 2nd para.). After raising to [Spec, KP] for Case-marking, *John* and its Case affix (-Ø) raises again to [Spec, AgrP], in order that

¹³⁶We observed in section 2.1. and fn. 124 that lexical categories assign Case rightwards whilst functional categories assign Case leftwards in English. Therefore, as lexical V can not assign Case to its subject *John*, KP is a necessary projection for nominative Case-assignment. Cf. fn. 80 on Case-marking as an S-structure phenomenon.

In (198) I assume a *KO-P* projection between V and DP, for Case-marking of the DO *the dog*. AgrO-P, whilst available, is not utilised in English. (Cf. section 3.3.3.4. on AgrO-P).

Tense and Agr may be successively alternatively realised on the head V *walk*. Tense is overt on *walk* whilst Agr is abstract. The DP *dog* gets structural accusative from KO-P, (cf. fn. 136) presumably from a [+Acc] Case feature on K (cf. fn. 126). The hierarchical arrangement of functional categories must be as in (198) so that structural Case may be affixed to the DP *John* immediately upon the raising of *John* to [Spec,KP]. After affixation of the Case morpheme ($-\emptyset$, in this case), *John* + $-\emptyset$ raises again in order to facilitate the Late Lexical Insertion and Alternative Realisation of the Tense and Agr morphemes on *walk*.¹³⁷ Thus in a KP-analysis, Case-marking of subject DPs must occur *prior to* and not *at* S-structure, in order to allow raising of the amalgamated unit *DP* + *Case affix*. In view of this, we will assume that *subject* Case-marks are functional category morphemes that are subject to 'early' Late Lexical Insertion (i.e., unlike other functional category morphemes which are inserted *post* all *move- α* (cf. fn.36), subject Case morphemes are inserted after the first movement of the DP subject to [Spec,KP]). *Object* Case-marks, presumably, are unaffected by this requirement, and so are late lexically inserted. Therefore, in our future discussion, the conventional expression 'Case at S-structure' should actually be interpreted as 'Case *before or at* S-structure'. We also note from figures (198) and (199) that Case-marking of a DP subject involves *leftwards* raising in the syntax, whilst inflection of head categories involves *rightwards* Alternative Realisation of syntactic features as morphemes at PF.

In (199) we see that in the nominal, the DP subject *John* raises to [Spec,KP] in order to get genitive Case from the [+Gen] feature in K (realised as *Poss 's*). On this occasion, K has a value of [+Gen] due to the underlying structural position of *John* in [Spec,NP]. As in the clause, KP is triggered as an insertion site for a Case morpheme at PF, and K^{+Gen} assigns Case leftwards to the DP projection of *John* at S-structure. Genitive Case on *John* is overt in this instance. *John* + 's raises again to [Spec,AgrP] in order that Poss and Agr may be alternatively realised on the head N *book*. Poss and Agr are both abstract on head Ns in English nominals but we have seen that they are not in Hungarian nominals. The entire DP $DP[DP[John]_{DP} [e]_{I'} [s]_{NP} [t]_{N'} [book]]]$ gets Case from an external Case-assigner, as in *I need* $DP[John's book]$. The N *book* takes a PP complement in the nominal in (199), as the V *walk* takes a DP complement in the verbal in (198). These analyses provide further support for the internal symmetry of CP and DP.

Before continuing, we must acknowledge a standing asymmetry both in our proposed 'KP-Analysis' and in Abney's 'DP-Analysis'. In figures (198) and (199) we have claimed that a Case morpheme ($-\emptyset$ or $-s$) incorporates into the subject DP *John* at a certain

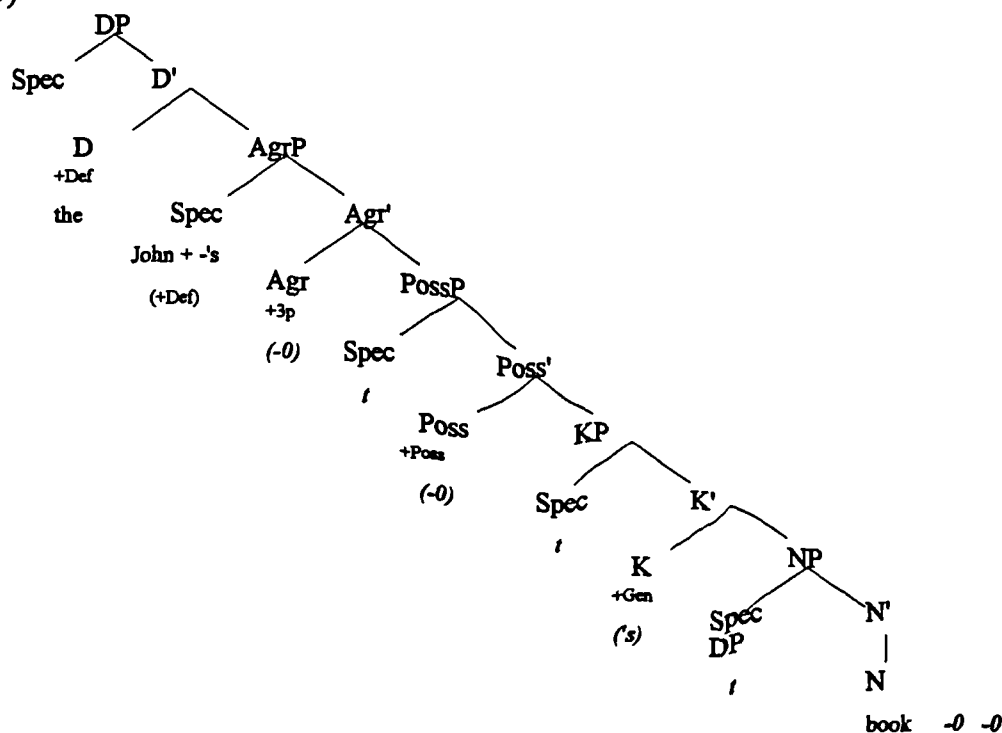
¹³⁷Note that this would also be true under the traditional 'lowering' of inflectional morphemes in standard GB-theory, cf. fns.10, 11, and 34.

point in the derivation (i.e., after *John* raises to [Spec,KP]). But this entails either that (i) the D² *John* raises to K⁰ and amalgamates with the Case morpheme at this site, or that (ii) the D² *John* raises to [Spec,KP] and somehow amalgamates with the Case morpheme in [K,KP] - clearly breaching the principles of incorporation as outlined in section 2.4.1.1. Option (ii) is, in fact, the case in the DP-Analysis: a subject DP in [Spec,DP] purportedly amalgamates with *Poss 's* of [D,DP]. We have already observed (cf. fn. 17) that, in the *Barriers'* sense of structure preservation, movement processes such as incorporation adjunction are restricted to constituents of the same categorial level which interact at a single categorial site. Therefore, the incorporation of an X⁰ Case morpheme into an X² DP such as *John* in figures (198) and (199) is a theoretical discrepancy. In section 4.1.2. we will return to this problem with the analysis of a Hungarian possessive nominal.

4.1.1. Revising Abney's Co-Occurrence Constraint (for +Det and +Poss)

We can now return to Abney's co-occurrence constraint of section 3.1., concerning determiners and *Poss 's* in English. We see from figure (200) that if a definite determiner is inserted in D (i. e., if D has a feature of [+Def]), this derives *the John's book*, an ungrammatical construction in English.

(200)



(200) is ungrammatical because, as Ritter (1988:927, fn. 4) observes, certain genitive phrases are inherently definite. That is to say, genitive proper names (e.g., *John's*) or

genitive referential pronouns (e.g., *his*) are inherently [+Def]. Applying this observation to our new KP category, we can postulate that in genitive phrases with proper names or referential pronouns, a [+Gen] of K is equivalent to a [+Def] of D. Therefore, [+Def] of overt determiners is redundant with [+Gen] of genitive phrases, ruling out constructions such as **the John's book*.¹³⁸ This is not the case in Hungarian, because in this language post-determiner Possessors are in the nominative and not in the genitive Case:

- (201) *a János-Ø könyv-Ø -je*
 the John-Nom book-Poss-3sg
 'the John book'

Thus in Hungarian there is no 'double Def' in analogous constructions: For pre-determiner Possessors in Hungarian, again there is no conflict, because the dative Case of the Possessor is not inherently definite:

- (202) *János-nak a könyv-Ø-je*
 'John-Dat the book-Poss-3sg
 '(to) John the book'

and the Case-marked Possessor raises with its Case affix to an A'-position preceding the determiner: $DP[János-nak \ D[a \ AgrP[t \ Agr[-je \ PossP[t \ Poss[-0 \ KP[t \ K[-(nak) \ NP[t \ N[könyv]]]]]]]]]$.¹³⁹

For pre-determiner Possessors in English, as with post-determiner Possessors, ungrammaticality is predictable. In order to derive *John's the book*, *John + 's* would have to raise to [Spec,DP]. But this would entail a double violation. Not only is the genitive 's affix on *John* redundant with the [+Def] feature on D (cf. fn. 138), *John + 's* would have no motivation to raise to [Spec,DP], as its [+Gen] feature precludes this option in English. Such movement would therefore be improper, as it breaches the principle of economy (cf. fn. 132). We therefore conclude that, due to genitive Case-marking of the Possessor in English, a derivation such as **John's the book* is ruled out on independent grounds.

¹³⁸*John* is a DP without a determiner. A DP such as *the boy* would possessivise into *the boy's*, and *the the boy's* is as redundantly definite as *the John's*. Hence a definite determiner is illicit in *the John's* because a [+Def] feature on D is redundant with the [+Def] nature of *John's*. By the same reasoning, an indefinite determiner is illicit (as in *a John's*) because a [-Def] feature on D conflicts with the [+Def] nature of *John's*. Common Ns such as *boy* or *farmer*, on the other hand, are not inherently definite when possessivised and so allow the cooccurrence of either a definite or indefinite determiner and Poss 's': cf. *the boy's book*, *a boy's book*, *the farmer's daughter*, *a farmer's daughter*.

¹³⁹Cf. sections 3.3.2. and 3.3.2.1.(b) on pre-determiner Possessors in Hungarian.

4.1.2. Case-marking of Possessor DPs in Hungarian

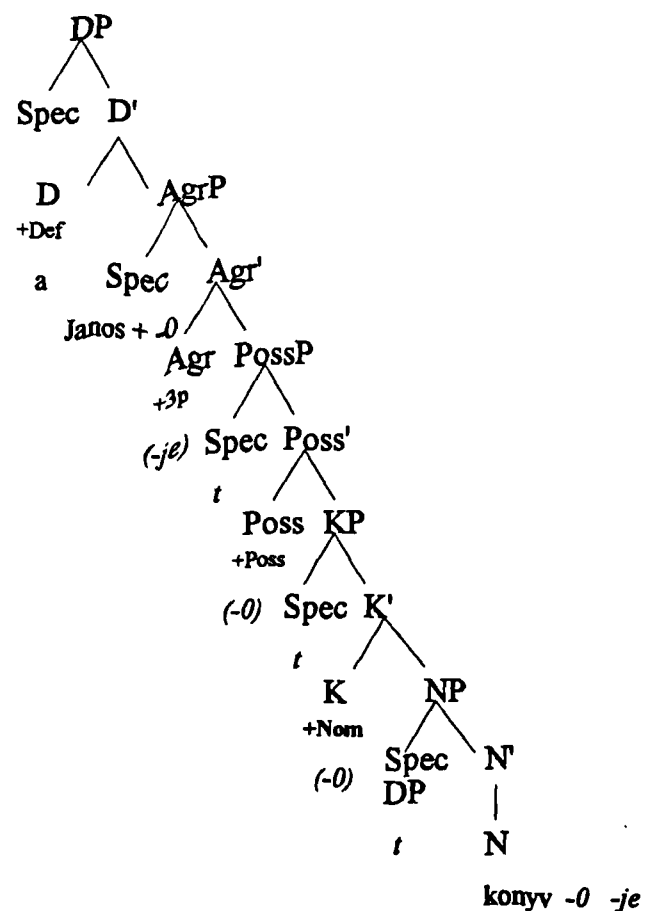
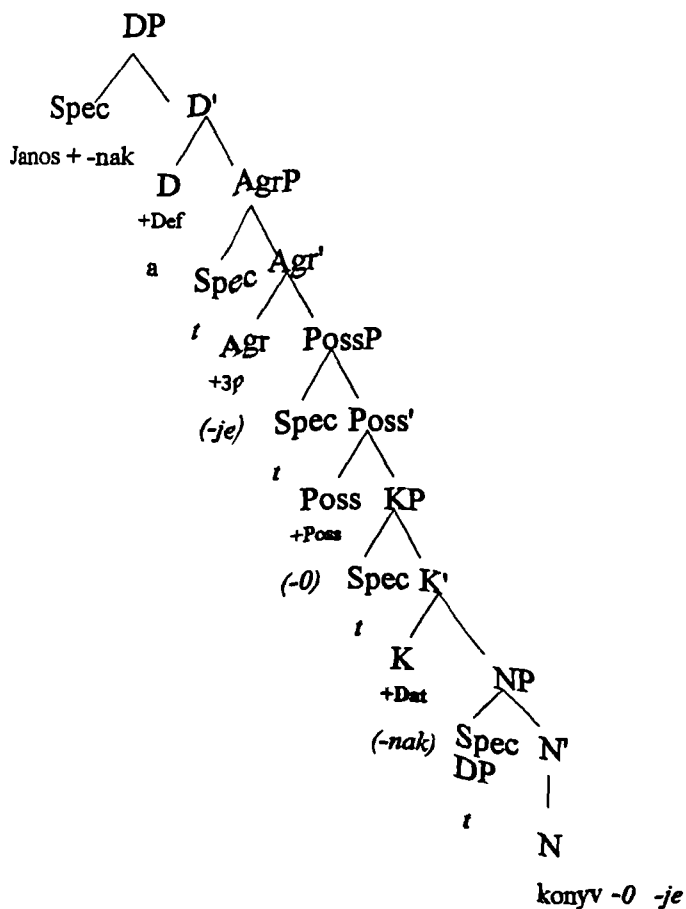
Let us now re-examine our Hungarian examples of (201) and (202). We have observed that non-genitive Case-marking of Possessors in Hungarian allows for both pre and post-determiner positions for the Possessor. We have suggested in figures (200) - (203) that the category of Kase may carry various Case features such as [\pm Nominative], [\pm Genitive], [\pm Dative], etc. In Hungarian Possessor subjects are marked with either a [+Nom] or [+Dat] Case-mark. Nominative Possessors raise only to A-positions whilst dative Possessors raise to A'-positions; both options are available in Hungarian because, according to the data, neither [+Nom] or [+Dat] on the Possessor subject is redundant with a [+Def] feature of an overt determiner. Figures (204) and (205) reiterate this graphically.

(204) Pre-determiner Possessor

János-nak a könyv-Ø-je
 John-Dat the book-Ø-3p
 'John's book'

(205) Post-determiner Possessor

a János-Ø könyv-Ø-je
 the John-Nom book-Ø-3p
 'John's book'



The A' position of [Spec,DP] obligatorily accommodates *wh*-Possessors but optionally accommodates non-*wh* Possessor subjects as well (e.g., *János*). Possessor subjects which stop in [Spec,AgrP] (the normal landing-site in order to facilitate *AR*) receive the 'default' [+Nom] Case-mark from K *en route*, whilst Possessor subjects which raise maximally to the peripheral [Spec,DP] position receive a [+Dative] Case-mark from K. Thus we assume, following Szabolcsi (1983:91), that different surface positions (i.e., pre or post-determiner) correspond to different Case-features (i.e., [+Nom] or [+Dat]) on K.

The Case-marking of Possessor DPs is independent from the Alternative Realisation of the Poss and Agr morphemes on the head N. In (204) and (205) the Agr morpheme is absent from the Possessor *János*, a characteristic of 3rd person possessive nominals in Hungarian (cf. *te-nek-ed a vendég-e-d*; thou-Dat-2p the guest-Poss-2p; 'thy guest'). Poss is normally dormant with Possessor Ns; this is discussed in section 4.1.2.1. To look more closely at Case-marking, we need to examine a 1st or 2nd person possessive nominal in Hungarian, where the Agr morpheme appears on the Possessor. In such instances a curious sequence surfaces, whereby the Case affix on the Possessor DP precedes the Agr affix, rather than the inverse. For ease of analysis we will use our familiar example of *te-nek-ed a vendég-e-d* (thou-Dat-2p the guest-Poss-2p; 'thy guest'). Recall from section 1.3. that Alternative Realisation occurs only after all *move- α* operations have taken place, and the subsequent Late Lexical Insertion of morphemes at PF. In figure (206) we see the D-structure of *te-nek-ed a vendég-e-d* before movement has occurred. At D-structure the presence of nominal *te* triggers functional K and KP of the *matrix* DP, for Case-marking of the DP projection of *te* at S-structure. Internal to the Possessor DP *te*, PossP and KP are present but 'dormant' (cf. section 2.3.1.). PossP of *te* is dormant because the Poss node is utilised only in the instance of a *possessed* N (*te* is a Possessor N whilst *vendég* is the possessed N). KP of *te* is dormant because there is no Possessor DP subject in the [Spec,NP] position of *te* that would itself require Case-marking. PossP and KP in Possessor DPs are discussed in more detail in sections 4.1.2.1. and 4.2.

(206) *Te* prior to raising for Case-marking

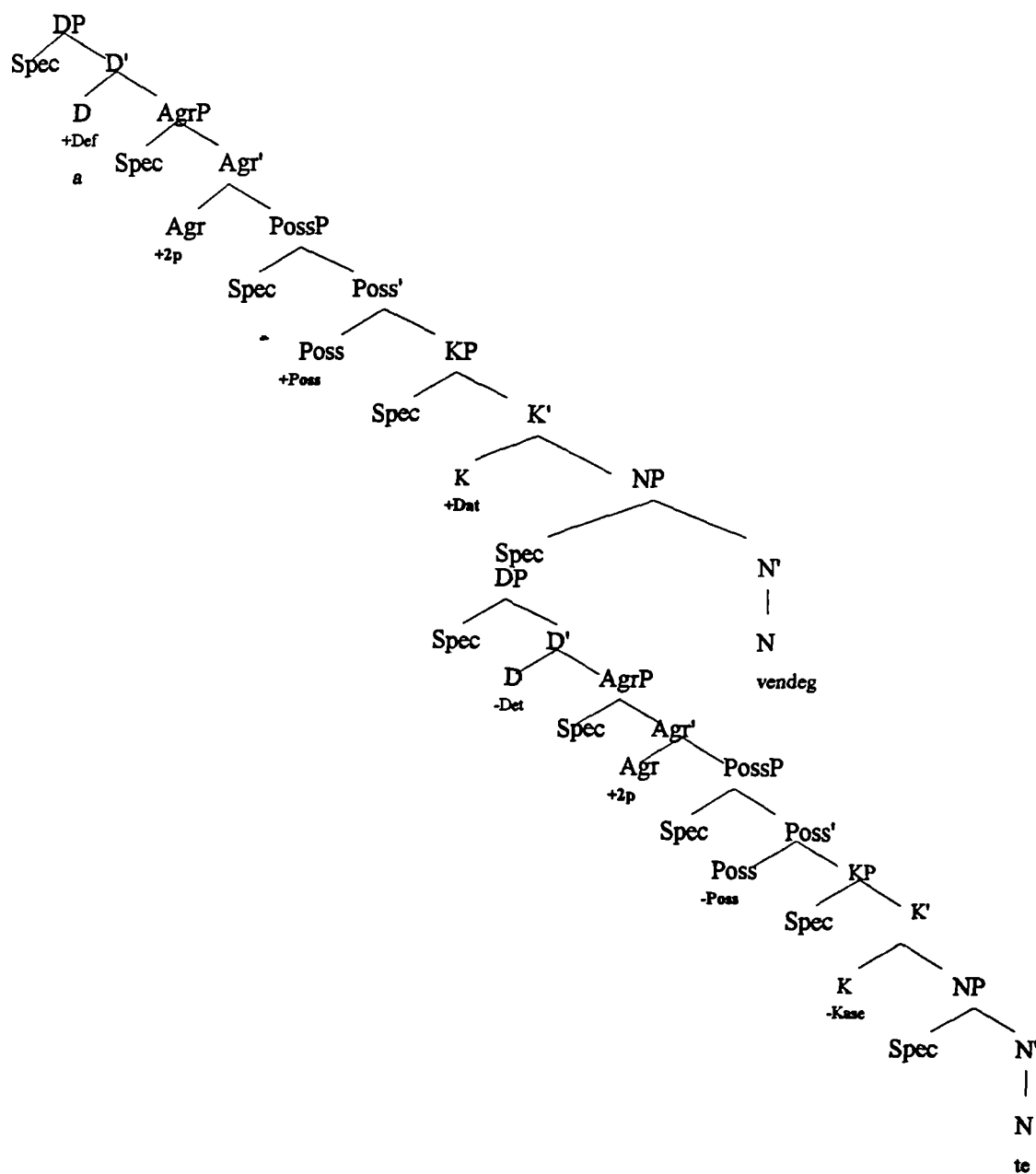
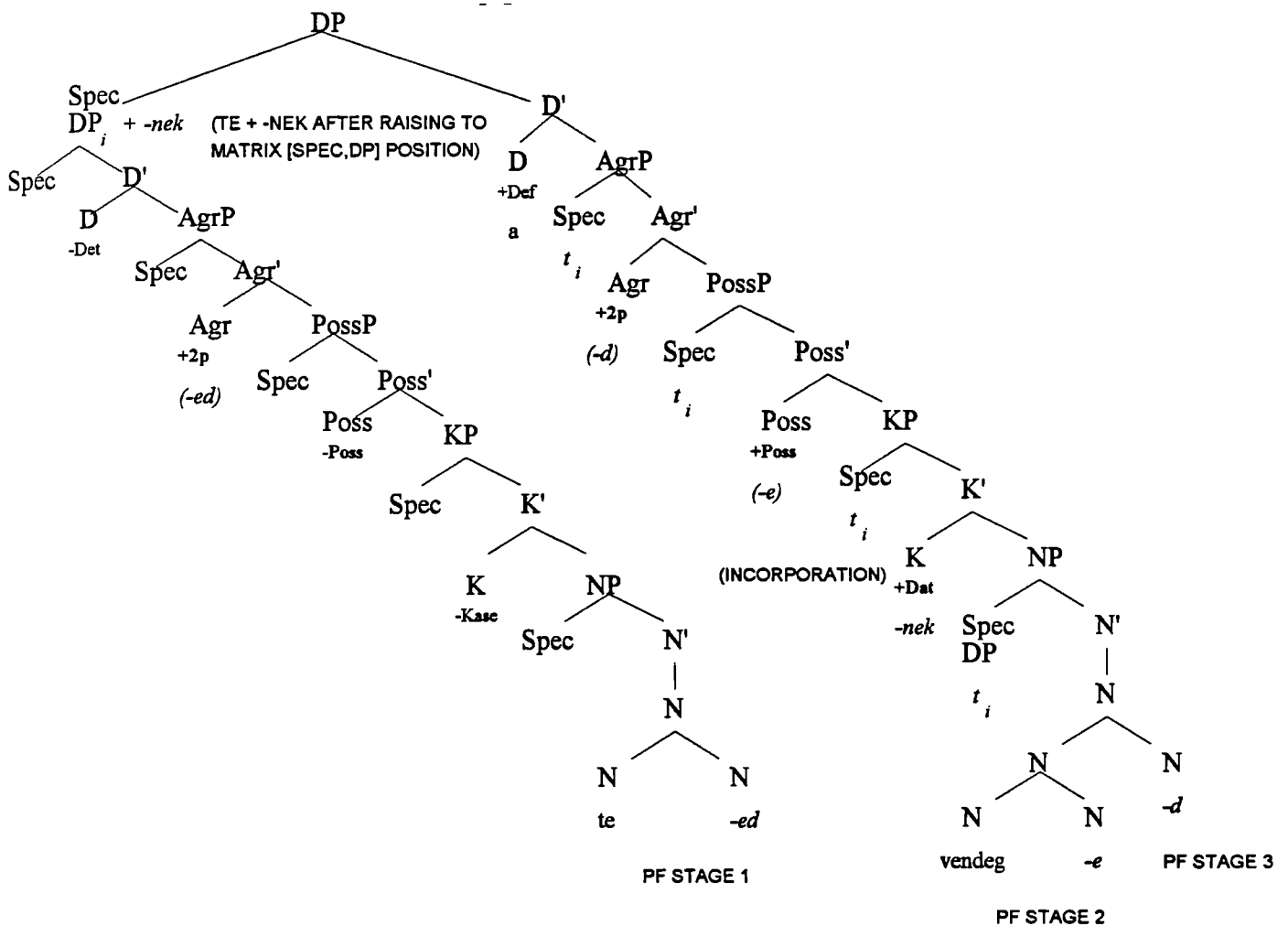


Figure (207) shows the movement path of *te*, its Case-marking, and the insertion of morphemes and the Alternative Realisation of these morphemes at PF.

(207) *Te* at PF after Case-marking

In figure (207), *te* raises to [Spec,KP] to get Case from the [+Dat] feature of Kase (cf. section 4.1.). Case is realised under K^{+Dat} by the morpheme *-nek*. At this point in the derivation, *-nek* affixes to the DP *te*.¹⁴⁰ After affixation, *te + -nek* raises cyclically until it reaches its landing-site in the matrix [Spec,DP] position. The Case affix *-nek* now appears on the DP projection of *te*.¹⁴¹ Once movement of *te + -nek* is complete,

¹⁴⁰This stage in the derivation is labelled 'INCORPORATION' in figure (207). This is analogous to the possessive 's morpheme in English incorporating into a subject DP before the DP raises again (cf. figure (199)). The exact point of incorporation is ambiguous in figure (207) because we have observed in our discussion of figures (198) and (199) that incorporation of a D^2 (*te*) into a K^0 (*-nek*) is problematic. And, like Poss 's, I assume that the subject Case morpheme *-nek* is subject to 'early' Late Lexical Insertion, in order to allow the amalgamation of *te* and *-nek* before the subsequent raising of *te + -nek* to [Spec,DP]. Raising of *te + -nek* to the highest position is motivated in order to facilitate the AR of the Poss and Agr morphemes onto the matrix N *vendég*, and to position *te* in a pre-determiner position (cf. figure (204)).

Finally, the affix *-nek* must affix to the DP projection of *te* (rather than to the N^0 *te*) because, as we noted in section 2.3.1., only DPs receive Case, not embedded NPs. Therefore, I can offer no solution at present to the paradox of how the K^0 morpheme *-nek* can affix to the D^2 Possessor *te* in Hungarian, or, for that matter, how 's can affix to a DP Possessor in English.

¹⁴¹This stage in the derivation is labelled TE + -NEK AFTER RASING in figure (207).

the Late Lexical Insertion of functional morphemes and their Alternative Realisation ensues at PF. In the Possessor DP, the [+2p] feature of Agr is somehow alternatively realised as *-ed* on the *amalgamated* unit *te + -nek*, deriving the string [*te - nek*] *-ed* (PF Stage 1). In the matrix DP, after raising of *te + -nek*, there is *virtual minimality* (cf section 3.3.3.3.) in the governing domain of Poss, so that Poss virtually governs NP. Hence the [+Poss] feature of Poss is realised as *-e* on *vendég* (PF Stage 2). This then allows for virtual government of NP by Agr, so that the [+2p] feature of Agr is realised on the complex *vendég + -e* as *-d* (PF Stage 3). The ultimate sequence at PF is as we would predict from our theoretic principles: *te-nek-ed a vendég-e-d*.

4.1.2.1. Dormancy of Poss in Possessor DPs

Poss may be interpreted as *possessed*. Therefore, Poss is *positively* specified only in the matrix DP in (207), as this is where the possessed noun (*vendég*) appears. Poss is negatively specified in the Possessor DP (*te*), as there is no possessed noun in this DP. Hence Poss is normally dormant in Possessor DPs. However, should the Possessor DP *te* itself take a Possessor subject in its [Spec,NP] position, PossP is available for triggering.

As Possessor subjects are in either the dative or nominative Case in Hungarian, it is their underlying position in a Possessor location that suggests *prima facie* their Possessor function: cf. *te-nek-ed a [t vendég-e-d]* and *a te-Ø [t vendég-e-d]*.¹⁴² A Poss morpheme on the head N actually indicates the Possessee. Owing to the directionality of the alternative realisation of syntactic features, a [+Poss] feature in Poss is realised only on a *possessed* N (never on a Possessor N). Hence it might be useful here to reiterate our observation of section 4.1. that Poss morphemes such as *-e* in (207) are uniformly realised on possessed Ns *to the right* in morphemically rich languages like Hungarian, whereas Case morphemes such as dative *-nek* in Hungarian and genitive 's in English are uniformly affixed (i.e., *incorporated*) to a DP Possessor *to the left*:

(208) $DP[e_D[D_{AgrP}[DP_i Agr[Agrr PossP[t_i Poss[POSS KP[t_i K[NP[t_i N[N]]]]]]]]]$
↳ ←

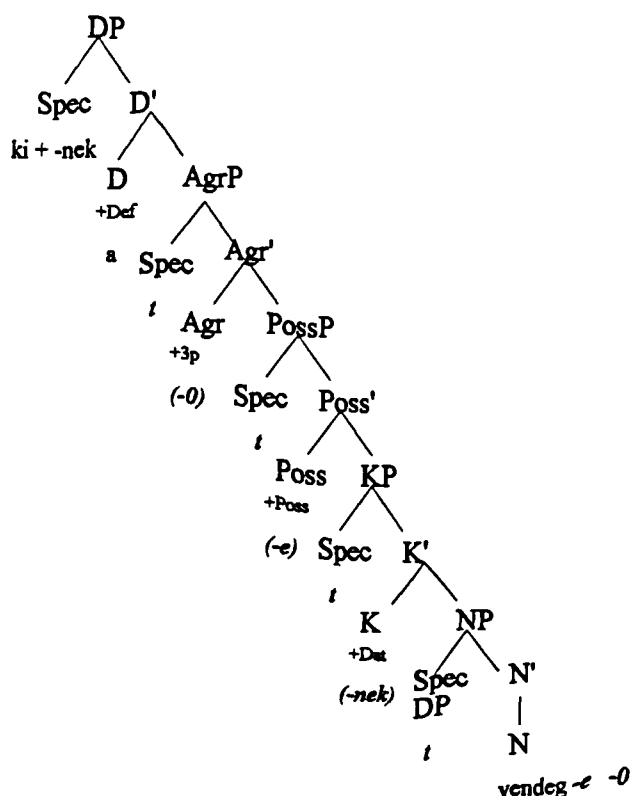
¹⁴²Gruber (1965) calls the position of Possessor in a DP 'possessional location'. Many subject Possessors can only loosely lay claim to this role, if at all: cf. *John's reliability*; *Mark's restoration of the church*; *Nick's reconstruction of the crime*; *Betsy's reliance (on Tim)*; *Carl's mornings*; *children's clothing*; *Wednesday's menu*; *the day's events*; *tomorrow's analysis* (cf. Anderson 1984:1-15; Chomsky 1986a:195). The different distributions of Possessor Ns in Hungarian according to their Case feature leads me to conjecture that different Case features on Possessor Ns realise different types of Possessors.

4.1.2.2. Case-marking of *wh*-Possessors

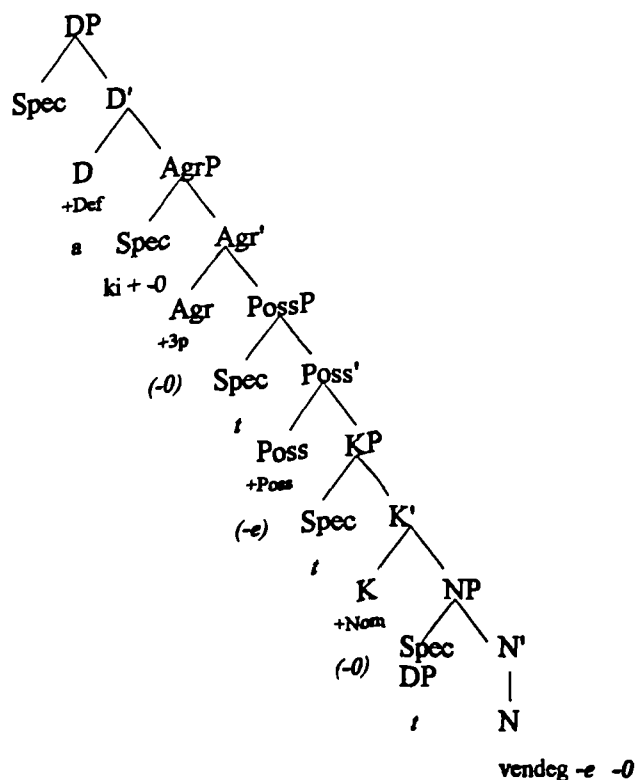
For *wh*-operator Possessors in Hungarian, Case-marking again depends on a pre- or post-determiner position. Licit *wh*-operators which occur before determiners move into the A'-position of [Spec,DP], taking their dative Case suffix *-nek* along with them. Illicit *wh*-operators are those which occur after determiners and raise no further than the A-position of [Spec,AgrP]. In this case they would be nominative Case-marked *en route* by K of KP (recall figure (205)), contrary to the dative Case requirement for *wh*-operators in this language. Figures (209) and (210) show the Case-marking of *wh*-Possessors in Hungarian. As *wh*-Possessors are 3rd person, the Agr morpheme is characteristically absent from *ki*.

(209) Pre-determiner *wh*-operator

ki-nek a vendég-e-Ø
 who-Dat the guest-Poss-3p
 'whose guest'

(210) Post-determiner *wh*-operator

*a ki-Ø vendég-e-Ø
 the who-Nom guest-Poss-3p
 'whose guest'



4.2. *Person* in the DP

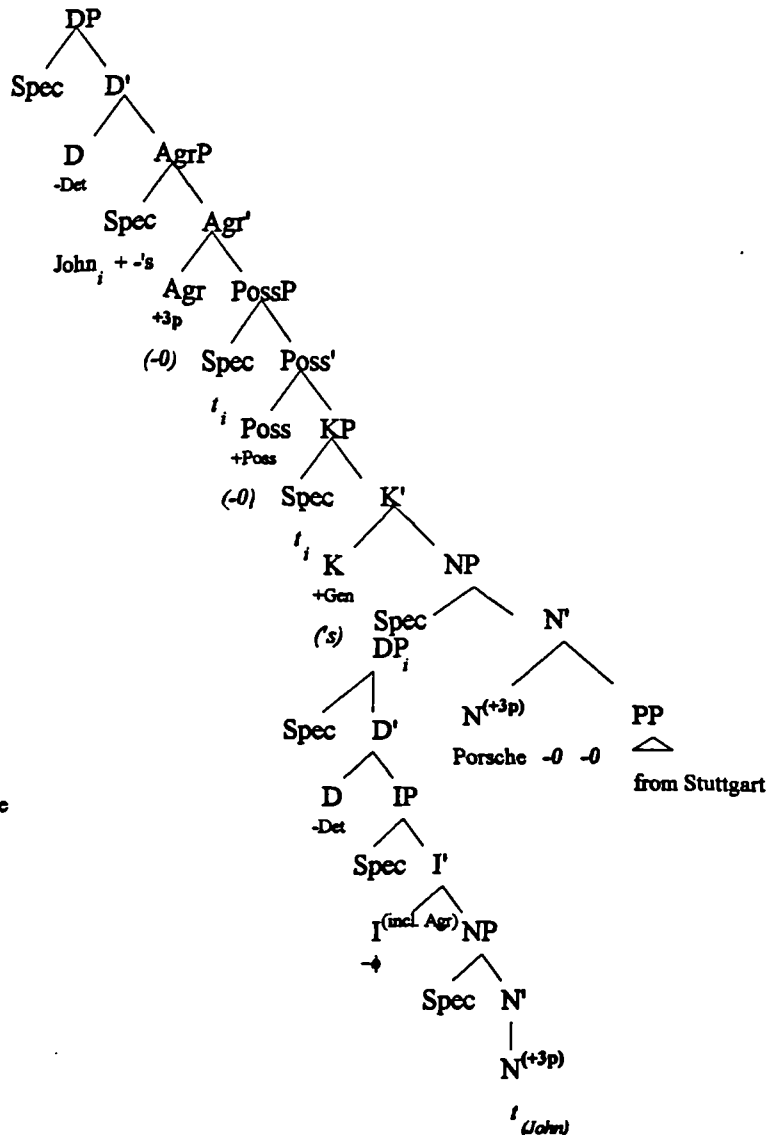
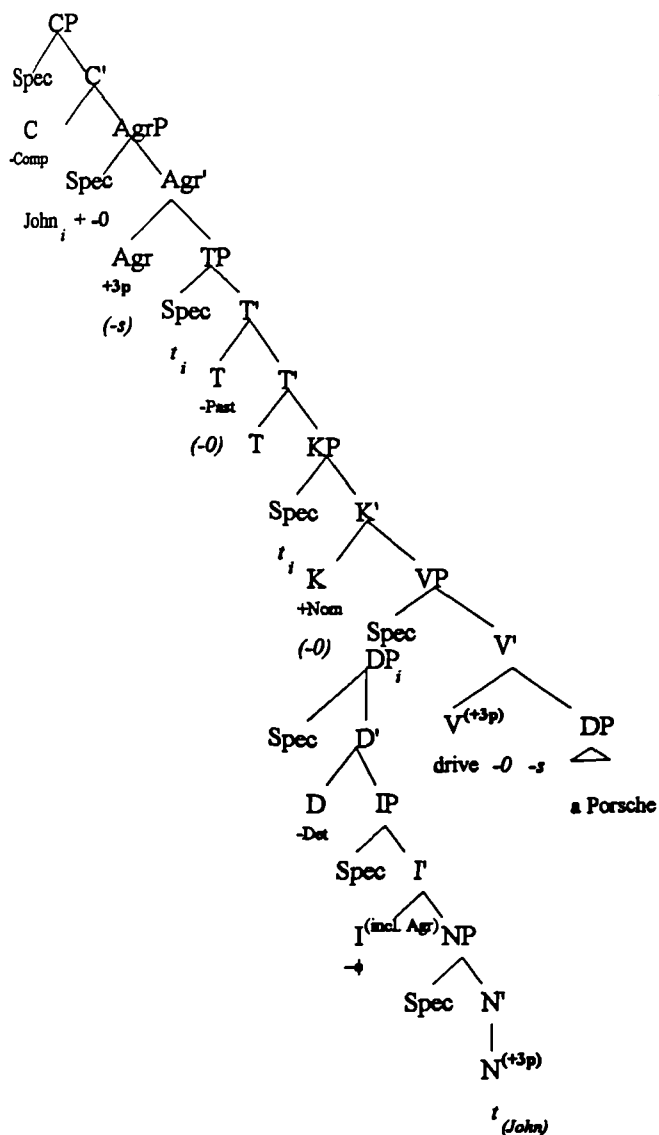
In section 3.3.3.1. we posited that the *Agr* category houses the [+Person] feature of nominals, and therefore that the [\pm Agr] feature is equivalent to the [\pm *Person*] feature. We have put the case that *Agr* and *Case* and *Number* are thus discrete *categories*. Based on the empirical evidence presented in sections 3.3.3. and 3.3.3.1., *Agr* is not synonymous with the ϕ -features of person, number, gender, and *Case*, but rather is equivalent only to *Person*. Furthermore, we have suggested that **I** will be used as the abstract composite notation for ϕ -features, as opposed to *Agr*. This is an important departure from conventional GB-theorising, and critical to our understanding of ϕ -features. *Agr* is now a single element and **I** is the aggregated one. In our discussion then, **Agr** = *Person* only, and **I** = a collective site for the ϕ -features of person, number, gender, and *Case*. Notations such as 3sg or 2pl will be more accurately represented as 3p or 2p. The *Num* category to accommodate the features of [\pm Plural] is discussed in section 4.4. below.

In section 3.3.3.2. we observed that Spec-Head agreement is a mediation process between a head and its specifier, in either direction. We have supposed that the value of **K** is linked to the structural position of nominal arguments, which in turn triggers the functional projection KP. Possessor subjects, on the other hand, by virtue of their *Person* feature trigger functional *AgrP*. In this section we will examine closely the rightwards copying of a [+Person] feature from a specifier subject to its lexical head sister, as an extension of Spec-Head agreement (cf. section 3.3.3.2.).

Figures (211) and (212) illustrate how *Agr* accommodates the *Person* feature in English.

(211) John- \emptyset drive- \emptyset -s a Porsche
 John-Nom drive-Tns-3p a Porsche
 'John drives a Porsche'
 3p in English clauses

(212) John-'s Porsche- \emptyset - \emptyset from Stuttgart
 John-Gen Porsche-Poss-3p from Stuttgart
 'John's Porsche from Stuttgart'
 3p in English nominals



In (211) and (212) the Possessor DPs are articulated only in order to demonstrate that *John* is itself a DP, with various functional layers. The AgrP and PossP and KP nodes of these Possessor DPs are conflated into the abstract I complex, with a $-\emptyset$ notation indicating that there are no overt ϕ -features (such as person, number, gender, or Case) to be realised internal to this DP.¹⁴³ As a DP, however, *John* requires Case, and so must raise to [Spec,KP] of the *matrix* clause in (211) or the *matrix* nominal in (212). In this situation, *the whole DP* raises for Case-marking. At the same time, internal to the DP *John*, there is no Possessor subject for *John* and hence no motivated movement.

¹⁴³ [\pm Poss] may be considered a ϕ -feature along the lines of [$\pm wh$] (cf. fn. 125).

John as the head N remains *in situ* in its DP. If, however, *John* itself were to take a Possessor subject such as *Bill*, a DP derivation such as *Bill's John* (e.g., a father-son relationship) would force *move- α* for genitive Case-marking. In this case, *Bill* would raise to a [Spec,KP] position *within* the Possessor DP: $DP[DP[IP[Bill]_I[s]_{NP}[t]_{N[John]}]]]$. The DP *John* contains its own Agr and Poss and Kase nodes, as does the DP *Bill* and the overall DP *John's Porsche* in (212). However, these *F*-nodes are triggered only in DPs which contain a Possessor subject, such as *Bill's John* or *John's Porsche*.¹⁴⁴ In this case, Agr of the DP would be triggered to mark agreement between the subject specifier and the head N (as between *én* and *ház* in the Hungarian example *én-nek-em a ház-a-m*; I-Dat-1p the house-Poss-1p; 'my house'), Poss of the DP would be triggered to mark possession on the possessed noun (as in *én-nek-em a ház-a-m*; I-Dat-1p the house-Poss-1p; 'my house'), and Kase would be triggered to Case-mark the subject specifier internal to the DP (e.g., genitive in English and nominative or dative in Hungarian). Thus in our expanded DP-Analysis, the realisation of Poss and Case and Agr morphemes in both Possessor and matrix DPs is a parallel process.

The articulation of *John* also serves to illustrate at base level the Spec-Head relationship of *John* and *drive* in (211), or of *John* and *Porsche* in (212). Feature-copying between lexemes happens at D-structure, before *move- α* resulting in S-structure and before the Late Lexical Insertion of functional morphemes and their Alternative Realisation at PF. Hence I propose that, within the framework of our 'Subject Specifier' hypothesis of section 2.1.1., feature-copying at base level between a subject lexeme and a predicate lexeme looks something like: $VP[John^{3p}]_V[drive^{(3p)}]$ and $NP[John^{3p}]_N[Porsche^{(3p)}]$.

The feature-sharing of a person specification between lexemes allows for an Agr projection in both the Possessor subject and in the respective clause or nominal, as in (211) and (212). However, due to the paucity of English morphology, clauses such as (211) characteristically display Agr (i.e., *Person*) only on the head V (not on the subject DP), only in the form of 3rd person singular, and only in finite clauses which are [-Past]. In (211), let us suppose that the subject N *John* copies its Person feature of 3p onto the head V *drive* as a reflex of Spec-Head agreement. This [+3p] feature on *drive* triggers the Agr category of the clause, onto which it projects. In this sense Agr acts as a functional 'holding' site for the person feature.¹⁴⁵ At PF the [+3p] feature of Agr is alternatively realised as *-s* on the head V *drive*, after *John* + its Case affix $-\emptyset$ raises to [Spec,AgrP] in order to facilitate

¹⁴⁴This is analogous to the situation in the clause, where KP and AgrP are triggered only in the case of an overt subject specifier: *John- \emptyset drive-s a Porsche*; *John-Nom drive-3p a Porsche*.

¹⁴⁵Functional projections are necessary sites for the accommodation of the ϕ -features of a lexical head because an *L*-head such as V can only contain an V^0 morpheme, and can only project to VP. Hence *F*-categories are necessary to house the ϕ -features of V until they can be alternatively realised as morphemes on V at PF.

this. After the raising of *John* + $-\emptyset$, there is *virtual minimality* in the governing domain of Tense, so that Tense-virtually governs VP and the [-Past] tense feature of T can be realised on *drive* as $-\emptyset$. Once T is emptied of its features, virtual minimality again holds between Agr and VP, so that Agr virtually governs VP and its [+3p] feature can be realised on *drive* as *-s*.

English nominals as in (212), however, never display overt Agr (or Poss) on head Ns. As in the clause, the subject N *John* copies its [+3p] Person feature onto the head N *Porsche* via Spec-Head agreement. [+3p] on *Porsche* triggers functional AgrP of the matrix nominal. After *John* and its Case affix 's raises to [Spec,AgrP] to facilitate AR, the [+Poss] feature of Poss and then the [+3p] feature of Agr are successively alternatively realised on the head N *Porsche* as $-\emptyset-\emptyset$. Whilst we have no evidence of the existence of Agr and Poss morphemes on head Ns in English, we do find it cross-linguistically. Therefore, for a richer morphology than that of English nominals, we compare some Hungarian and Finnish data.¹⁴⁶ As a first step we shall examine in (213) and (214) the feature-copying between lexemes at base level; in figures (215) and (216) we examine the functional category morphemes for the same examples.

¹⁴⁶The Hungarian example is in the 'post-determiner Possessor' style (cf. section 4.1.2.), in order to be more analogous to the Finnish example.

feature will be alternatively realised on the respective Ns at a later stage in the derivation. Hence the AgrPs of the Possessor Ns (*én* and *min*) and of the head Ns (*ház* and *talo*) both share an identical Person feature of 1p.

Figures (215) and (216) show the PF derivations of the 1st person morphemes for these examples, after *move- α* and the Late Lexical Insertion of functional morphemes. Once again the Possessor DPs are articulated purely for exposition; amongst other things, we can trace the source of the 1p feature, from the Possessor N to the head possessed N to the *F*-category *Agr*. The gloss confirms that the Agr morphemes *-m* in Hungarian and *-ni* in Finnish agree in Person (1st) with the Possessor Ns. We note that the Agr morphemes *-m* in Hungarian and *-ni* in Finnish are 1p affixes for the *head* N; Agr on the Possessor Ns is abstract, as shown in (215) and (216). We say that Agr is abstract because of evidence from, for example, the 'pre-determiner Possessor' variant in Hungarian nominals: cf. *én-nek-em a ház-a-m* (I-Dat-1p the house-Poss-1p; 'my house'), where Agr is clearly visible on both the Possessor N *én* and the head N *ház*. Abstract Agr on a Possessor N also applies to Possessor Ns in English nominals such as (212): cf. *John-'s- \emptyset Porsche- \emptyset - \emptyset* (John-Gen-1p Porsche-Poss-1p; 'John's Porsche') and *én-nek-em a Porsche-e-m* (I-Dat-1p the Porsche-Poss-1p; 'my Porsche'). (Cf. fn 116, 2nd. para on the postulation of abstract morphemes in GB-theory).

Furthermore, since the affixes *-m* and *-ni* are both first person *singular* agreement suffixes we need not, at the moment, concern ourselves with plurality (a feature of the *Num* category). Finally, Det is overt in both the Finnish and the Hungarian example, providing more support for our 'Infl in DP' hypothesis.

in Finnish for an Agr morpheme there is none for a Poss morpheme, so that the tree in (216) is purely hypothetical. However, we can take it to be a reasonable one in view of our elaborated analysis of DP; as we noted in section 4.1., PossP is a UG *potentiality* whether or not it is utilised by a particular language.

We conclude by observing that the realisation of an Agr morpheme from a [+Person] feature is fully plausible within our multi-categorial and Alternative Realisation framework. The following two examples show similar derivations for 2nd person Agr morphemes in Hungarian and Finnish .

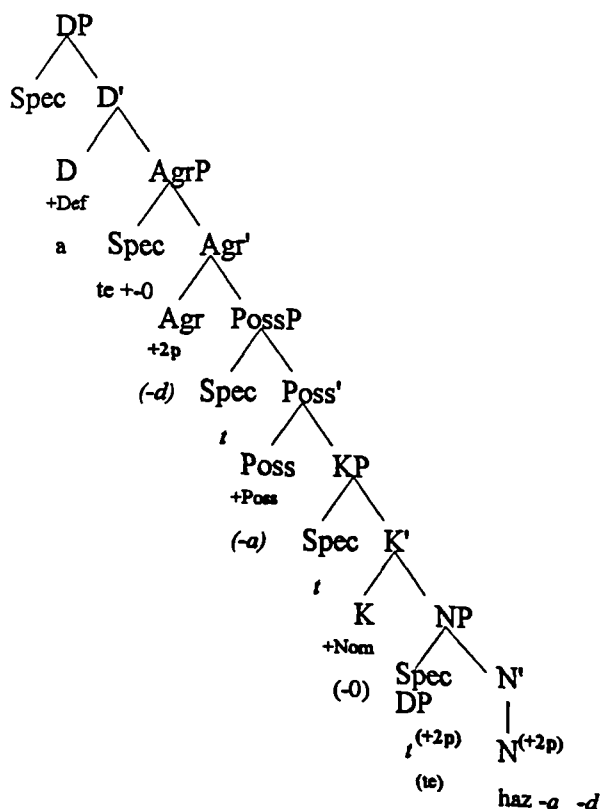
(217) Hungarian

az te-Ø ház-a-d
 the thou-Nom house-Poss-2p
 'the thy house'

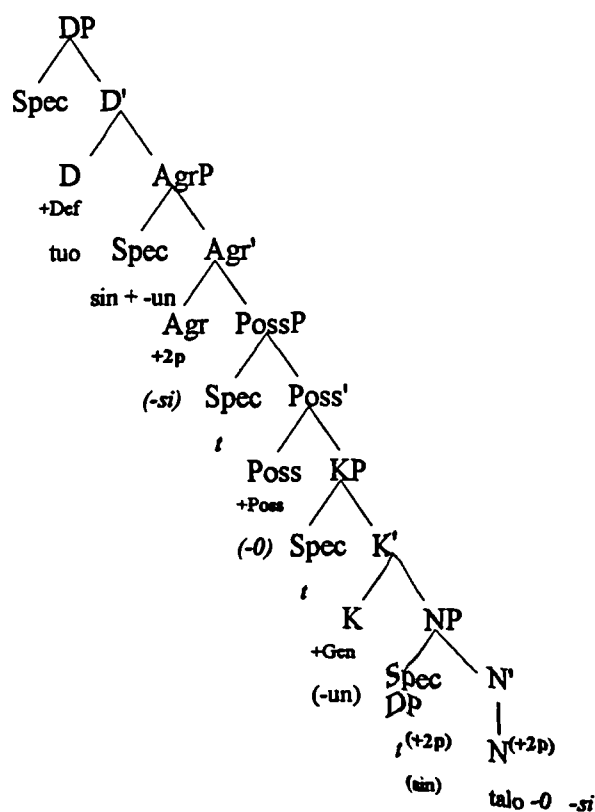
(218) Finnish

tuo sin-un talo-Ø-si
 that you-Gen house-Poss-2p
 'that your house'

2p in Hungarian nominals



2p in Finnish nominals

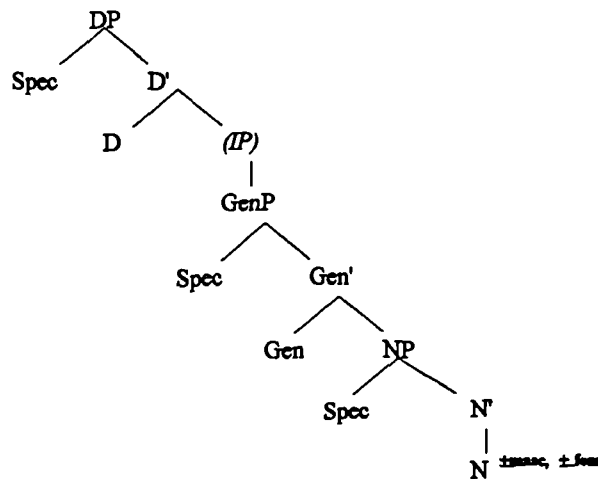


4.3. Gender in the DP

Rouveret (1991) suggests that gender is an inherent property of an N and coexists with the person specification; i.e., that gender along with person originates on N of NP. Rouveret thus supposes gender to be a feature on N at the base level.

Ritter (1993), however, proposes that gender originates at different sites in different languages. She claims that in Hebrew, gender is a feature on N at D-structure but that in Romance, gender is a feature on Num at D-structure. And independently of Rouveret and Ritter, Picallo (1991) proposes that gender is a functional *category* (*Gen*) in the DP, along the lines of (219):

(219)



We can summarise the above proposals into three views on nominal gender:

(220)

- a) that gender is a feature on N at base-level (Rouveret 1991)
- b) that gender is a feature on N at base-level for Semitic and a feature on Num at base-level for Romance (Ritter 1993)¹⁴⁸
- c) that gender is a functional head (*Gen*) taking NP as its complement (Picallo 1991)

From (220) (a) - (c) it seems that once again there is a *feature vs. category* debate concerning the status of gender in the DP. In this section we will argue that gender is a base-generated feature on N across languages. This means that of all the ϕ -features of Infl in the DP, only gender will remain analytically as an actual *feature*.

¹⁴⁸Ritter (1993:795) says that gender is a base-generated feature on Num in Romance and is attached to N as a consequence of syntactic head-movement. In our analyses, functional morphemes are late lexically inserted at PF (cf. section 1.3. on ancillary categories); therefore I assume that they are inserted *after* movement resulting in S-structure. It is not clear at which level Ritter's gender *morpheme* originates but the implication is that it is inserted in Num at D-structure.

4.3.1. Gender as a feature on N at base-level

Ritter (1992:203) posits that *gender* in the noun phrase is specified on the lexical head N in Hebrew, a position based upon the difference between derivational and grammatical morphemes. She defines derivational affixes as those which are integral to a lexical head at all levels of representation (i.e., base-generated affixes), and inflectional affixes as those which are contained in F^0 categories and then attach to lexical heads via a movement operation (i.e., raising of the lexical head to F^0).

Incorporating this perspective into our own analytical framework, we can say that:

(i) derivational affixes originate at D-structure on the N itself; and (ii) the majority of inflectional affixes are generated at PF as the Alternative Realisation of certain syntactic features onto a sister N (recall that this was our position in Chapter 1 (cf. fn. 36) concerning the PF-realisation of *ancillary* morphemes such as those designating tense, aspect, agreement, etc. - that they are late-lexically inserted due to their nonargument status. Ancillary morphemes for nominals would be those realising deixis, Case, plurality, etc.).

Since part of 'knowing' a noun is knowing its gender (cf. Ritter 1993:795), 'knowing' the gender form of a lexeme thus precedes the process of projecting ancillary functional categories such as DP or KP or NumP above it. The first step in the generation of a noun is lexical insertion based upon its feature-matrix. Logically, insertion of an argument lexeme happens at base level. If gender is a feature of N at base level, it will naturally determine the insertion of either a masculine or feminine variant of the noun at this level. Following Harris (1991), Bonet (1991), and Bernstein (1993b), let us assume that *masculine* is really the absence of a feature specification for gender (cf. Germanic (English) *mister-mistress*, etc.; Romance (Spanish) *poeta-poetisa*, etc.; Semitic (Hebrew) *magav-magavet*, etc.).¹⁴⁹ Gender on an N, therefore, would manifest itself as a [\pm feminine] lexeme. English with its morphological poverty does not afford much data in this regard, but the variants in figure (221) show how the gender feature on an N may influence base as opposed to late lexical insertion.

- (221) (a) N, +common, +count, -abstract, +animate, +human, +mature, -fem, -plural ___ (XP) : *man*
 (b) N, +common, +count, -abstract, +animate, +human, +mature, +fem, -plural ___ (XP) : *woman*
- (c) N, +common, +count, -abstract, +animate, +horse, -mature, -fem, -plural ___ (XP) : *colt*
 (d) N, +common, +count, -abstract, +animate, +horse, -mature, +fem, -plural ___ (XP) : *filly*
- (e) N, +com, +count, -abstr, +animate, +human, \pm mature, +inheritior, -fem, -pl ___ (XP) : *heir*
 (f) N, +com, +count, -abstr, +animate, +human, \pm mature, +inheritior, +fem, -pl ___ (XP) : *heiress*

¹⁴⁹As far as I know, Harris (1991:29) was the first to propose this.

(221) (a) - (d) are suppletive forms in English, with intrinsic gender. Only (221) (f) exhibits a gender affix (*-ess*), and this derivational word formation takes place at base-level. The *-ess* affix remains integral to *heir* at all levels of representation; I assume, therefore, that *heiress* is learnt *in toto* as part of the process of acquiring the mental lexicon. Furthermore, it is evident from the feature-matrices of the nouns in (221) that derivational word formation is restricted to the lexicon. We conclude from this observation that gender features occur exclusively in the lexicon and not in the syntax (cf. Ritter 1992:203). Therefore, a GenP functional projection such as in figure (219) would be redundant and thus uneconomical. We reiterate our *gender-as-feature* view by observing that functional categories serve primarily as insertion sites for inflectional morphemes at *PF*, whilst lexical categories (such as *N*) serve as insertion sites for lexical (including derivational) morphemes at *D-structure*.

In Hebrew the process is the same as in English for the base-generation of a noun form according to its gender feature. However, in this language gender is a regular feature on noun stems and is also utilised much more productively to derive new nouns. One of three feminine affixes (*-it*, *-et*, or *-a(t)*) may be added to masculine inanimate forms to produce new feminine forms (cf. Ritter 1993:796). This is illustrated in figure (222).

- | | |
|---|--|
| (222) (a) $N^{+masc} = magav$ ('wiper') | (d) $N^{+fem} = magev\text{-}et$ ('towel') |
| (b) $N^{+masc} = maxsan$ ('warehouse') | (e) $N^{+fem} = maxsan\text{-}it$ ('magazine') |
| (c) $N^{+masc} = amud$ ('page') | (f) $N^{+fem} = amud\text{-}a$ ('column') |

From (221) and (222) we see that in English and in Hebrew, gender must be a feature of *N* at *D-structure*, in order to derive a semantically distinct noun in the mental lexicon. However, whereas in English the gender feature on an *N* head is directly related to its extralinguistic referent (cf. *colt* and *filly*; *heir* and *heiress*), in Hebrew the feminine affixes in (222) (a) - (c) have nothing to do with the gender of the referents in the real world. So whilst gender is derivational in both English and Hebrew, in English gender is constrained to be referent-linked (otherwise, this distinction is \emptyset) whereas in Hebrew it is not (i.e., it is arbitrary for inanimate forms). This makes gender-affixing a much more powerful derivational strategy in Hebrew, and the examples in (222) (d) - (f) demonstrate that gender must be integral to the lexeme at base-level for differentiation. It would follow that the learning of the Hebrew lexemes with gender affixes in (222) (d) - (f) is no different to the learning of the Hebrew lexemes without gender affixes in (222) (a) - (c). The same applies to the learning of English lexemes with gender affixes (cf. *mistress*, *heiress*) and without gender affixes (cf. *man/woman*, *colt/filly*, *heir*): each lexeme must be learnt as a lexical whole and not as a compositional unit.

In Romance, similarly, the gender feature need not be referent-linked. For animate nouns, there is often but not always gender-linking with extralinguistic referents: compare Spanish *muchacho-muchacha* (m. 'boy' - f. 'girl') and *jefe-jefa* (m. 'chief' - f. 'chief'), but *patriota* (m. or f. - 'patriot') and *testigo* (m. or f. - 'witness'). For inanimate nouns, gender can be entirely arbitrary: compare the lexically-related Spanish *cerezo* (m. - 'cherry tree') and *cereza* (f. - 'cherry'), and the unrelated *paso* (m. - 'step') and feminine *pasa* (f. - 'raisin'), as well as *moral* (m. - 'blackberry bush') and *moral* (f. - 'morality'). And then there is feminine *mano* ('hand'), where a typically masculine affix (-o) appears on an inanimate feminine noun in Spanish. I propose, *contra* Ritter (1993), that these examples (from Harris 1991) support gender as a lexical (i.e., base-generated on N) phenomenon cross-linguistically.¹⁵⁰ The examples also suggest that gender in Romance is not used as a productive word-forming strategy as it is in Semitic (i.e., we can not form the feminine Spanish noun *pasa* ('raisin') from the masculine noun *paso* ('step'); both of these noun forms are 'stems' in the lexicon, with gender an integral feature of both noun stems (only with animate nouns is there the -o vs. -a gender alternation in Spanish). With Hebrew nouns however, we can form the feminine noun *magavet* ('towel') from the masculine noun *magav* ('wiper'); the feminine noun *maxsanit* ('magazine') from the masculine noun *maxsan* ('warehouse'); the feminine noun *amuda* ('column') from the masculine noun *amud* ('page'), etc. In Hebrew the feminine suffixes are distinct from the masculine noun stems, and hence allow for productive affixation with inanimate nouns.

Based on the richness of gender-affixing as a productive word-forming strategy in Hebrew, Ritter (1992, 1993) offers numerous pieces of evidence from Hebrew that gender affixes are derivational rather than inflectional in this language. We will see in section 4.3.2. that she considers gender to be inflectional in Romance. The following is a summary of her arguments to which I have added my own interpretations.

(a) *Autonomy of feminine suffixes*

Feminine affixes in Hebrew have no inherent semantic content. Masculine stems may be rendered into feminine nouns by the affixation of feminine suffixes, as we observed in (222). In addition to the option of being free from extralinguistic gender, the three feminine suffixes in Hebrew may also be entirely independent from the gender of the noun stem. This makes the form of the attaching suffix (i.e., -it, -et, or -a(t)) unpredictable:

(223) <i>magev-et</i> ('towel')	<i>maxsan-it</i> ('magazine')	<i>amud-a</i> ('column')
(m.) (f.)	(m.) (f.)	(m.) (f.)

¹⁵⁰Ritter (1993:795) proposes that gender affixes in Romance attach to the N stem in the syntactic component and not in the lexicon (cf. sections 4.3.2. and 4.3.2.1.).

The autonomous nature of the feminine suffixes in (223) strongly suggest that the gender of nouns is addressed by lexical listing and not by inflection.

b) *Free affixation of feminine suffixes*

Hebrew allows different feminine affixes to attach to the same masculine stem, in order to derive separate new nouns. In (224) the feminine affixes *-a* and *-it* may both be added to the same masculine inanimate stems. The function of the feminine affix is to make more specific the meaning of the derived noun. The result is a distinct lexeme, although semantically related to the original masculine stem. This can only happen at D-structure. If *-a* and *-it* were inflectional, we would predict that only one or the other of these suffixes would attach to the noun stem for gender inflection, and that the gender of this suffix would agree with the gender of the stem. However, the data in (224) show that both feminine *-a* and feminine *-it* may attach to both of the masculine nouns *txun* and *tox_n*, and that these suffixes do not in fact agree with the gender of the stems. We conclude that gender is purely a derivational mechanism in these examples.

(224) (a) N ^{-fem}	- affix ^{+fem}	(a') N ^{-fem}	- affix ^{+fem}
<i>txun</i>	- <u>a</u> ('feature')	<i>tx_n</i>	- <u>it</u> ('feature of linguistics'; more specific)
(b) N ^{-fem}	- affix ^{+fem}	(b') N ^{-fem}	- affix ^{+fem}
<i>tox_n</i>	- <u>it</u> ('plan')	<i>tox_n</i>	- <u>a</u> ('computer program'; more specific)

(c) *Inconsistency of gender under pluralisation*

Hebrew exhibits both a masculine plural morpheme (*-im*) and a feminine plural morpheme (*-ot*). One would expect that masculine nouns always take masculine plural affixes and that feminine nouns always take feminine plural affixes, but this is not in fact the case. Irregular nouns in Hebrew sometimes take the form of masculine stem + feminine plural affix and sometimes take the form of feminine stem + masculine plural affix:

(225) (a) <i>xalon</i>	- <i>ot</i>	(a') * <i>xalon</i>	- <i>im</i>
window (m.)	(f.pl.)	window (m.)	(m.pl.)
(b) <i>san</i>	- <i>im</i>	(b') * <i>san</i>	- <i>ot</i>
year (f.)	(m.pl.)	year (f.)	(f.pl.)

Concerning gender and number, *number* is analysed as an inflectional property due to the alternation of *singular* and *plural* nominal forms at PF. If *gender* in the examples in (225) were inflectional as well, we would have to posit both Gender and Number

F-categories. We would then assume that the Gen category contains an abstract gender morpheme $-\emptyset$, as in (226).¹⁵¹ -

(226) (a) N ^{-fem, etc.}	<i>Gen affix</i> ^{-fem, etc.}	<i>Num affix</i> ^{-fem, +pl, etc.}
*xalon	$-\emptyset$	<i>-im</i>
window	(-fem, +pl.)	(-fem, +pl.)
(b) N ^{+fem, etc.}	<i>Gen affix</i> ^{+fem, etc.}	<i>Num affix</i> ^{+fem, +pl, etc.}
*san	$-\emptyset$	<i>-ot</i>
year	(+fem, +pl.)	(+fem, +pl.)

This poses two problems. First, in such an analysis, the gender of an N would not be 'known' until PF, which we've argued against throughout this section. Second, we would expect that the gender and number morphemes would agree with each other, assuming that *F*-categories inherit their syntactic features from *L*-categories.¹⁵² In other words, if gender and number were both ancillary functional morphemes dependent on the lexical head N for their semantic 'substance', they would both predictably reflect identical (gender) properties of this N throughout a derivation. However, the data in (226) contradict this. Whilst the gender $-\emptyset$ morpheme would naturally agree with the head N, the number morpheme clearly does not. *Num*, in fact, can not bear the same gender property of the N, or ungrammaticality results. Whilst this will be problematic for any analysis, the data in (226) can be addressed more easily by an analysis where gender is a base-generated property of N occurring *before* the affixation of a rogue number morpheme, such as in (227):

(227) (a) N ^{-fem, etc.}	<i>Num affix</i> ^{+fem, +pl, etc.}
xalon	<i>-ot</i>
window	(+fem, +pl.)
(b) N ^{+fem, etc.}	<i>Num affix</i> ^{-fem, +pl, etc.}
san	<i>-im</i>
year	(-fem, +pl.)

¹⁵¹Gen precedes Num in a linear string because gender marking is closer to the noun head than number marking. Ritter gives evidence from Hebrew that N-Gen-Num is the order of morphemes; cf. figure (229) for Ritter's evidence and figure (247) for Picallo's placement of GenP.

¹⁵²To remind the reader, *F*-categories are functional categories and *L*-categories are lexical categories. Abney (1987:65) describes functional elements as lacking in semantic content, i.e. lacking any referent in the extralinguistic world. It is with this understanding that I refer to *F*-categories as *ancillary* to *L*-categories. In the same vein, Chomsky and Lasnik (1991:37) coin the term *L-relatedness* for the process whereby an *L*-head assigns its substantive features to an *F*-head. Cf. also Roberts (1992:16).

In (227) gender is represented purely as a *feature* on N; it does not trigger a functional category *Gen* and we do not suppose an abstract gender morpheme ($-\emptyset$). Hence in this representation gender is derivational, occurring at the base level, whilst number is inflectional. However, this version of the facts still does not account for the peculiar gender of the number morpheme (*Num* displays a [+pl] feature for its head N but displays an opposite [\pm fem] feature). Let us suppose that derivational gender and inflectional number need not agree if for some reason the *Num* head simply does not inherit the gender feature of its *L*-head. With no gender feature raised to *Num* in (227), the insertion of a masculine or feminine plural morpheme under *Num* is purely arbitrary. Thus we get strings like *xalon-ot* and *san-im*. We will return to this phenomenon in section 4.3.3.

To summarise our interpretation of the data in (226) and (227), gender and number differ critically in syntactic status. Gender is of *feature* status whilst number is of *categorial* status. Consequently, their morphemes are generated at different levels. Gender morphemes are generated at base-level and are lexical (i.e., derivational on N), whilst number morphemes are generated at superficial level and are functional (i.e., inflectional on N).

d) *Nominal-modifier agreement in Hebrew*

We observed in (c) that some nouns in Hebrew can be of one gender yet take a plural affix of a different gender. When this is the case, and adjectival modifiers occur with the pluralised noun, the adjective will always agree with the gender of the noun stem, and not with the plural affix. This is despite the fact that the same plural morphemes that appear on Ns in Hebrew also appear on modifying As in Hebrew: either masculine plural *-im* or feminine plural *-ot*. We might expect, therefore, that the plural morphemes for an N-A sequence would exhibit the same genders. But it is just the opposite in (228).

(228) (a) *san	-im	tov	-im	(a') san	-im	tov	-ot
year(f.)	(m.pl.)	good	(m.pl.)	year(f.)	(m.pl.)	good	(f.pl.)
(b) *xalon	-ot	gdol	-ot	(b') xalon	-ot	gdol	-im
window(m.)	(f.pl.)	big	(f.pl.)	window(m.)	(f.pl.)	big	(m.pl.)

The data in (228) indicate that adjectival modifiers agree with the gender of the head N in Hebrew, and not with the gender of the plural morpheme. This indicates that word formation based on gender occurs early on in the lexicon, before any *move- α* operations involving the noun and before any PF-insertions of inflectional morphemes such as plural *-im* or plural *-ot*. As such, the data suggests that gender is base-generated and derivational.

4.3.2. Gender *not* as a feature on Num in Romance

Ritter (1993) uses the term *gender-switching* for the process of deriving new nouns in the the lexicon by the addition of a feminine suffix to a masculine stem. In Romance, as in English, gender suffixes are constrained to share the gender of the noun stem for both animate and inanimate nouns. Feminine suffixes are therefore not generally available for productive word formation, except to form a feminine noun corresponding to a biological referent (cf. French *chauffeur/chauffeuse* ('driver'); Spanish *oso/osa* ('bear'); Portuguese *professor/professora* ('teacher'); English *lion/lioness*).¹⁵³ Ritter concludes that because gender suffixes are not available in Romance as a derivational strategy, they are inflectional affixes like number affixes (i.e., attach to the N stem in the syntax after head movement). However, unlike Picallo (1991), who places the gender feature in a *Gen* functional category (cf. figure (235)), Ritter proposes that the gender feature in Romance languages is situated in the *Num* functional category. The gender feature in Semitic, on the other hand, is situated on N at all levels of representation. Her claim is due to data from Romance languages such as Romanian and Walloon, where feminine gender only appears in conjunction with a plural morpheme. However, such a position (i.e., that gender is a feature of Num in Romance but a feature of N in Semitic) seems unnecessarily stipulative. In our discussion we will depart from Ritter's analysis in this regard, and maintain that gender is invariably a base-generated feature on N.

Before considering the interaction of gender and number, let us first consider the position of both in relation to N. If number affixes are attached to the head noun in the syntax, and the gender feature is integral to the noun at the base level, then it is predictable that gender suffixes are closer to a noun head than number marking. Although it is often difficult to determine the sequence of gender and number morphemes due to a lack of overt evidence, Ritter provides the following datum from Hebrew which clearly shows an *N-Gen-Num* sequence. In figure (229), the feminine suffix *-it* is reduced rather than deleted in the presence of the plural suffix *-ot*.

(229) (a)	txun	-it	⇒	txun-	(i)t	-ot
	feature	-f.		feature	-f.	-pl.
(b)	*txun	-it	⇒	txun	-(o)t	-it
	feature	-f.		feature	-pl.	-f.

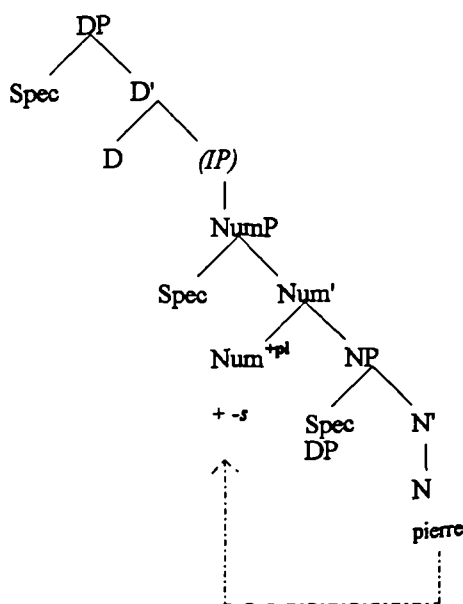
A reversal of the gender and number suffixes in (229) (a) results in ungrammaticality, as (229) (b) shows.

¹⁵³This is a matter of degree however, as there do exist some lexical pairs of inanimate gender alternates in Romance, such as French *cigare/cigarette* ('cigar/'cigarette'); *cours/course* ('class/'running'); *calculateur/calculatrice* ('adding machine/'hand calculator'), etc.

4.3.2.1. Raising of N^0 to Num^0 and gender

Ritter (1993) notes that morpheme order in Romance has caused a number of researchers to conclude that N^0 raises to Num^0 in Romance, in order to amalgamate with the plural morpheme in Num . In GB-theory, an inflectional morpheme typically attaches to a lexical head via affixation, after movement of the lexical stem (cf. fns. 10 and 11). Because of the Head Movement Constraint (cf. section 3.3.3.3.), this movement is generally interpreted as restricted to raising.¹⁵⁴ Thus, in affixation, an L -head raises to incorporate with an F -head (cf. section 2.4.1.1. on head-to-head *incorporation*). Figure (230) shows such a raising analysis for the pluralisation of French *pierre* ('stone'). The N^0 *pierre* raises to Num^0 and incorporates with the plural $-s$ morpheme found there. Valois (1991b) adopts a similar raising analysis for French nominals, as does Bernstein (1991) for nominals in Italian and Spanish, and Picallo (1991) for nominals in Catalan.

(230)



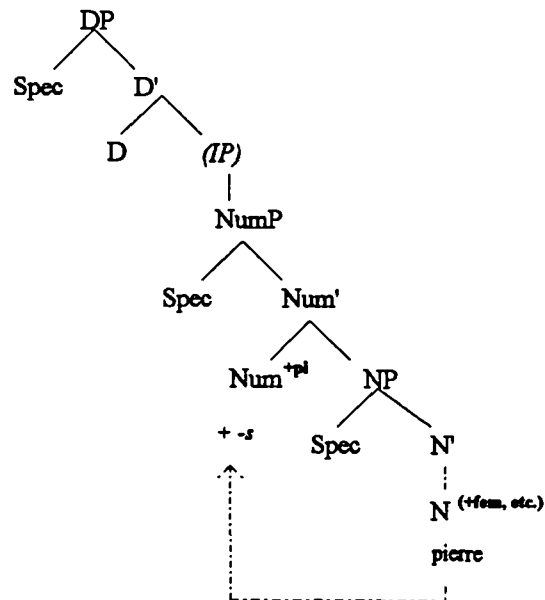
In (230), Infl of DP is not articulated except for *Num*. The [+pl] feature on *Num* triggers this F -category from its otherwise 'dormant' state (cf. section 2.3.1.). I generate *Num* (rather than *K*; recall section 4.1.) in a position immediately dominating NP for reasons which are discussed in section 4.4. below.

For simplification, in this section we will use the nominal representation in figure (230) in order to discuss gender and number on a head N. It is understood that the other ϕ -features of Agr, Poss, and Kase are collectively represented by the abstract complex I , and that the hierarchical arrangement of F -projections above N is a complex tier of functional categories.

¹⁵⁴Recall that the HMC is motivated by the ECP and by economy guidelines (cf. fn. 132).

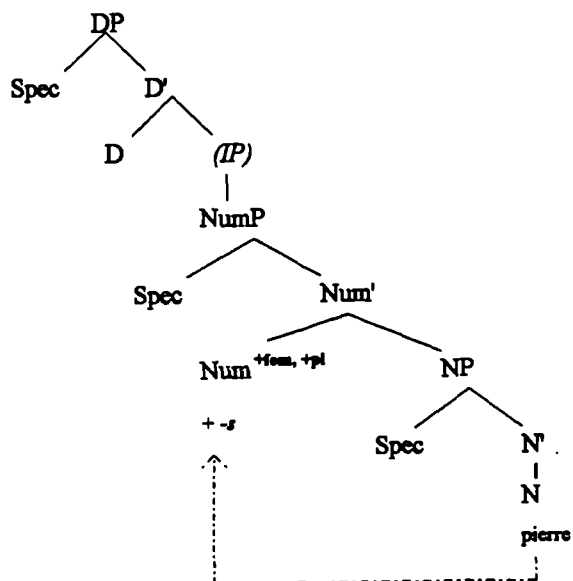
Returning now to the interaction of gender and number, the raising analysis in figure (230) captures the number-incorporation on a head N as proposed by the researchers just cited. But it does not address gender. We have argued in section 4.3.1. that the locus of gender across languages is N. Therefore, in our framework, figure (230) must be modified to (231):

(231)



However, Ritter's claim that gender and number are base-generated on functional *Num* in Romance would produce a representation such as figure (231').

(231')



In the following sections we will maintain our position that a gender feature is sourced exclusively on the lexical head N, but will suggest that a gender feature may *project* (i.e., 'copy') onto Num⁰ and D⁰, where feature-copying is induced. With this perspective, Num is the *recipient* of the gender feature from N. Let us begin with Ritter's proposal that [+fem] and [+pl] are both base-generated on a Num *F*-category in Romance. Ritter bases her analysis on irregular plurals in Romanian and Walloon, a Romance language spoken in Belgium. We will discuss the Romanian data first.

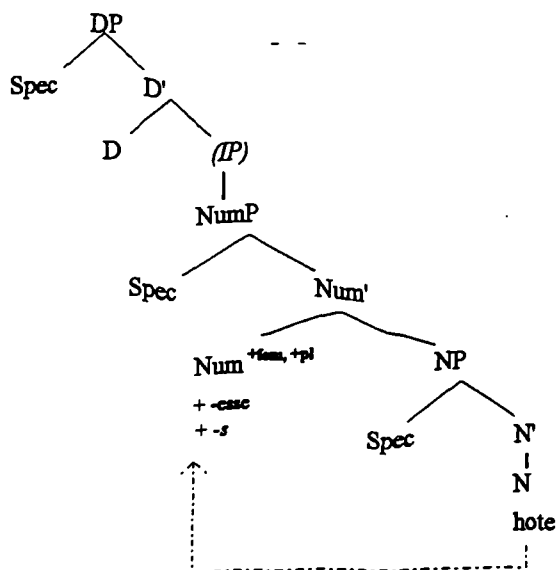
4.3.2.2. Gender in Romanian

In Romanian there exists a large class of 'neuter' nouns that appear in the unmarked (i.e., the 'default' *-fem* or *masculine*) form in the singular. However, a [+pl] feature for a neuter noun is restricted to cooccur with a [+fem] feature in this language (cf. Farkas 1990:539-542 on her *feature cooccurrence restriction*). Therefore, neuter nouns in the plural in Romanian always appear in the feminine plural form and trigger feminine plural agreement on modifying and predicative adjectives. This is shown in (232).

- (232) (a) un scaun confortabil e folositor
 a chair (m.sg.) comfortable (m.sg.) is useful (m.sg.)
 'a comfortable chair is useful'
- (b) niste scaune confortabile sînt folositoare
 some chair (f.pl.) comfortable (f.pl.) are useful (f.pl.)
 'some comfortable chairs are useful'

Ritter interprets the disparity in gender in (232) (a) and (232) (b) to mean that Num, not the noun stem, bears the gender specification of nouns in Romance languages. When the head N⁰ raises to Num⁰ to incorporate, it will acquire its gender at the same time it acquires a plural morpheme. (cf. figure (231)). But with this analysis we again encounter the difficulty of two potentially overt morphemes competing for realisation under a single node (recall our Hungarian example of figure (175)). Thus in (233x), the masculine French noun *hôte* ('host') raises to acquire both a feminine affix (*-esse*) and a plural affix (*-s*).

(233x)



Ritter does not mention this difficulty when she says that gender is not lexically attached to nouns in Romance.¹⁵⁵ In addition, if the gender of a plural N is not acquired until N^0 raises to Num^0 , then what of the gender of singular and suppletive forms in Romance? Singular and suppletive Ns would have no motivation to raise to Num^0 unless they needed to incorporate with a plural affix found in Num. Therefore we would predict that singular and suppletive Ns are genderless in Romance, which is clearly not the case. And if we say that gender occurs on Num only in the case of *plural* nouns, this is even more stipulative.

Let us consider a slightly different interpretation of the data in (232). Farkas claims that neuter nouns in Romanian are underspecified; i.e., that a 'neuter' noun in the lexicon lacks a gender feature. Consequently, the noun *scaun* in (232) (a), in the absence of a $[\pm\text{fem}]$ feature, triggers *masculine* (i.e., $[-\text{fem}]$) gender agreement on the modifying and predicative adjectives *confortabil* and *folositor*.¹⁵⁶ These so-called neuter nouns in the plural, however, due to a cooccurrence restriction with gender, induce feature-copying of the $[\text{+fem}]$ feature from N^0 in the presence of a $[\text{+pl}]$ feature on the Num head. As these two features must cooccur at all levels of representation, their joint presence on Num^0 derives the *feminine* plural marker *-e* at PF (cf. the masculine plural marker *-i* in *stati* ('states', m.pl.)). At the underlying level, number can not appear overtly on N, and so, due to the cooccurrence restriction, neither can gender.¹⁵⁷ Hence it is only at PF that there is evidence of both these features. It is at this level, therefore, that the gender specification of *scaune* becomes apparent. By the same reasoning, although *scaune* triggers gender and number agreement

¹⁵⁵Ritter (1993:800) observes in a footnote only that her analysis predicts that both gender and number marking will be realised on the same syntactic node.

¹⁵⁶Recall from section 4.3.1. that $[-\text{fem}]$ is the unmarked or 'default' gender form.

¹⁵⁷In section 4.3.2. we claimed that number is inflectional in Num at PF whilst gender is derivational on N at the base level.

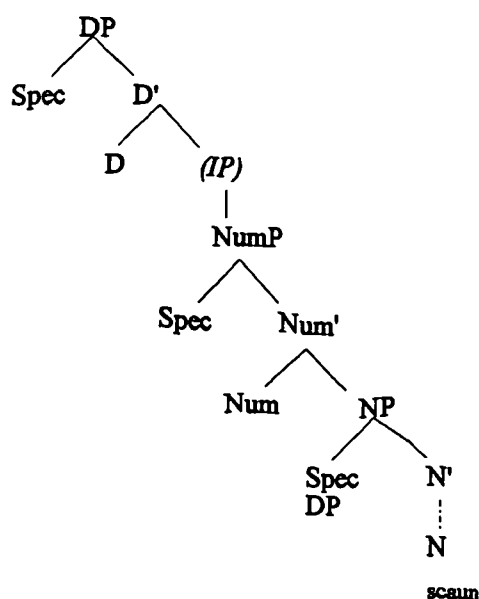
on the modifying and predicative adjectives *confortabile* and *folositoare* at all levels of representation, it is only at PF that these features are visible on A.¹⁵⁸ We now revise our representation of (232) (b) to (233) (b).

(233) (a) un scaun confortabil e folositor
 a chair comfortable is useful
 'a comforable chair is useful'

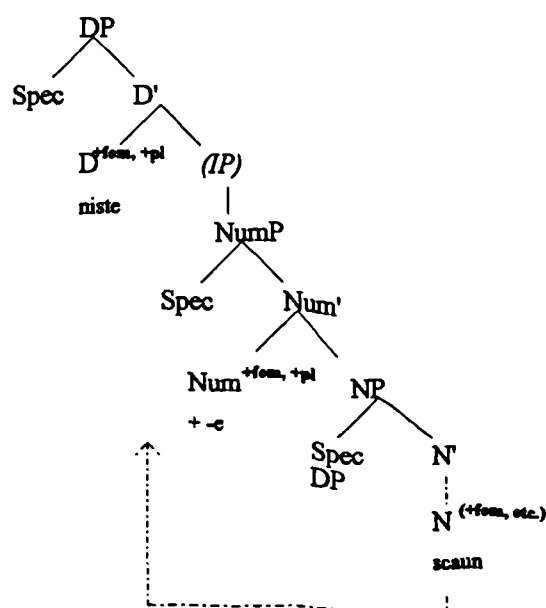
(b) niste scaun -e confortabil -e sint folositoare -e
 some chair +f.pl. comfortable +f.pl. are useful +f.pl.
 'some comfortable chairs are useful'

In (233) (b) the plural *-e* morphemes are analysed as occurring under (respective) Num. We see that *scaun*, occurring under N, can not itself show a gender morpheme because [+fem] is constrained to appear with [+pl], and [+pl] is only visible at the level of PF. The [+pl] feature on Num⁰, after inducing feature-copying of the [+fem] feature from N⁰, joins with this gender feature to form the feature-pair of [+fem] / [+pl] on Num⁰. These features together then determine the insertion of the feminine plural *-e* morpheme at PF. The [+fem] / [+pl] pair also projects onto functional D⁰, but as the indefinite plural determiner *niste* is invariable in Romanian, [+fem] is not evident on *niste* at PF (although [+pl] is). The singular and plural derivations of *scaun* are compared in figures (234) and (235). For purposes of consistency, in this section we show a raising analysis of N⁰ to Num⁰.

(234) Singular



(235) Plural



¹⁵⁸I am assuming that the As *confortabile* and *folositoare* take their own NumP projections.

We conclude from our revised analysis that irregular 'neuter nouns' in Romanian are actually feminine, and that, due to underspecification of gender in the singular, can not trigger agreement of modifying and predicative As in the singular. In the plural, however, these nouns are fully specified because of the restriction that number cooccur with gender on an N. Consequently, irregular plural nouns in Romanian project their [+fem] feature onto Num⁰ whereas the singular forms do not. It therefore follows that only irregular *plural* nouns trigger gender agreement on modifying and predicative As in this language.¹⁵⁹

Now let us turn to evidence from Walloon which Ritter claims reinforces her argument that gender together with the number specification is found on the functional *Num* head in Romance. We will agree with Ritter here, but argue that the *source* of the gender feature is always the head N.

4.3.2.3. Gender in Walloon

In Walloon, number marking never appears overtly *on* a head N (although a remnant orthographic *-s* appears on N in some dialects). Bernstein (1993a, 1993b) interprets this to mean that N does not raise to Num in Walloon, whilst it does in other Romance languages. Some of her examples are given in (236). The orthographic *-s* is crossed out (i.e., *s*) in order to indicate its absence at PF.

(236) (a)	on mâ	'an ache'	(cf. Fr. un <u>ma</u> l)
	dès mâs	'aches'	(cf. Fr. des <u>maux</u>)
(b)	dj'vâ	'horse'	(cf. Fr. <u>cheval</u>)
	dj'vâs	'horses'	(cf. Fr. <u>chevaux</u>)
(c)	on neûr oûy	'a black eye'	(cf. Fr. un <u>oeil</u> noir)
	dès neûr-z-oûy ¹⁶⁰	'black eyes'	(cf. Fr. des <u>yeux</u> noirs)

However, Walloon also has an overt feminine plural marker *-ès*, which occurs *before* N and only in the presence of an accompanying adjective. In Walloon, adjectives occur prenominally. Bernstein, following Morin (1986), argues that the *-ès* morpheme does not attach to the prenominal adjective as an agreement marker, as (237) might suggest.

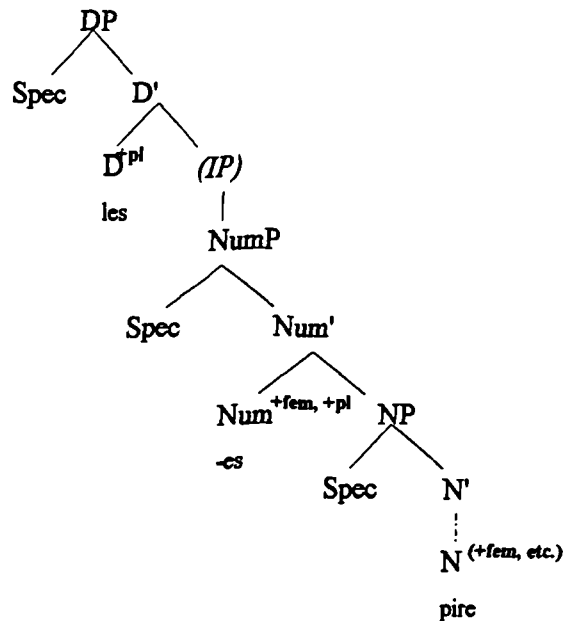
¹⁵⁹In the Romanian example I would say that the analysis is BE_{AP}[AP[un N⁰[scaun] A⁰[confortabil]] A⁰[folositor]] ⇒ un scaun confortabil e ('is') t folositor, with *folositor* the predicative A' and *confortabil* an attributive A⁰ to *scaun* (cf. section 2.4.2.). Note that the word order in Romanian supports a Subject Specifier analysis.

¹⁶⁰We will explain the prenominal *-z* in *dès neûr-z-oûy* in (243) below.

- (237) *lès gross ès pîre*
 the big -f.pl. stone f.pl.
 'the big stones'

Instead, she argues persuasively that *-ès* is an independent feminine plural marker in Num, preceding rather than attaching to the noun, as (238) shows. There is no movement of N^0 to Num^0 , and so the surface derivation is *lès gross ès pîre*.¹⁶¹

(238)



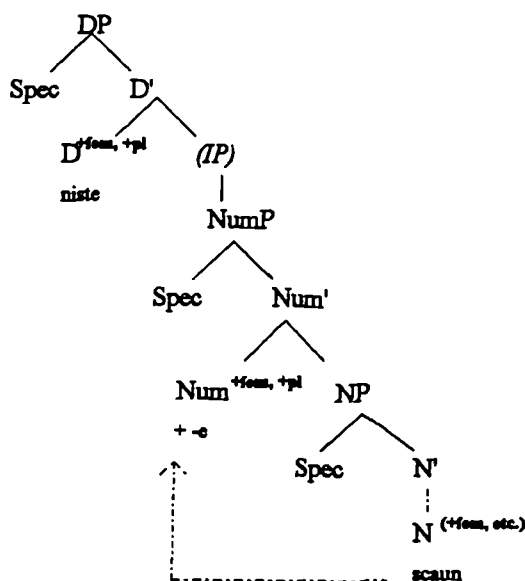
The A element *gross* is omitted for the moment in figure (238). Walloon nominals exhibit a marked Romance pattern of D-A-N rather than the usual sequence of D-N-A (cf. Fr. *des robes étroites*, 'tight dresses'). Therefore, in figure (238), in order to derive the surface string *lès gross ès pîre*, we will assume that *gross* is either an attributive A^0 adjoining to Num^0 (cf. section 2.4.2.), as in: $\text{DP}[\text{D}[\text{lès } \text{NumP}[\text{Num}'[\text{A}^0[\text{gross}] \text{Num}^0[\text{-ès}]] \text{NP}[\text{N}'[\text{pîre}]]]]]$, or a predicate A' (in an AP proposition) taking a DP subject of *lès -ès pîre*, with *Subject-Shift* (cf. section 2.4.1.1.) moving the Num' constituent constituent *-ès pîre* to the right of the A' *gross*: $\text{AP}[\text{DP}[\text{D}'[\text{lès } \text{NumP}[\text{Num}'[\text{t} \text{A}'[\text{gross}] \text{Num}'[\text{-ès } \text{NP}[\text{pîre}]]]]]]]$.

¹⁶¹For number marking on articles, Bernstein claims that a [+pl] feature on Num^0 raises to D^0 at LF.

In our framework a [+pl] feature on D^0 determines the Late Lexical Insertion of a plural article at PF. In Walloon, articles do not display gender, but in languages which do (cf. Spanish *ella* ('the'), *ellos* ('the', +pl.)) the same principle would apply; i.e., that a [+fem] feature raises from Num^0 to D^0 . In the case where only a [+fem] feature raises, the inserted article would be feminine singular (e.g., *la*); and where both a [+fem] and a [+pl] feature raise, the inserted article would be feminine plural, (e.g., *las*). In the case of masculine nouns, no gender feature raises and so the 'default' [-fem] form of an article would be inserted at PF (e.g., *el*). If only a [+pl] feature raises to D^0 , then the inserted article is masculine plural (e.g., *los*).

Leaving aside the question of the A element *gross*, let us consider the projection of syntactic features onto *F*-categories. In figure (238) we suggest that a feature on a functional head may copy to another functional category (i.e., [+pl]) and that a feature on a lexical head may copy selectively to functional categories (i.e., [+fem]). Let us suppose that the [+pl] feature raises from Num⁰ to D⁰, and that the [+fem] feature raises from N⁰ to Num⁰. Nothing in principle prevents feature-sharing between different *F*-heads, or requires that all *F*-heads share precisely the same features. What we would expect is that, where it occurs, feature-sharing is motivated, and that shared features are PF-realised as distinct elements. In (238) the raising of the [+pl] feature from Num⁰ to D⁰ is triggered by the characteristic requirement in Romance for a D⁰ morpheme to agree in number with the Num⁰ morpheme (i.e., [±pl]). *Gender* agreement of plural determiners seems to be less of a requirement in Romance. Bernstein notes that in Walloon, there is no gender alternation on definite articles in the plural. In Romanian, determiners normally do inflect for gender, but we saw in our example of figure (235) that invariable *niste* ('some') does not. We repeat figure (235) here as (239):

(239)



However, because of Farkas' *feature cooccurrence restriction* for [+fem] and [+pl], we are postulating that gender is present on D⁰ in figure (239) but covert. We will therefore posit that whilst the [+fem] feature of N⁰ may raise to both Num⁰ and D⁰ in Romanian, it raises *only to Num⁰ in Walloon*. Variable patterns of feature-raising to *F*-heads are exhibited in other Romance languages as well: cf. French *les filles* ('the girls'), where only the [+pl] feature of Num⁰ raises to D⁰; and Spanish *las muchachas* ('the girls'), where [+fem] raises from N⁰ to Num⁰, and then both [+fem] and [+pl] raise to D⁰. We will return to this observation with our *Variable Feature-Raising* hypothesis in sections 4.3.3. and 4.3.3.1.

Now let us examine some more data from Walloon in order to develop our notion of feature-raising from N to Num.¹⁶² Figure (240) shows the alternation in Walloon between masculine *-s* and feminine *-ès* in Num. Our hypothesis is that in the case of an N positively specified for gender, [+fem] copies to Num, as in (240) (b). The motivation for this is the language-specific requirement for plural markers to agree in gender with the head N, as we witnessed in Romanian. In the case of an N negatively specified for gender (i.e., [-fem]), no gender feature copies to Num, as in (240) (a).

- (240) (a) lès bê -s vwèzin
 the pretty +pl neighbour
 'the pretty neighbours'
- (b) lès bèl -ès vwèzine
 the pretty +f.pl. neighbour -f.
 'the pretty neighbours'

Bernstein proposes that number is 'strong' in Walloon, and so must be spelled out at PF (i.e., be 'visible').¹⁶³ At the same time, gender is 'weak'. So we might expect that whilst number marking is spelled out, gender would not be. However, the data in (240) (b) contradict this; gender appears to be overt on both the plural marker and the head N in *lès bèl ès vwèzine*. Bernstein suggests that a weak gender morpheme can still appear at PF in the context of an adjacent number marker: cf. *lès bel ès vwèzine*. But this is contrary to the notion of 'weak' features, which must be invisible at PF in order to be legitimate (cf. Chomsky 1992:43). Therefore, we will attempt a different view of the data and assume that gender and number are both 'strong'. The evidence for this is that they both appear overtly at PF, and we need not stipulate that a weak feature can appear only in certain contexts. In (240) (b), the number feature copies from Num⁰ to D⁰, deriving an overt plural marker and an overt plural article at PF, whilst the gender feature copies from N⁰ to Num⁰, deriving a *feminine* plural marker. And at base-level, [+fem] on N⁰ determines insertion of the feminine lexeme *vwèzine*. The relevant morphemes are shown in our revised analysis (241) (b).

- (241) (a) lès bê -s -s vwèzin
 the-pl. pretty +pl +pl neighbour
 'the pretty neighbours'
- (b) lès bèl (-ès) -ès vwèzin -e
 the-pl. pretty +f.pl. +f.pl. neighbour (f.)
 'the pretty neighbours'

¹⁶²In addition to the arguments given in section 4.3.1., I am contesting the base-generation of a gender feature on Num⁰ on the basis of the difference between substantive and functional categories (cf. section 4.3.3.1.).

¹⁶³Cf. Chomsky 1992:43 on the term SPELL OUT.

In (241) (b), we see that, as in our Romanian example of (233) (b), the [+fem] and [+pl] feature on Num⁰ triggers feminine plural agreement on the modifier *bè(l)ès*. However, the *-ès* on *bèl* deletes at PF.¹⁶⁴ Thus we derive a surface string of *lès bèl -ès vwèzine*. In (241) (a), in the absence of a [+fem] feature on the N *vwèzin*, the A *bê* appears in its 'default' masculine form. Like its feminine counterpart, the *-s* marker on *bê* deletes at PF, deriving the surface structure *lès bê -s vwèzin*.

However, we haven't yet mentioned why the plural marker can not occur in Num without a prenominal adjective, as (242) shows.

(242) (a)	*lès	-s	fèy	(a')	lès	fèy
	the-pl.	+pl	girl		the-pl.	girl
	'the girls'				'the girls'	

In (242) (a'), the [+pl] feature appears on the determiner (*lès*) but not on the N (*fèy*). Bernstein attributes the ungrammaticality of (242) (a) to the fact that two plural markers can not appear in sequence without an overt lexeme to morphologically support the *-s* marker to the immediate left of *fèy*. In such instances the definite article *lès* would be unlicensed, as there would be three functional categories in a string without lexical material to separate them: cf. **lè-s -s fèy* (D-Num-Num).¹⁶⁵

Following Bernstein's insights, we can now also interpret the prenominal *-z* in the first example of (236) (c); i.e., *dès neûr -z-ouÿ*. In Walloon the plural *-s* marker is realised as [Ø] before consonants (i.e., as silent in *lès bê -s vwèzin*), and as [z] before an initial vowel (i.e., as *z* in *neûr -z-ouÿ*). In Ns beginning with a vowel, it happens that the orthography of the plural marker mirrors the phonology: cf. *dès neûr -z-ouÿ* ('black eyes'); *tél -z-ovrîs* ('such workers'), *vét -z-omes* ('twenty men'). (243) shows the analysis of *dès neûr -z-ouÿ*, with the plural marker on *neûr* deleted due to its phonological redundancy.

(243)	dès	neûr	(-z)	-z	-ouÿ
	a-pl.	black	+pl	+pl	eye
		'black eyes'			

¹⁶⁴Bernstein suggests that [+fem] and [+pl] on *nominal* Num are not spelt out at PF, as the morpheme would be adjacent to an identical *-ès* on the A preceding it. However, I should think that the plural morpheme belonging to N is more likely to be retained than the plural morpheme belonging to a modifying or predicative A preceding it. In either case, the point is that both can not be present at PF, as only one can be phonetically realised.

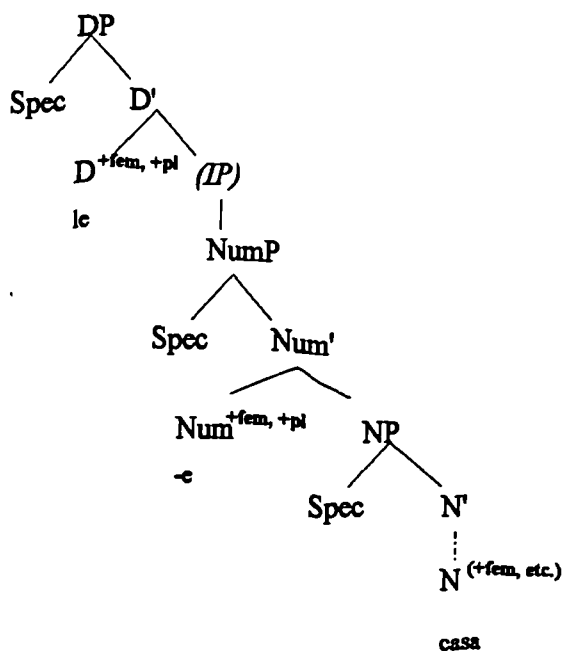
¹⁶⁵Licensing of the definite article only in the presence of an adjacent lexical element is due to Chomsky's (1986a:98) notion of *Full Interpretation* (FI), whereby every element at the interface levels of LF and PF must receive an appropriate interpretation. Without an adjacent lexical complement to D⁰ in **lè-s -s fèy*, the element in D can not receive a meaningful interpretation.

4.3.3. The Variable Feature-Raising Hypothesis

Figures (244) (a) and (b) below show parallel illustrations of the feature-sharing between Num⁰ and D⁰ in Romanian and Walloon. For these languages, [+fem] is shared by N⁰ and Num⁰, since a number marker must agree with the gender of the head N. [+fem] therefore raises to Num⁰ and coexists there with the [+pl] feature. In Hebrew, we will see that this same gender agreement of the number marker holds in the case of regular nouns, whilst this requirement is relaxed in the case of irregular nouns.

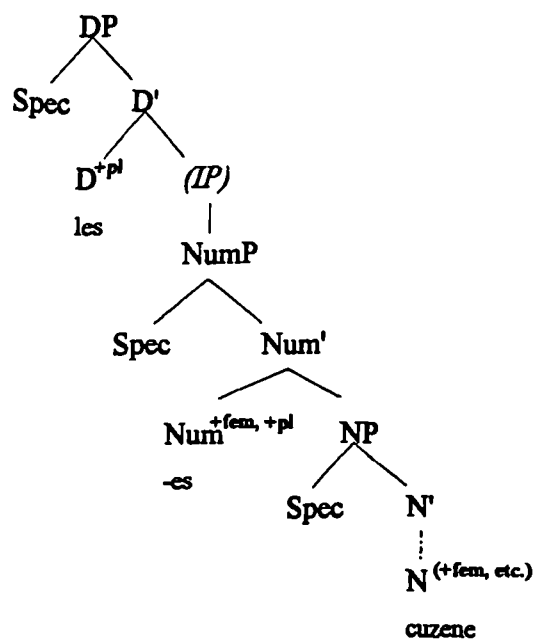
(244) (a) Romanian¹⁶⁶

casa e le
house +f.pl. the (f.pl.)
'the houses'



(b) Walloon¹⁶⁷

lès pitit ès cuzène
the (pl.) small f.pl cousin
'the small cousins'



Concerning feature-raising to D⁰, this is variable. In Romanian where articles agree in gender and number with N, [+fem] and [+pl] raise to D⁰.¹⁶⁸ In Walloon, where

¹⁶⁶In Romanian definite articles are suffixes on N; in this example the derivation is *casa-e-le* (house-f.pl.-the (f.pl.); 'the houses'). In a raising analysis, positioning of the definite article to the right of *cas(a)e* is achieved by N-movement to D⁰. At PF the final *-a* on *casa* disappears before the plural *-e* affix, deriving *casele*.

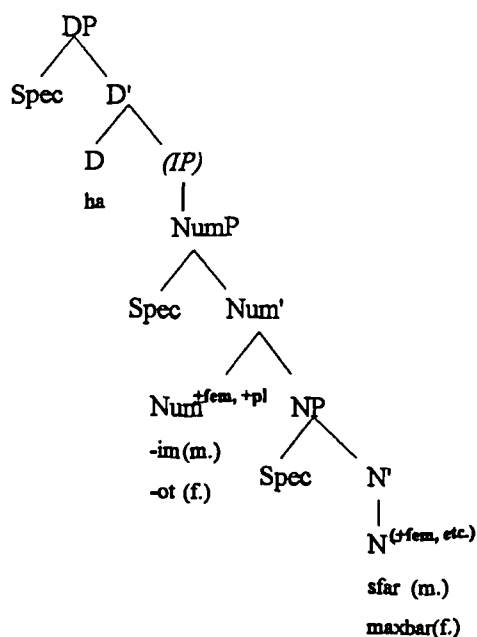
¹⁶⁷Recall that in Walloon, the *-ès* morpheme in Num can not appear without intermediate lexical material between D and Num, as in *lès pitit -ès cuzène* ('the small cousins').

¹⁶⁸In Romanian, this requirement for plural nouns is perhaps motivated by the feature co-occurrence restriction of [+fem] and [+pl]; in any case, the [+fem] gender feature projects to D⁰ for both singular and plural nouns (cf. *o casa*; 'a (f.) house (f.)').

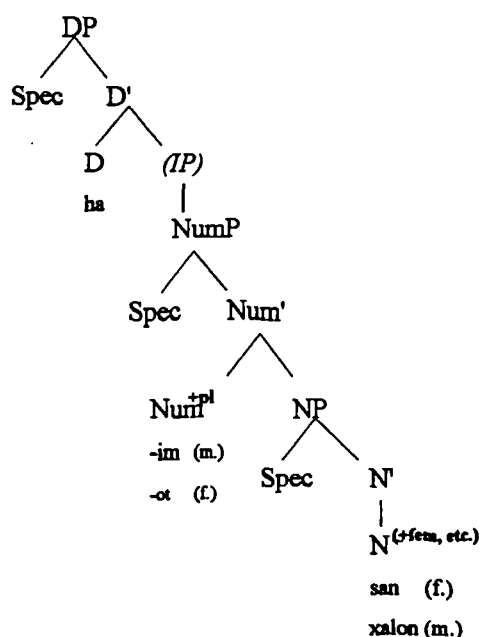
articles agree only in number, [+pl] raises to D^0 . And in Hebrew, where articles do not inflect, neither [+fem] nor [+pl] raises to D^0 .

Feature-raising is variable even within a single language. Figure (246) shows regular nouns in Hebrew which exhibit gender copying to Num^0 , and irregular nouns which exhibit no gender copying.

(245) (a) Gender projected to Num
(regular nouns in Hebrew)



(b) No Gender projected to Num
(irregular nouns in Hebrew)



In (246) (a), the [\pm fem] features on the Ns *sfar* and *maxbar* raise to Num, so that the PF derivations are *sfar-im* ('teacher' (m.) - m.pl.) and *maxbar-ot* ('notebook' (f.) -f.pl.), with gender agreement on the plural markers. In (246) (b), the [\pm fem] feature does not raise to Num, deriving *san-im* ('year' (f.) - m.pl.) and *xalon-ot* ('window'(m.) - f.pl.), clearly without gender agreement on the plural marker. With no gender feature copied to Num in (246) (b), the insertion of a plural morpheme at PF is purely arbitrary, as we observed in section 4.3.1. (c).

From the gender and number data in figures (244) - (245), let us posit a *Variable Feature-Raising Hypothesis* across languages, whereby a syntactic feature on a head X^0 (lexical L^0 or functional F^0) may or may not copy to an F^0 category in the syntax. We have claimed in section 4.3.2.3. that no theoretic principle prevents feature-sharing amongst different heads, nor makes the copying of features obligatory from L^0 to F^0 or from F^0 to F^0 . With no motivation to raise, presumably a feature will remain inert on an L -head or on an F -head. These notions are formalised in (246).

(246) *Variable Feature-Raising Hypothesis*

A syntactic feature originating on an L^0 or F^0 head may raise to one or more F -categories in the syntax, according to language-specific requirements.

Language-specific feature-sharing may be particular to a language family. For example, in Romance a [+pl] feature typically raises from Num^0 to D^0 , whereas it remains inert on Num^0 in Semitic: cf. French *la pierre* ('the stone') \Rightarrow *les pierres* ('the stones'), Walloon *lu pîre* ('the stone') \Rightarrow *lès gross ès pîre* ('the big stones'); and Hebrew *ha yelad* ('the girl') \Rightarrow *ha yelad-ot* ('the girls'), Arabic *al bint* ('the girl') \Rightarrow *al banaat* ('the girls'). The gender feature in Romance and in Semitic seems to be more head-specific; where an N^0 often requires its D^0 to agree in number, it may or may not make the same requirement for gender (cf. French *les* (m./ f. pl.), Walloon *lès* (m./f. pl.); and Spanish *los* (m.pl.) and *las* (f.pl.), and Portuguese *os* (m.pl.) and *as* (f.pl.). And we have seen that some but not all N^0 trigger their Num^0 elements to agree in gender: in Romanian [+fem] projects onto Num^0 only in the case of a [+pl] feature in Num, which induces feature-copying of the gender feature from N (cf. *scaun* (f.) *-e* (f.pl.); 'chairs'); in Walloon [+fem] projects onto Num^0 only in the case of a prenominal A, which licenses the appearance of the overt number marker at PF (cf. *lès pitit ès cuzène*; 'the small cousins (f.)'); and in Hebrew [+fem] raises to Num^0 only in the case of regular plural nouns, which require a gender-match on Num (cf. regular *sfar* (m.) *-im* (m.pl.); 'books' vs. irregular *san* (f.) *-im* (m.pl.); 'years').

The above examples display a wide range of variable feature-sharing for gender across languages. For this particular ϕ -feature of the DP, the *Variable Feature-Raising* hypothesis is perhaps a step towards satisfactorily addressing gender in nominals.

4.3.3.1. Substantive vs. functional categories and gender

Now let us examine why it is an unsatisfactory proposal that a gender feature could be somehow 'inherent' to a Num head, as Ritter suggests is the case in Romance. Firstly, we would have to assume that plural nouns do not acquire their gender feature until their Num morphemes are inserted at PF. This is contrary to what we might expect the purpose of features to be in the lexicon of open-class elements (i.e., to determine the insertion of a unique lexeme at underlying level). Secondly, in a language such as Walloon, in which Bernstein claims there is no N-raising, a singular N^0 would have no means of acquiring the gender feature in Num^0 . But yet there are gender-marked lexemes that occur in the singular without raising, such as *vwèzin* / *vwèzine* (m./f. 'neighbour') and *cuzin* / *cuzène* (m./f. 'cousin'). Ritter suggests that such pairs can be handled by

lexical listing; our proposal is that *all* lexemes should be treated this way.

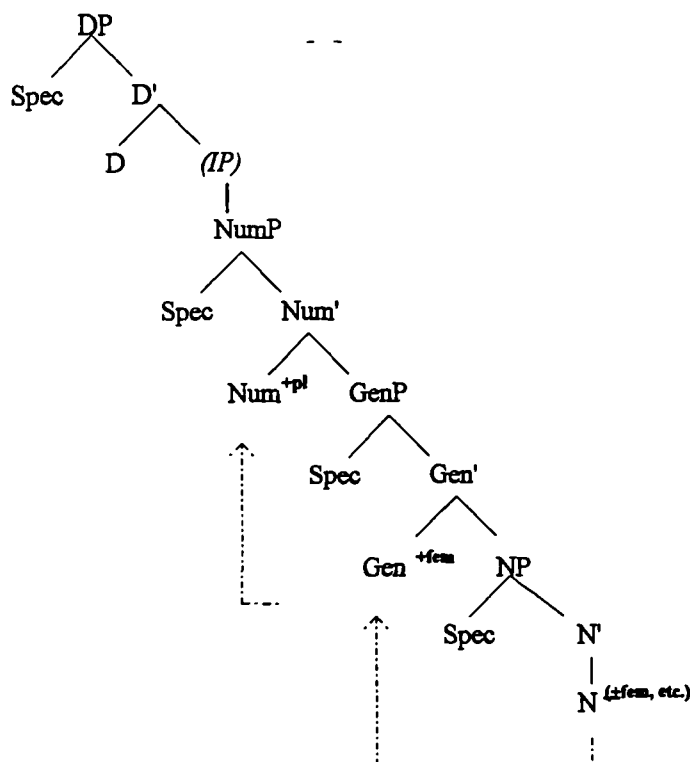
One way of addressing gender on plural morphemes is to consider the origin of the plural morpheme in the first place. We have claimed throughout that lexical categories, being θ -associated, are 'substantive' (i.e., $\pm N$ or $\pm V$) categories and that functional categories are not, that *F*-heads are generally dependent on an adjacent lexical head (cf. Abney 1987:65). [+pl] is base-generated in a *Num* head and is ancillary to the N head. Therefore, in my view, positing that a gender feature such as [+fem] is base-generated on Num as well is incompatible with the notion that functional categories are themselves ancillary to lexical categories. Logically it is the lexical categories that originate 'primary' syntactic features such as *gender* at the base-level, whilst it is the functional categories that house the 'secondary' features such as those realising plurality, deixis, Case, etc. If we claim that [+fem] is base-generated on *Num* we are attributing to an ancillary functional category lexical status. This violates the spirit of θ -theory, under which only lexical categories are arguments.

Furthermore, it is a basic precept of GB-theory that only arguments are Case-marked. *Case* is one of the ϕ -features we cited in section 3.1. along, with *person*, *number*, and *gender*. If only arguments are Case-marked, it follows that only arguments are person-marked, number-marked, and gender-marked. In other words, that only the lexical categories N, V, A, P carry ϕ -features. If the derivational gender feature is sourced on N, and the other inflectional ϕ -features are found in independent *F*-heads above this lexeme, the principle of endocentricity (i.e., proper-headedness) will prohibit the base-generation of more than one ϕ -feature on any *F*-head. Hence a gender feature can not be base-generated on Num⁰ at the same time as a number feature; it must raise to this position from N⁰.

4.3.4. Gender *not* as an independent *F*-category of DP

In this last section on gender we refute the hypothesis that Gen is an independent *F*-category in the functional hierarchy of DP. Picallo (1991:280-2) supposes that *Gen* along with *Num* should be a category of the noun phrase, analogous to the other functional categories of DP that we have established in this chapter. However, the Hebrew data we have examined challenges this position. Figure (247) illustrates the functional categories immediately closest to NP in the DP, assuming a *GenP* category. In a raising analysis such as Picallo's, the hierarchical arrangement of Num-Gen-N derives a surface nominal by the movement of N⁰ to Gen⁰ for incorporation, and the subsequent movement of the complex [N⁰ Gen⁰] to Num⁰ for incorporation.

(247)

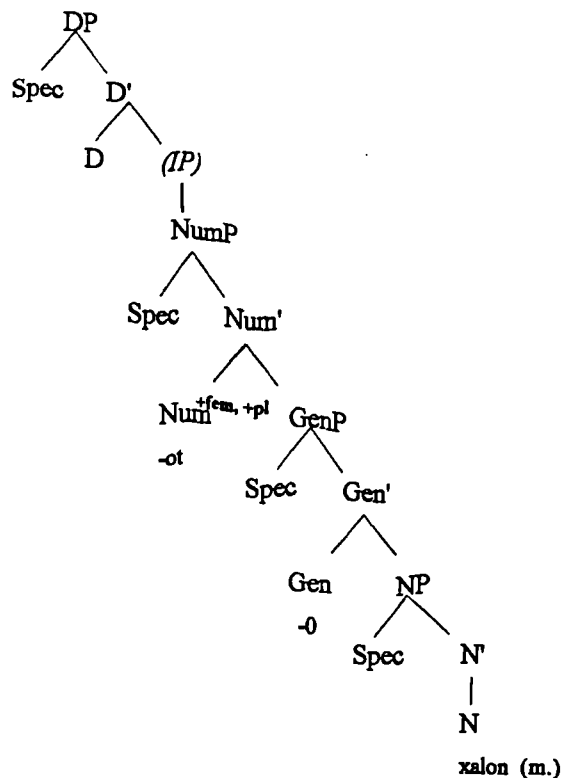


However, if we adopt the structure in (247), we can not analyse our Hebrew data without encountering a difficulty. Even without a *Variable Feature-Raising* hypothesis, the Gen category would have to inherit its gender feature from the N head, as a gender specification is a means of distinguishing amongst N heads. But the Hebrew data for irregular nouns show disparate features on the *L*-head and the *F*-heads. Some sample data are repeated in (248).

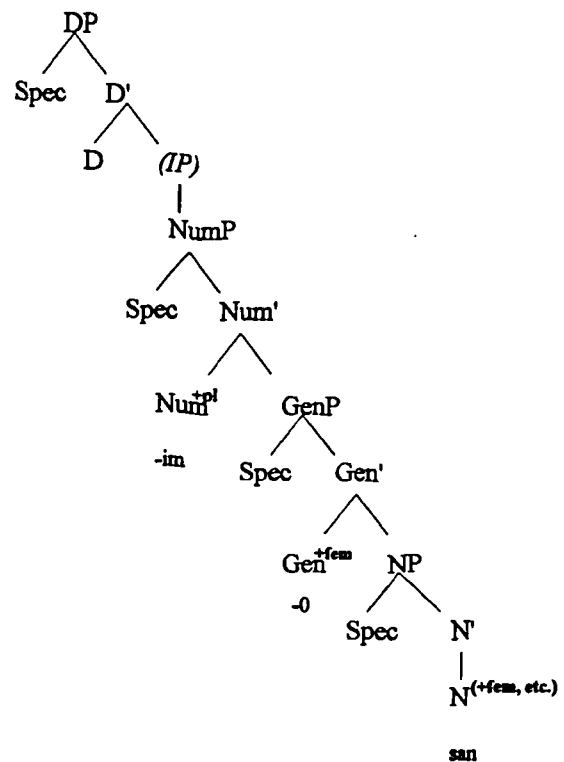
- | | | | |
|------------------------|------------|---------------------|------------|
| (248) (a) <i>xalon</i> | <i>-ot</i> | (a') * <i>xalon</i> | <i>-im</i> |
| window (m.) | (f.pl.) | window (m.) | (m.pl.) |
| (b) <i>san</i> | <i>-im</i> | (b') * <i>san</i> | <i>-ot</i> |
| year (f.) | (m.pl.) | year (f.) | (f.pl.) |

Applying a GenP analysis to the grammatical strings, we get a representation like that in figure (249).

(249) (a) *xalon* -ot
window (m.) (f.pl.)



(b) *san* -im
(f.) (m.pl.)



Ritter (1993:800) notes that in Hebrew, gender marking is either not overt in the presence of Num, or deletes in the presence of Num (i.e., when a plural affix is added).¹⁶⁹ We will therefore postulate a $-\emptyset$ morpheme for gender in (249) (a) and (b). In (249) (a) the head N *xalon* does not copy its gender feature to Gen because the gender value of masculine *xalon* is [-fem], or the *absence* of a gender value. And we have suggested in section 4.3.3. that where a gender feature does not copy to Num in Hebrew, the insertion of a [\pm fem] morpheme in Num is purely arbitrary. Hence a [+fem] feature randomly appears on Num in (249) (a). But if we say that [+fem] appears on Num only randomly, why doesn't it appear on Gen at the same time? It would be unlikely that a [+fem] feature could appear on Num and *not* appear on Gen. Furthermore, we would predict that, where a particular feature (e.g., a gender feature) appears on the *F*-categories of an N head, the same feature (e.g., [+fem]) should appear on *all* of the *F*-categories of the N head. But this would entail in (249) (a) that a [+fem] feature appears on Gen in the case of a *masculine* noun: cf. *xalon* (m.) $-\emptyset$ (f.) -ot (f.pl.).

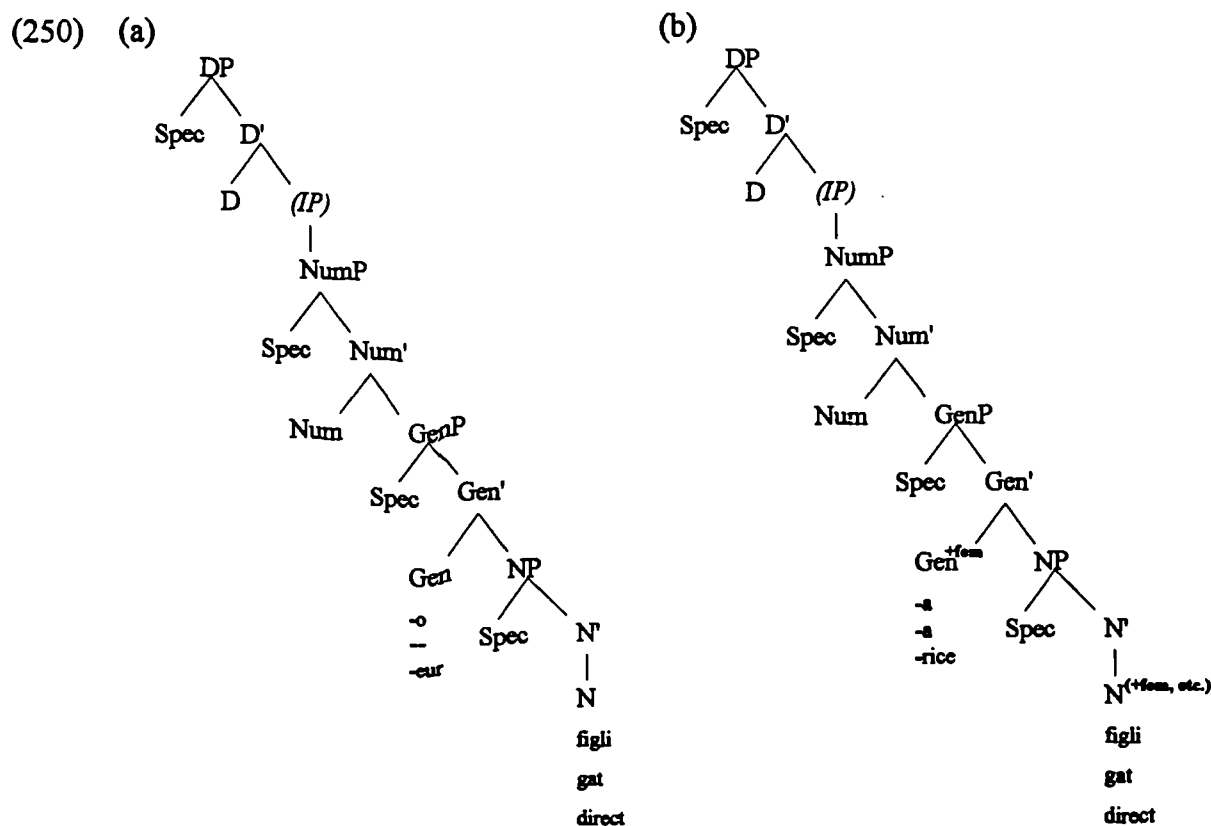
¹⁶⁹Recall that a plural non such as *txun-i(t)-ot* ('feature'-f.-f.pl.) attests to the order of N-Gen-Num. In this case the gender suffix reduces rather than deletes in the presence of Num (i.e., the *t* drops from *-it* under affixation to *-ot*. Note that I am claiming that the middle suffix (*-i(t)*) is part of the lexical listing of *txunit*, whilst *-ot* is inflectional.

Similarly, in (249) (b), a positive value for the gender feature on *san* means that a [+fem] feature raises to Gen⁰. This [+fem] does not raise to Num⁰ as well in the case of irregular *san*, but this is a licit possibility in our *Variable Feature-Raising* hypothesis, where a feature need only optionally raise to various *F*-heads. In any case, Gen⁰ does seem to be a somewhat redundant category in figure (249), as least for the Hebrew data we are presently examining.

Picallo bases her proposal for GenP on data from Catalan, where a [±fem] alternation is more localised in a single gender morpheme. In the next section we will argue that GenP is uneconomical even for Romance languages where a gender affix visibly alternates.

4.3.4.1. GenP as an uneconomical derivation

For nouns such as Italian *figlio* ('son') and *figlia* ('daughter'); Catalan *gat* ('cat' m.) and *gata* ('cat' f.); and French *directeur* ('manager' m.) and *directrice* ('manager' f.), let us probe a GenP analysis in figure (250), with [-fem] the gender feature in (250) (a) and [+fem] the gender feature in (250) (b).



In (250) (a), the Italian N stem *figli* takes an *-o* affix in the absence of a gender feature (i.e., in the masculine), whilst Catalan *gat* takes no suffix and French *direct* takes the

affix *-rice*. For the feminine counterpart of the same nouns in (250) (b), *figli* takes an *-a* affix in the feminine, *gat* takes *-a*, and *direct* takes *-rice*.

One reason to reject a *GenP* analysis such as (250) is the unlikelihood of the *partial* acquisition of lexemes in the mental lexicon, prior to the affixation of gender morphemes (i.e., the acquisition of *figli* or *gat* or *direct* vs. the full forms *figlio* or *figlia*; *directeur* or *directrice*; *gat_* or *gata*). In addition, there is the obvious fact that these nouns have biological referents; yet there are many nouns in Romance that do not have a logical gender alternation because they have inanimate referents, and many others that have biological referents with no appropriate gender alternation. Of these, Harris (1991:31-41) cites numerous examples from Spanish, a few of which are repeated in (251).

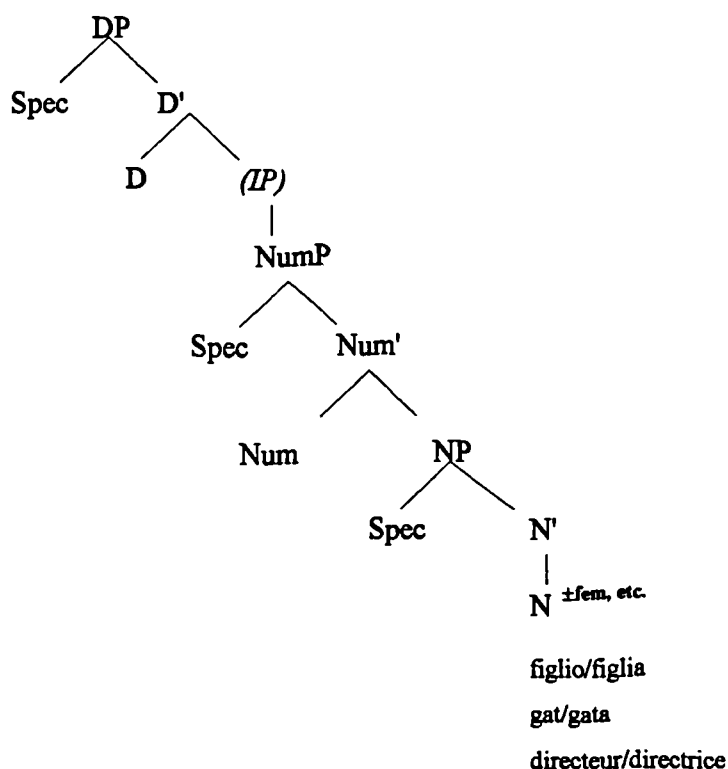
(251) (a) sol ('sun', m. only)	*sola
col ('cabbage', f. only)	*cola
mapa ('map', m. only)	*mapa
día ('day', m. only)	*dío
nao ('ship', m. only)	*naa
espíritu ('spirit', m. only)	*espirita
bikini ('bikini', m. only)	*bikina
metópoli ('metropolis', f. only)	*metópolo
telegrama ('telegram', f. only)	*telegramo
(b) persona ('person', m. only)	*persono
turista ('tourist', f. only)	*turisto
soprano ('soprano', m. only)	*soprana
pirata ('pirate', f. only)	*pirato
criatura ('baby', m. only)	*criaturó
hèroe ('hero', m. only)	*hèroa
prole ('progeny', f. only)	*prolo
mártir ('martyr', m. or f.)	*mártiro/*mártira
amante ('lover', m. or .f)	*amanta/*amanto
jirafa ('giraffe', f. only)	*jirafo

Moreover, there is always the problem of visualising abstract inflectional gender morphemes on suppletive forms such as Arabic *bint* ('girl' f.) and *walad* ('boy' m.); Spanish *hombre* ('man' m.) and *mujer* ('woman' f.); English *stallion* (m.) and *mare* (f.), etc., where the nouns have biological referents but this is not reflected in the forms of the lexemes.¹⁷⁰

¹⁷⁰The canonical feminine affixes for nouns in these languages are *-ah*, *-a*, and *-ess*, respectively.

But most importantly, a structure such as (250) is simply uneconomical. From the more minimal representation of (252) below, we can argue that we do not *need* a Gen functional category; derivational gender on an N head in the lexicon preempts inflectional gender on a Gen head in the syntax. Consequently, it is redundant to project an additional functional XP to contain a gender morpheme. Picallo, perhaps prematurely, suggests that both gender and number are inflectional and therefore that, due to the "functional XP hypothesis", Gen and Num should head their own XPs.¹⁷¹ However, in addition to the substantial arguments we have put forward so far for gender as a derivational phenomenon, there is the consideration that unnecessary projections violate the *Least Effort Condition* of economy (Chomsky 1988:8-9), which prescribes that shorter derivations be chosen over longer ones. Figure (252) shows a shorter derivation than (250).

(252)



For the above reasons we reject the notion of an inflectional GenP in the DP, and, with a *gender-as-feature* analysis, maintain that gender is integral to the lexical listing of nouns at the base level.

¹⁷¹The 'functional XP hypothesis' is Picallo's (1991:280) term for the multi-categorial framework we have adopted throughout this thesis, where inflectional elements head their own projections in the same way that lexical elements do.

4.4. *Number* in the DP

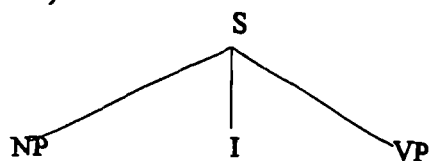
The last of the ϕ -features, *Number*, was introduced in Chapter 1 as the category *Num*, a derivative of Bloomfield's (1933:203-4) early *numerative* category, which later became Jackendoff's (1977:131-3) $[+Num]$ feature for numerals. NumP, like DP, has appeared with greater frequency in the literature of recent years (cf. Cinque 1994; Bernstein 1993a, 1993b; Ritter 1991; 1992, 1993; Picallo 1991; Rouveret 1991; Cardinaletti and Giusti 1991; Tonoike 1991; Valois 1991a, 1991b, 1991c; etc.). As we have seen with our analyses of Romanian, Walloon, and Hebrew nominals in figures (244) - (246), Num in the DP raises some interesting issues about the extent of feature-copying from lexical heads to functional heads. Num may inherit features other than $[+pl]$ from an *L*-head (e.g., $[+fem]$), and Num may project its own $[+pl]$ feature to another *F*-head (e.g., D^0). In Chapter 5 we discuss Num as the locus of the plural affix in the DP, as well as the site of cardinal and ordinal numbers, quantifiers, and degree and measure phrases.

4.4.1. Need for Num

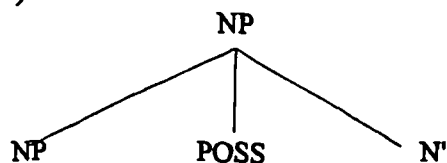
Num is the last ϕ -feature that we need to justify as a category within DP. We have suggested that, like the other *F*-categories of DP such as *D*, *Agr*, *Poss*, and *K*, *Num* is inflectional (i.e., inserted at PF). In section 4.4.2. we will examine the position of Num in a fully articulated DP. But in order to distinguish Num from *D*, and to justify its existence, we need to first review some of our observations regarding the category *D*.

We recall from section 3.1. that Abney proposes that the head *D* of the noun phrase is parallel to the head *I* of the clause, and that *D* takes NP as its complement where *I* takes VP as its complement. His proposal is based on the obvious asymmetry in earlier generative analyses of S and NP, where the clausal node was exocentric, as figures (253) and (254) show.

(253)

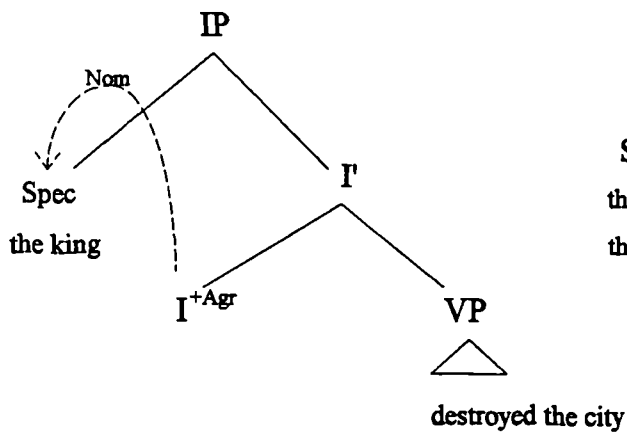


(254)

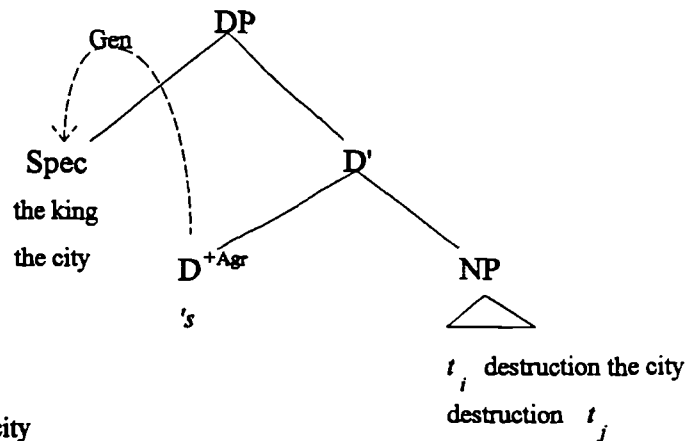


We argued in section 3.3.2.1. that Abney's assimilation of D to I is perhaps premature, and that an assimilation of D to-C is theoretically more viable.¹⁷² Abney's conceptualisation of parallel IP and DP is repeated here in figures (255) and (256).

(255)

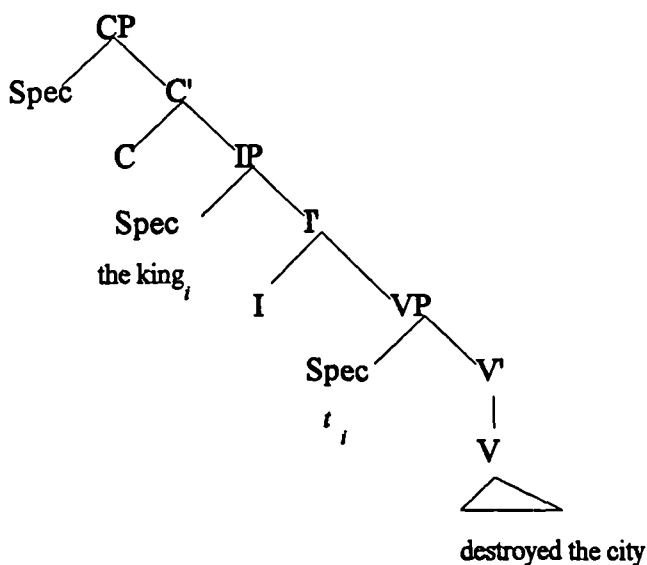


(256)

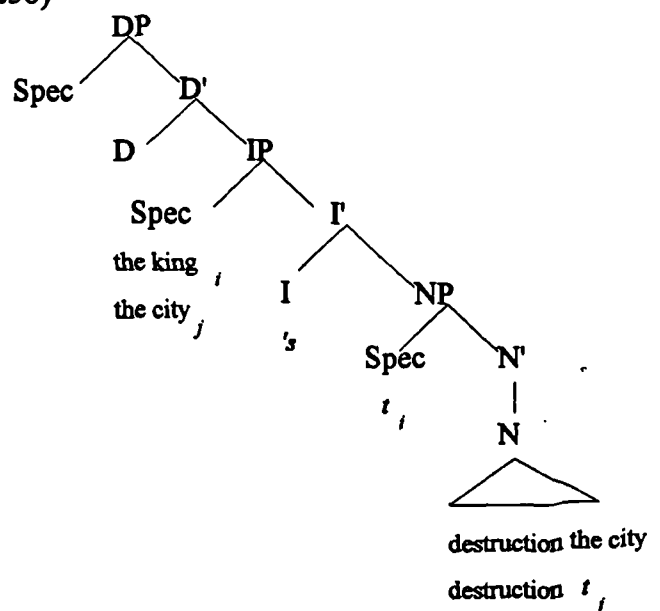


Our revised conceptualisation of parallel CP and DP is shown in figures (257) - (258).¹⁷³ Recall that in these analyses, both C and D take IP (i.e., an abstract composite) as their complement.

(257)



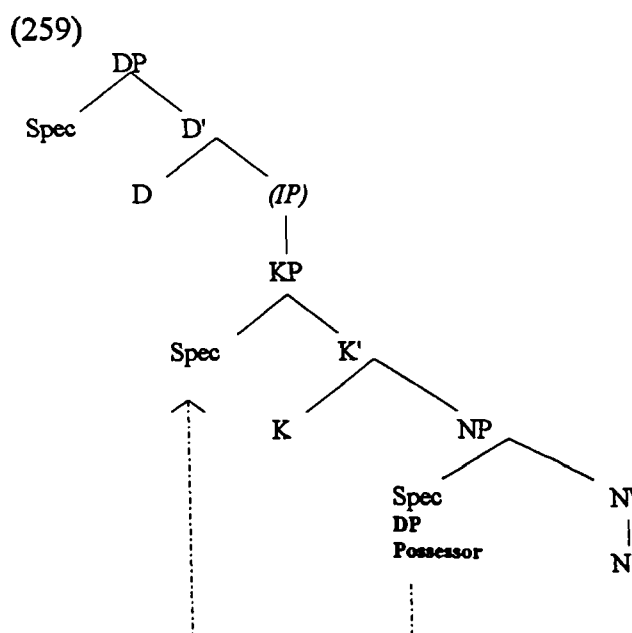
(258)



¹⁷²For this notion I again refer to Szabolcsi (1983:90, 1987:170-1). See Chapter 4 for my own extensive development of this concept.

¹⁷³In figure (256), we note in passing that a DP such as $DP[the\ king\ D['s\ NP[t\ N[destruction\ the\ city]]]]$ where a subject nominal raises to the [Spec,DP] position is different from $DP[the\ city\ D['s\ NP[e\ N[destruction\ t]]]]$, where an object nominal raises to [Spec,DP] and is genitived.

Abney's DP-Analysis of (256) reflects the fact that, due to the alternation of determiners with *Poss 's* in English, determiner morphemes and possessive morphemes are mutually exclusive from the same D node in this language (cf. *the king's destruction of the city* and **the king's the destruction of the city*). But we have seen with Hungarian and Finnish, as well as with, for example, Italian and German (e.g., *il suo libro* / the he-Gen book / 'his book'; and *dem Peter seine Schuhe* / the Peter-Dat his shoes / 'Peter's shoes') that determiners and Case morphemes may legitimately cooccur in these languages, which would entail competition for the same D node. Therefore, in section 4.1. we proposed an additional category K to contain the Case morpheme. This is shown again in figure (259).



Moreover, the illegitimacy of a plural morpheme inhabiting the same node as a determiner morpheme or a Case morpheme in (259) suggests that yet another category in addition to **D** (for determiners) and **K** (for Case affixes) is required in the noun phrase. This is the category **Num**. In the next section we discuss Num in relation to **D** and **K**.

4.4.2. The location of Num in the functional hierarchy

In section 4.3.2. we observed that number is external to gender in a linear string. Now let us see where Num fits in relation to the other *F*-categories of DP.

I generate Num in a position immediately above NP and below KP due to morpheme order facts which suggest cross-linguistically that number marking on an N precedes Case-marking on a N: cf. English *the men saw us*, the man-Pl-Nom see-Past I-Pl-Acc

(*the man* + pl = *the men*; *I* +Pl = *we*; *we* +Acc = *us*); Hungarian *lát_{tam} az ember-ek-Ø*; saw-I the man-pl-Acc ('I saw-the men').¹⁷⁴ Moreover, as a [+pl] feature is base-generated on Num at D-structure, and Case is assigned to the entire nominal at S-structure, Case will naturally occur outside of DP.¹⁷⁵ Baker (1985:373-5) observes in his *Mirror Principle* that 'morphological derivations must directly reflect syntactic derivations (and vice versa)'. If plurality is a feature *of* DP, and Case is a mark *on* DP, number marking must be internal to DP whilst Case-marking is external to DP. Hence number marking precedes Case-marking in a derivation. Baker addresses various data along these lines; the following example is from Chamorro, an Austronesian language:

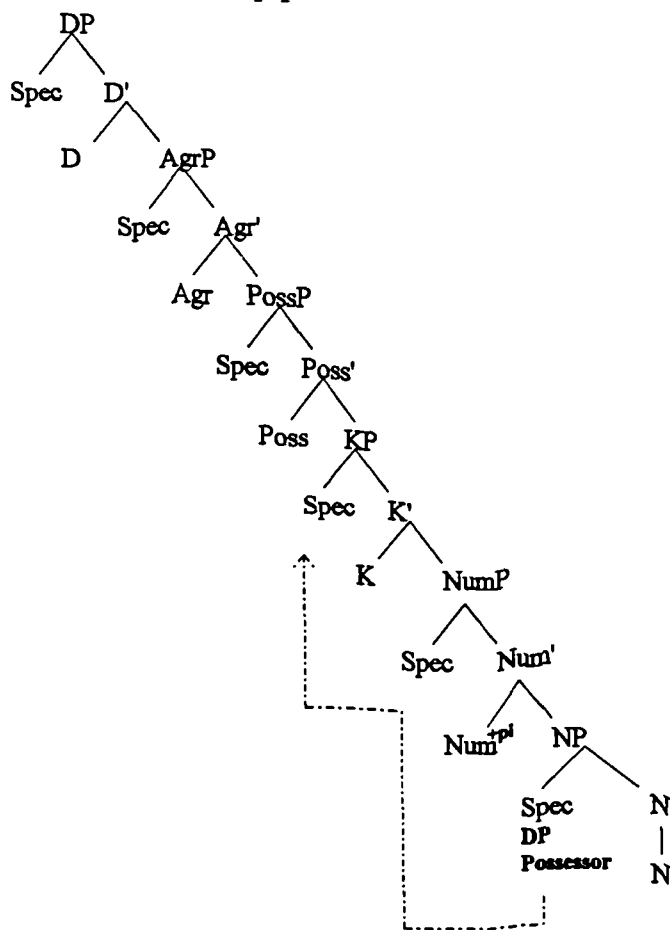
(260) Para u fan- s- in-aolak i famagu'un gi as tata-n-niha
 irrealis-3p-pl- passive spank the pl-child oblique father-their
 'the children are going to be spanked by their father'

Figure (261) below shows the position of Num with full articulation of [I,DP]. Recall that in our fully articulated DP structure, KP of DP is reserved for Case-marking of a *DP Possessor* in [Spec,NP] which raises to the [Spec,KP] position internal to a DP, whilst PossP of DP is reserved as the site of a possessive morpheme which may appear on possessed head N of NP. Case-marking on the *matrix DP* (the uppermost DP in figure (261)), is due to an external Case-marker.

¹⁷⁴But cf. Valois 1991b and 1991c for his position of Ca(se)P as below Num and above NP. I believe that that this hierarchical arrangement is unjustified in view of the data.

¹⁷⁵Regarding S-structure and Case, we remarked in section 4.1. that Case-marking on DP *subjects* (clausal and nominal) occurs after the *first* raising movement in the syntax, so that a subject DP plus its Case affix can raise again to [Spec,IP] of CP or DP before the Late Lexical Insertion of the other inflectional morphemes and their Alternation Realisation at PF. I maintain this observation here, and also assume that Case-marking on *object* DPs (i.e., on matrix DPs such as in figure (261)) occurs in the normal manner after *all* movement. It is interesting to note that, within our multi-categorial and AR framework, inflectional Case-marks occur at S-structure (i.e., at PF) *predictably*, because Kase, as one of the ϕ -features of DP, is naturally late-lexically inserted at PF. Thus the assumption that Case-marking takes place at S-structure (cf. Chomsky 1981:94), can be theoretically narrowed to the observation that Case-marking of subject DPs takes place *early* in S-structure. This again follows, since it is subject DPs that characteristically move in the syntax, and the first movement (or rather, landing-site) would be for Case-marking (cf. figure (261)). Notice also in (261) that, after raising of the subject DP Possessor to [Spec,KP], there is *virtual minimality* between Num and the head N, thus allowing the alternative realisation of the [+pl] feature on N at PF.

(261) The fully articulated DP



With respect to an *AR* analysis and the category Num, a [+pl] feature in Num⁰ may be alternatively realised as a plural morpheme on the head N⁰ at PF, providing that *virtual minimality* (cf. section 3.3.3.3.) holds.

Finally, with respect to the considerable array of functional categories in figure (261), we observed in fn. 145 that *F*-projections are necessary in both raising and *AR* analyses because, since we have argued that only argument morphemes are base-inserted, a lexical L⁰ category can not realise its ϕ -features until the level of PF.¹⁷⁶ Therefore, *F*-categories are necessary 'warehouses' for the storage of the features of L⁰ until the derivation reaches the surface stage at which the Late Lexical Insertion of ancillary (i.e., inflectional) morphemes can take place.

In Chapter 5 we examine closely the nature of D and Num and their interaction with one another.

¹⁷⁶Only *arguments* may be present at the base-level because theta theory restricts the categorial component of the base to only those elements having a θ -role, e.g., N, V, A, P (cf. Chomsky 1981:48-9).

Chapter 5: *D* and *Num* in the DP

5.1. Evolution of D

In section 4.4.1. we established Num as one of the ϕ -features of DP, with its own functional projection *NumP*. In this section we review the character of D as distinct from the character of Num.

The separation of **D** or *deictic* elements from **Num** or *numeric* elements actually dates back to Bloomfield's (1933:202-6) early division of limiting (as opposed to descriptive) 'adjectives' into two classes of *determiners* and *numeratives*.¹⁷⁷

Bloomfield recognised that certain constraints were operative on pre-N constituents, determining their sequence. He describes limiting adjectives (i.e., *determiners*) as such forms as *a*, *the*, *this*; and descriptive adjectives as such forms as *fresh* and *black*. Features of order dictate that limiting adjectives precede descriptive adjectives before a noun (e.g., *this fresh milk*, *the black sheep*); and that some limiting adjectives in turn may be preceded by numerative adjectives (e.g., *all the water* but cf. **both a water*). Thus Bloomfield's early observations lay the foundation for the taxonomy that we will develop in this chapter. In determining what is in D and what is in Num, we will utilise contemporary sources to complement Bloomfield's work.

5.1.1. Bloomfield's subclass of determiners

Bloomfield subdivides his *determiner* class of adjectives into *definite* and *indefinite*. These are as follows:

(262)

- ① definites: *the*, *this* (*these*) / *that* (*those*), *John's* book / *my* book¹⁷⁸
- ② indefinites: *a* (*an*), *any*, *each*, *either*, *every*, *neither*, *no*, *one*, *some*, *what*, *whatever*, *which*, *whichever*, *many a*, *such a*, *what a*.

Now let us expand this listing into sets of elements comprising the **D** or deictic class, whilst at the same time marking others for reclassification.

¹⁷⁷My use of the term *deictic* for D (from the Greek *deixis*, 'pointing' or 'indicating') is a comprehensive term subsuming all classes of determiner listed in section 5.2. *Numeric* for Num is similarly a comprehensive term subsuming all classes of quantificational elements listed in section 5.4.

¹⁷⁸Recall from section 4.1. that in our framework, Possessor subjects such as *John's* and *my* are in **KP**.

5.2. Contents of D

A few of Bloomefield's determiner elements we will relocate into the Num class, but for the most part his classification of (262) will be retained here. For the D class, I propose the following taxonomy. The list in (263) is informed by Jespersen (1924:chapters VI and VIII; 1933:chapters XVI and XVII) and my own judgments. It can doubtless be augmented and refined by further research.

(263)

- a) definite article (*the* dog)
- b) indefinite article (*a* cat)
- c) demonstratives (*this/that, these/those*)
- d) *wh*-deictics (*what* report; *which* person; *whatever* reason)¹⁷⁹
- e) identificationals (*such a* man, *such* brutes; *certain* people, *a certain* person)
- f) indeterminates (*some* man; *some* people)
- g) determinates (the *same* day; this *other* situation)
- i) pronouns (*we* gals, *you* men, *us* syntacticians)¹⁸⁰
- j) titles (*King* John, *Sir* Richard, *Dame* Vera, *Lord* Snowdon, *Mother* Goose)
- k) proper names (*Tom* Thumb, *Peter* Rabbit, *Jack* Frost, *Tinker* Bell)

5.2.1. Demonstratives and articles in D⁰

Demonstratives are really the heart of the determiner class. Historically, demonstrative (i.e., *deictic*) pronouns refer to what is salient in the mind of the speaker, according to a first person spatial reference. Their use can perhaps be best visualised in conjunction with a pointing gesture to what is nearer or farther away in space from the speaker; cf. *pull on this side, then on that; I like this better than that coat*. Over time demonstrative pronouns have been retained in their deictic sense, whilst the reductive form 'article' has evolved in addition to these pronouns (cf. Jespersen 1924:108-14; 1933:156-83 for the following discussion).

English has three demonstrative pronouns for indicating relative *distance* from the speaker:

¹⁷⁹Recall from section 3.3.2.1., (186) that pronominal *whose*, as in *whose* book is actually a composite of the subject pronominal *who* in [Spec,NP] and the *Poss 's* morpheme in [K,KP]: *who* + *Poss 's* = *whose*.

¹⁸⁰I must clarify here that although I place the last three elements of the list (i.e., *pronouns, titles, and proper names*), in the D domain, they are not in D⁰ but in [Spec,IP] of DP.

(264) this that yon(*der*)¹⁸¹ : *distance*

These deictic pronouns represent the egocentric viewpoint of the speaker, and so correspond to the three *persons* of the grammar (i.e., *I*, *you*, and *he*). In terms of spatial reference, *this* refers to what is near to the speaker (1st person); *that* refers to what is farther away from the speaker (i.e., roughly equivalent to a 2nd person), and *yon(der)* refers to what is farthest away from the speaker (i.e., roughly equivalent to a 3rd person). From the same egocentric viewpoint, there are three corresponding adverbs of *place*:

(265) here there yonder : *place*

and two corresponding adverbs for time:

(266) now then : *time*

Articles are reduced forms, of a demonstrative and of a numeral. *The* is a weak form of the demonstrative pronoun *that*; residual evidence of this can be found in the extant expression *the t'other*, where the remnant *t* of *that* attaches to *other* (cf. the original *that other*). Additional evidence is that the high-front vowels in *this* and *here* characteristically denote nearness in many languages, whilst the lower and more retracted vowels in *that* and *there* characteristically denote farness (cf. French *ici* and *là*). Hence a phonetically weakened form of *that other* derives *thə(t) other* at surface level.

The 'near' and 'far' concepts of the demonstrative pronouns have been transformed into 'determinate' and 'indeterminate' functions of articles. *That* in its original determinate form served to 'point out' something spatially removed from the speaker. As a weakened form of *that*, *the* also has a weaker meaning: instead of serving to point out, it serves to 'designate' or 'single out', in relation to a following N. When coupled with the semantic specification of the noun, *the* functions as the article of *complete determination*, i.e., defining or determining an N in the extralinguistic world or in the discourse. *The* is used primarily when the following N is insufficiently specialised to be understood on its own. In this sense English employs *the* to a lesser degree than many other languages.

¹⁸¹*Yon* and *yonder* are obsolete in Standard English but survive in dialectal form in, for example, Northern England and Southern America.

(267)

- | | | |
|---------------------------|-----|-----------------------------------|
| a) *man works in London | - - | a') <i>Father</i> works in London |
| b) *infant needs changing | | b') <i>Baby</i> needs changing |
| c) *see you after meal | | c') See you after <i>lunch</i> |
| d) *repast is at eight | | d') <i>Dinner</i> is at eight |
| e) *you must ask barman | | e') you must ask <i>Chef</i> |

Structurally, *the* has been classified as a restrictive or specifying adjunct (Jespersen 1924:109). Perceived as an adjunct to N, the evolution of **D** is inseparable from the evolution of **C**: both categories originated as the independent pronoun *that* in OE but, with the reduction of the full vowel [æ] to the weak vowel [ə], weak *that* came to be viewed as part of the nominal or of the clause rather than as a pronoun *preceding* it: cf. *I think: man is dead* and *I think that (i.e., man is dead) ⇒ I think_{DP}[that man] is dead* or *I think_{CP}[_C[that _{IP}[man is dead]]]*.¹⁸² (Cf. Jespersen 1933:350).

A is a reduced form of the numeral *one* historically. In this usage, *one* has undergone a transition from genuine numerical use to use as an 'indeterminate' (i.e., 'undefining' or 'unspecifying') article. This transformation can be seen in (268), with (c) - (e) exhibiting the emerging *indefinite* function of *one*.

(268)

- a) Then you must speake of *one* that lov'd not wisely, but too well (Sh., *Othello*)
- b) Rain or shine, that is all *one* to me.
- c) On *one* fine morning we started home.
- d) *One* day will come when you repent of this.
- e) He mentioned an Englishwoman, *one* Miss Arundel.

Like definite *the* from *that*, indefinite *a* (before vowels) and *an* (before consonants) are phonetically weakened forms of numerical *one*. This can be traced in the following examples.

(269)

- | | |
|-------------------------------|-------------------------------|
| a) one aim [æ] / an aim [ə] | a') one name [æ] / a name [ə] |
| b) ane heir [æ] / an heir [ə] | b') one hair [æ] / a hair [ə] |
| c) one M.P. [æ] / an M.P. [ə] | c') one unit [æ] / a unit [ə] |

¹⁸²The indefinite article was nonexistent in OE; and ModE *a* and *an* are derivatives of OE numeric *one*.

In its 'indeterminate' function the indefinite article *a/an* serves to stimulate a generic image in the mind of the hearer, when used with a singular noun for which identification is either not possible or not important:

(270)

- a) a comfortable chair is useful
- b) she wore a horrid dress
- c) a useless theory
- d) have a good time

Viewing *a/an* structurally as an unrestrictive or unrestricting adjunct to N, the evolutionary development of *one* to *a/an* can be traced phonetically in *I think one [ə] man is dead* and *I think a [ə] man is dead*.

We will return to articles in section 5.2.1.2. (*Feature-Specification of the classes of D*). In the course of our discussion on feature-specification, we will argue for the remaining contents of the D node as listed in (263).

5.2.1.1. Jackendoff's Det node

For Jackendoff (1977), *Det* was equivalent to [Spec,NP]. Whilst much of the work in this thesis is based upon on Abney's (1987) DP-Analysis, which refutes this position, we will concern ourselves here with Jackendoff's penetrating investigation into the elements of the Det node.

Jackendoff identified as problematic that quantificational and degree words can co-occur with articles and yet there was ostensibly only one node to house all of these elements, namely, the specifier position of NP. He perceived the semantic reflex of [Spec,NP] as composed of the following three areas (Jackendoff 1977: 103-7):

(271)

- a) deixis
- b) quantification
- c) degree & measure

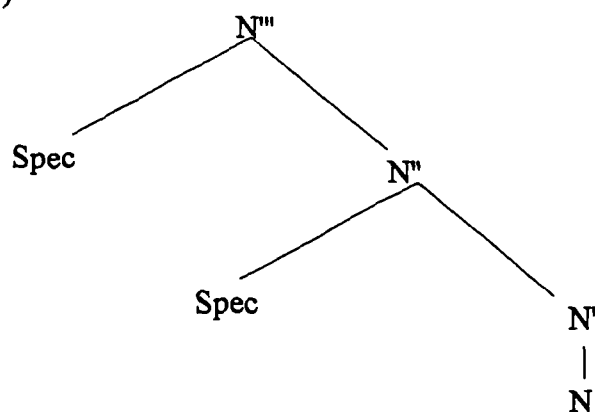
and proposed the following semantic constraint:

(272) *Specifier Constraint*

An NP specifier may contain at most one demonstrative, one quantifier, and one numeral.

If the terms realising deixis, quantification, and degree/measure could all co-occur in the NP specifier position, then a restructuring of the noun phrase was required in order to correlate semantic notions with syntactic positions. Jackendoff's solution was to generate the NP specifier as a specifier to variable nominal levels, i.e, in some cases [Spec,NP] would modify an Nⁿ and in some cases an N^m. This resulted in a tri-level bar notation for NP, as in figure (273).

(273)

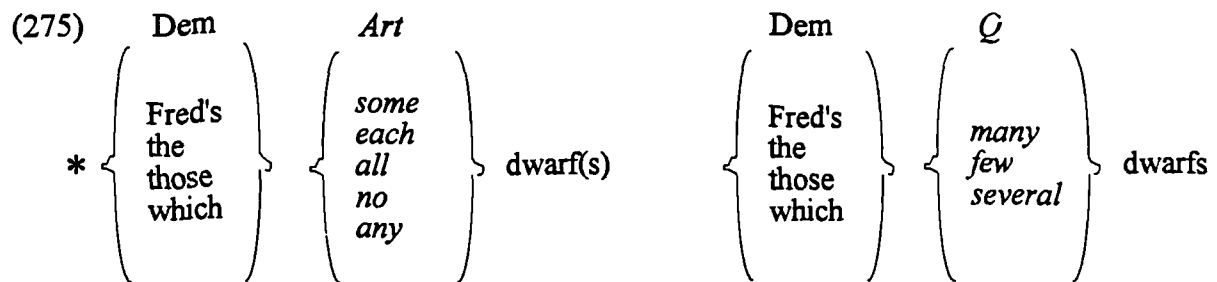


Before we flesh out the representation in (273), let us see what sort of terms Jackendoff proposed for each of the three semantic fields of deixis, quantification, and degree/measure. These are as follows:

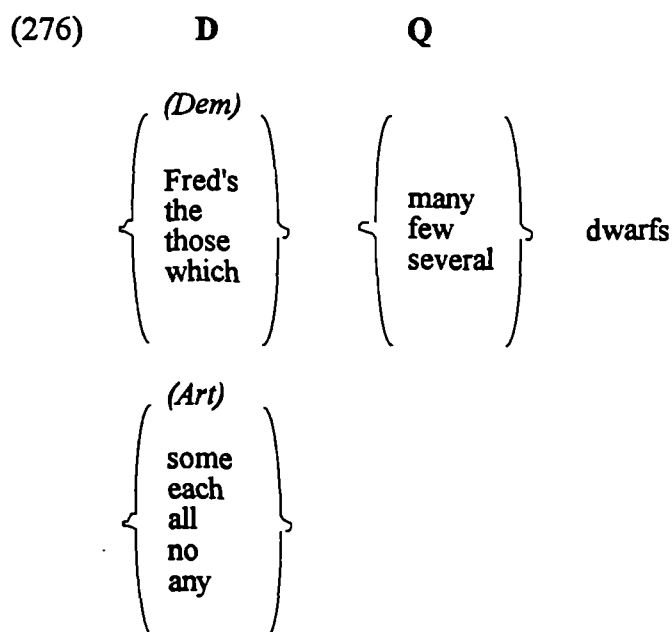
(274) Demonstratives (<i>deixis</i>)	Quantifiers (<i>quantification</i>)	Numerals (<i>degree/measure</i>)
the	each/every	cardinals
this/that	any/all	ordinals
these/those	much/many	a couple
which/what	few	a few
a	little	a little
some	some	
	no	

Jackendoff (1977:104) observed that 'genitive NPs and demonstratives may be followed by certain quantifiers, but not by others' and that 'there is no apparent semantic reason for this division':

cf. *Fred's many apples* and **Fred's some apples*. Consequently, he suggests a division of the **Quantifier** class in (274) into two distinct classes, *Art* and *Quantifier*:



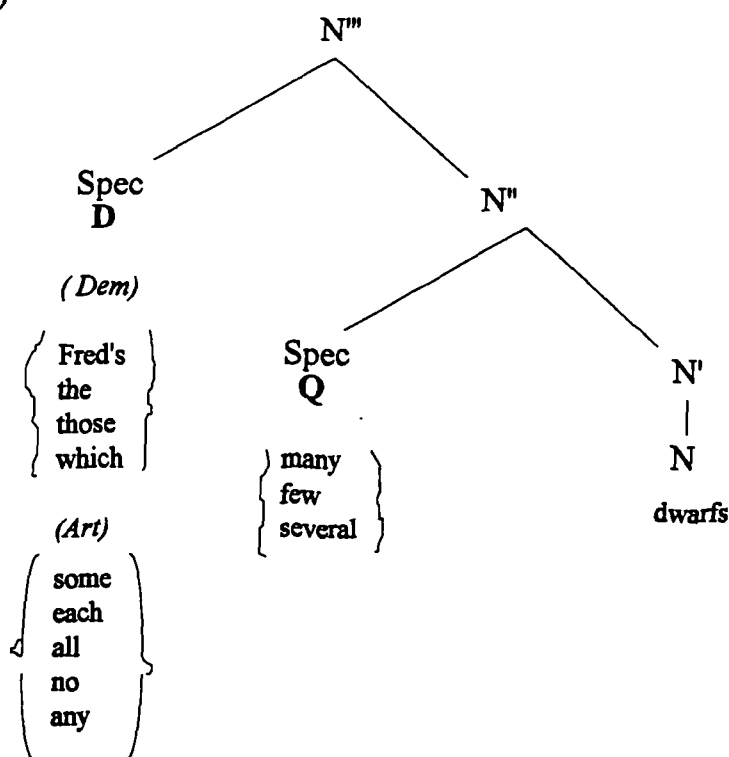
In this classification, *some*, *each*, *all*, *no* and *any* are assigned to the category *Art*, and *many*, *few*, and *several* are assigned to the category of *Quantifier*. *Art* is syntactically co-distributional with the class of Demonstratives (*the*, *this/that*, *these/those*, *which/what*, *a*, *some*) and so can not co-occur with elements of this set. Hence we can naturally label the set of Demonstratives and Arts together as class **D** (for Jackendoff's *deixis* semantic system).¹⁸³ The *Quantifier* class, on the other hand, is not in complementary distribution with the Demonstrative or *Art* class, and so can co-occur with these members of our new **D** class. Hence we can reconfigure the representation in (275) as (276):



¹⁸³Recall that in our framework possessive *Fred's* is contained in KP, and so not part of **D**, as in (276); and *Poss 's* of **D** in the DP-Analysis has been reanalysed as *Poss 's* of **K** in our KP-Analysis. (Cf. section 4.1.).

D in figure (276) is now an umbrella term for demonstratives (*the, those*) and interrogatives (*which*), and some former quantifiers (*some, each, all, no, any*). Jackendoff claims, rather stipulatively, that the Specifier Constraint rules out predictable strings such as **no many men, *all several men, *any much wine, etc.*, on the basis that two *semantic* quantifiers can not occupy specifier positions to the same N. Recall Jackendoff's proposal of figure (273) that specifiers may precede different nominal bar-projections; this means that the *Dem/Art* alternation and the *Q* class in (276) are specifiers to N''' and N'' , respectively. Thus for **some many dwarfs*, for example, *some* is located in $[\text{Spec}, N''']$ and *many* is located in $[\text{Spec}, N'']$; both quantifiers are specifying a single noun. This is shown in figure (277).

(277)



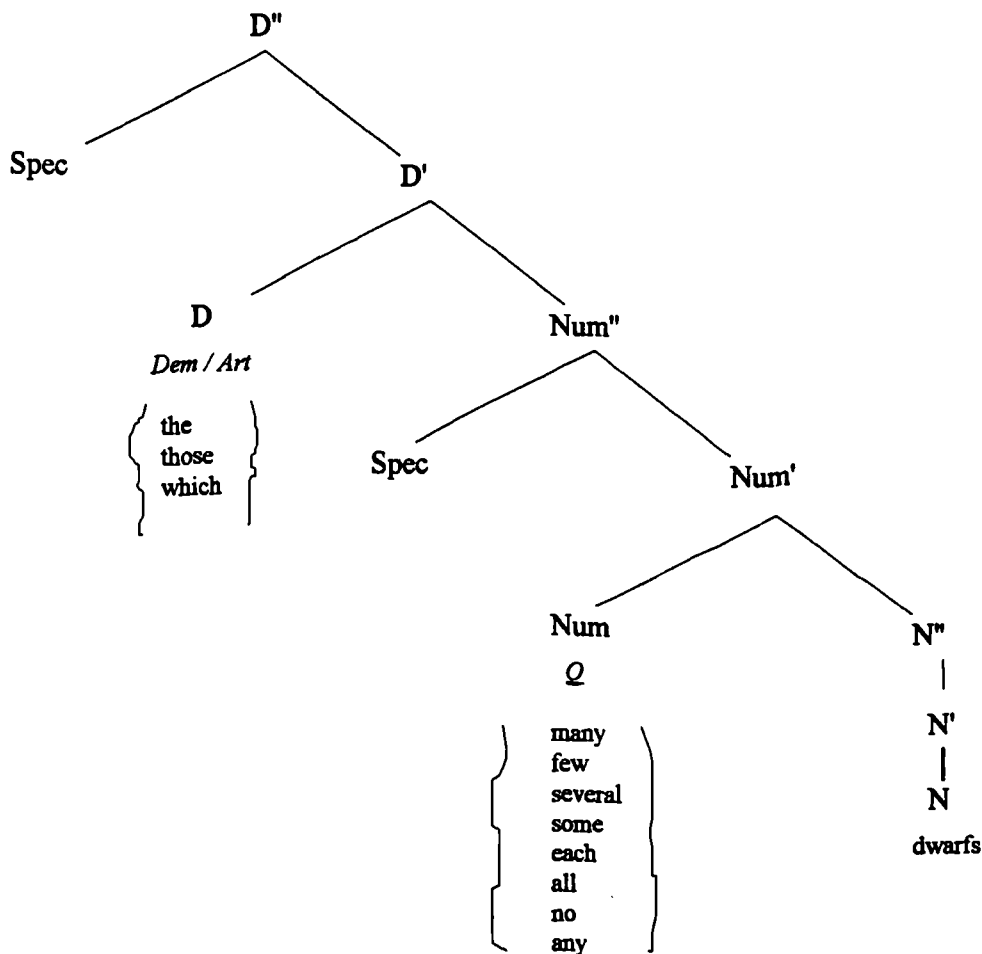
From the representation in figure (277), elements of the **D** class should predictably be able to occur licitly with elements of the **Q** class. Yet this is not the case, as, besides **some many dwarfs*, generated combinations such as **which many dwarfs, *some several dwarfs, *each few dwarfs, *all several dwarfs, *any many dwarfs, etc.*, are all illicit. Hence we need to rectify the analysis in (277) in line with contemporary theoretical hypotheses.

The semantic restriction put on such strings by the Specifier Constraint can perhaps be ameliorated by a syntactic restriction concerning complementary distribution.

Therefore, I propose returning the elements in the Art class of (277) to the Q class, and subsuming the Q class under a generic Num class. Following Jackendoff, feature-specification and subcategorisation (cf. Chomsky 1965:79-90) will then determine why strings such as *Fred's many apples* but not **Fred's some apples; those several dwarfs* but not **all several dwarfs; the many dwarfs* but not **each many dwarfs* are licit or not.

Essentially, I will be borrowing Jackendoff's two-tier structure of (277) for the occurrence of D and Num, in various and possibly recursive combinations in the DP. I will claim that the feature-specification on D and Num *F*-heads directly influence the respective subcategorisation possibilities for D^0 or Num^0 , and that the mechanism of subcategorisation will be seen to do the work of Jackendoff's *Specifier Constraint* (cf. (272)) in ruling out illicit combinations of D and Num. My contemporary interpretation of figure (277) is shown in figure (278). In section 5.2.2. we examine the feature-specification on D and Num, and how this determines their range of complements.

(278) Jackendoff's NP specifiers reinterpreted as *D* and *Num*



5.2.1.2. Feature-Specification of the classes of D

Under the DP-Analysis, D assumes head status comparable to that of C or I and, by this status, identifies the *nature* of the following nominal as [\pm Definite] (*the/a*); [\pm Proximate] (*this/that*); [\pm Plural] (*these/those*), etc. These features, as we have suggested in section 4., are base-generated on their respective *F*-heads. We begin by examining a typical nominal feature.

The [\pm pl] feature in English nominals is generally confined to the Num⁰ category. Only in the case of the demonstratives *this* and *that* and the quantifiers *much* and *a little* is number required on D⁰ as well as Num⁰: *this boy/these boys*; *that boy/those boys*; *much fuss/many friends*; *a little coffee/a few biscuits*; *this little money/these few pounds*. Hence determiner form in English is markedly invariable, even where a number alternation would be 'logical' in strings of singular and plural Ns occurring together (cf. Jespersen 1933:214-15):

(279)

(a) The mother and children are here (cf. Fr. *la mère et les enfants sont ici*)

ΔThe mother and some children are here¹⁸⁴

(b) He still wears the same coat and trousers

ΔHe still wears the same coat and some trousers

(c) The baby and twins are in the car

ΔThe baby and some twins are in the car

The idiosyncratic demands of a particular language then, motivate the mobility or inertness of syntactic features on their head hosts. The [\pm pl] on Num can not raise to *the* in the examples in (279) without semantic disparity. The taxonomy developed for the contents of D in (263) derives largely from the implicit set of features which can appear on a D. Some of these features and their PF-realizations are listed in (280). Recall that in our D class we have placed *articles* (*a/the*), *demonstratives* (*this/that*; *these/those*); *wh*-deictics (*what* report, *which* person); *identificational*s (*such a* man; *certain* people); *indeterminates* (*some* man; *some* people); *determinates* (*the same* day; *this other* situation); *pronouns* (*you* men, *us* syntacticians); *titles* (*King* John, *Mother* Goose); and *proper names* (*Tom* Thumb, *Peter* Rabbit).

¹⁸⁴These sentences, although grammatical, are semantically different from their singular counterparts, due to the proportional interpretation of *some* in these examples. Hence the Greek letter delta (Δ) is used to notate 'different'.

Many of the features listed in (280) below are deductive conclusions based upon how an N or D might be represented in the mind of the speaker. For example, a nominal such as *such brutes* might be represented by the N *brute* at base-level carrying the features of [+common], [+count], [-abstract], [+animate], [+human], [+identity] (representing a *type* of person in the person's mind), etc. (cf. Chomsky 1965:82). According to our *Variable Feature-Raising* hypothesis of (246), the [+identity] feature of N⁰ would need to project onto the functional category of D⁰ and appear in conjunction with a [-def] feature of D⁰, in order to license at PF the possible morphemes that may be inserted in D⁰ (e.g., *such*). In the case of recursive D such as in the singular form *such a brute* (_{DP} [_D [_{such} [_{DP} [_D [_a [_{NP} [_N [_{brute}]]]]]]]), I will speculate that the [+identity] feature from N⁰ 'passes through' the lower D⁰ on its way to the higher D⁰ landing-site, where it then licenses the insertion of *such* at PF. Both the lower and higher D⁰, meanwhile, share a copy of the [-def] feature, thereby licensing the insertion of *a* in the lower D⁰ at PF. We will discuss the licensing of recursive D⁰ in section 5.2.3.2. (280) shows some sample syntactic features on D and the possible subcategorisation frames.

(280) Some sample feature-indexes on D⁰ 185

<i>a</i> , D, -Def, -Dem, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>a man, a hundred men</i>
<i>the</i> , D, +Def, -Dem, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>the chair/the chairs/the two chairs</i>
<i>this</i> , D, +Def, +Dem, +Proximate, _____	NumP	<i>this chair</i>
<i>those</i> , D, +Def, +Dem, -Prox, +Pl, _____	NumP	<i>those chairs/those two chairs</i>
<i>some</i> , D, -Def, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>some man/some men (are at the door)</i> ¹⁸⁶
<i>what</i> , D, -Def, +Wh, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>what report/what reports</i>
<i>which</i> , D, -Def, +Wh, +Discriminate, ±Plural, _____	$\left. \begin{array}{c} \text{NP} \\ \text{NumP} \end{array} \right\}$	<i>which paper/which papers</i>
<i>such</i> , D, +Def, +Identity, ±Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>such a man (as that)/such brutes</i>
<i>we</i> , D, +Def, +pro, +1p, +Nom, +Pl, _____	$\left. \begin{array}{c} \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>we the students/we students</i>
<i>us</i> , D, +Def, +pro, +1p, +Acc, +Pl, _____	NumP	<i>us students</i>
<i>you</i> , D, +Def, +2p, +Nom, +Pl, _____	$\left. \begin{array}{c} \text{NP} \\ \text{DP} \\ \text{NumP} \end{array} \right\}$	<i>you student/you the students/you students</i>

¹⁸⁵Cf. Zwarts (1994:3) for similar sets of features realised on D.

¹⁸⁶Note that deictic (i.e., indeterminate) *some* is different from numeric (i.e., Q) *some*, as in figure (278).

5.2.2. Other deictic elements in [D,DP]

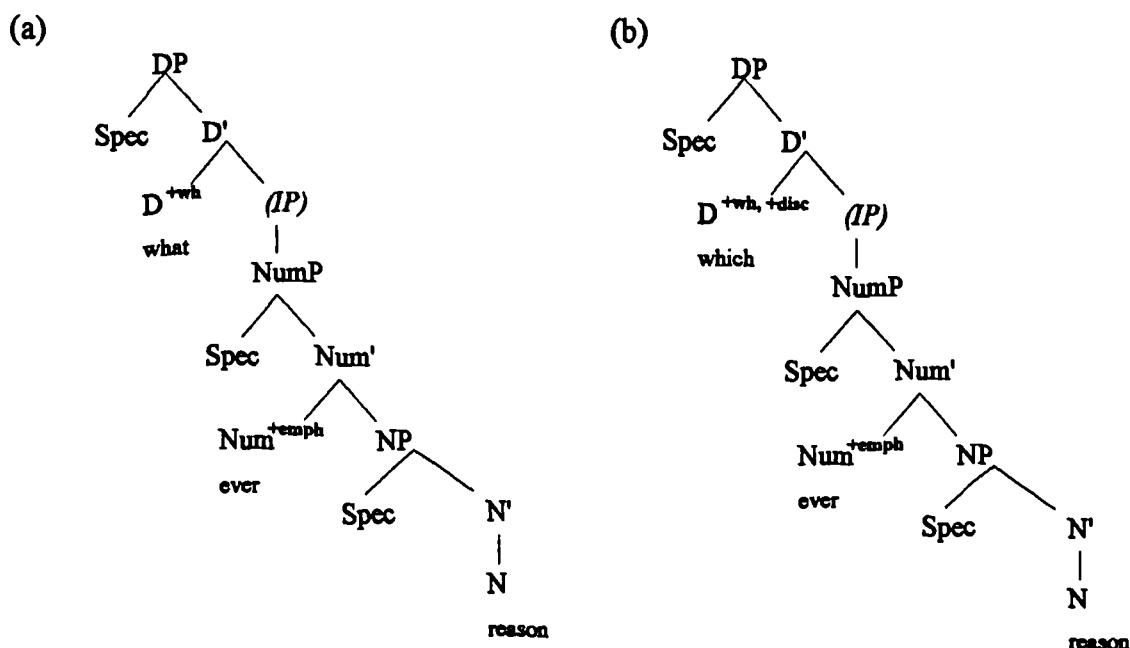
Besides the definite and indefinite *articles* and the *demonstratives*, there may be contained in D⁰ elements such as *wh*-deictics (*what* report, *which* person), *identificational*s (*such* a man, *certain* people), *indeterminates* (*some* man; *some* people), and *determinates* (the *same* day, this *other* situation), along with other possible terms that may not have been identified in the list in (263). We will discuss each of these D⁰ elements in turn.

5.2.2.1. *Wh*-deictics in D⁰

Wh-deictics are a fairly straightforward case of a [+wh] feature on D⁰ licensing the insertion of *wh*-words. *What* is less definite than *which*, having wide scope which may refer to any member of an infinite class (e.g., *what* report) or to the entire class itself (*what* reports). Deictic *which*, however, is more restrictive, denoting a particular member of a finite class (e.g., *which* report (of a set of at least two); *which* file (from the set of files in the drawer), or a particular set from amongst a larger finite set (e.g., *which* reports; *which* files). Hence *which* requires that a [+discriminate] feature in addition to a [+wh] feature be present on D⁰, in order to license its insertion at PF.

In addition to *what* and *which*, there are *wh*-compounds such as *whatever* and *whichever*, which I claim are the surface realisation of a D-NumP sequence in the syntax:

(281) *whatever* and *whichever* in D⁰ and Num⁰ 187

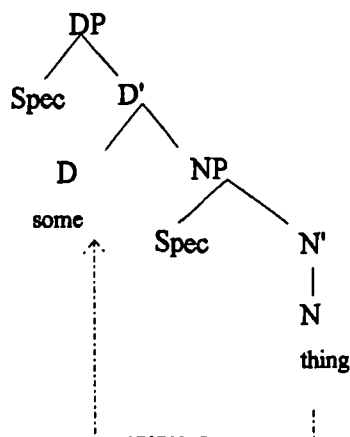


¹⁸⁷In its emphatic ([+emph]) form, *ever* in nominals has a quantificational sense corresponding to *all* (cf. Jespersen 1933:183).

5.2.2.2. D⁰ determiners vs. Num⁰ quantifiers

The analysis in figure (281) is based upon although different from Abney's (1987: 285-7) suggestion that pronouns such as *something*, *everyone* and *anybody* are 'morphological mergers' or adjunction structures, where N⁰ raises to adjoin to D⁰.¹⁸⁸

(282)



Radford (1993) says that, according to the analysis in (282), pronouns such as *everybody* would be 'syntactic compounds' derived from head movement of N⁰ to Q⁰. However, he argues against this type of syntactic adjunction on the basis of the following arguments:¹⁸⁹

(283)

- a) why irregular pronunciation of *no* in *nothing*?
- b) why no plurals of *thing*, *one*, and *body* (e.g., *somethings*)?
- c) why only *every*, *some*, *no*, and *any* in D⁰ (e.g., why not **eachbody*)?
- d) why special (+Human) meaning of *one* and *body*?
- e) why adjunction to the right?
- f) what triggers the movement of *thing*, *one*, and *body*?

Radford's suggestion is that the Q *every* and the N *body*, rather than originating as two separate heads which fuse together in the syntax, form a co-headed 'lexical compound' of $_{QN}[Q[every] N[body]]$, which projects to $_{QNP}[_{QN}[Q[every] N[body]]]$.

Endorsing Abney, Zwarts (1994) proposes that elements such as *something*, *everyone*, *anybody*, and *nothing* are more precisely compounds of a lexical and functional element, hence entailing N-to-D movement, which Radford rejects.

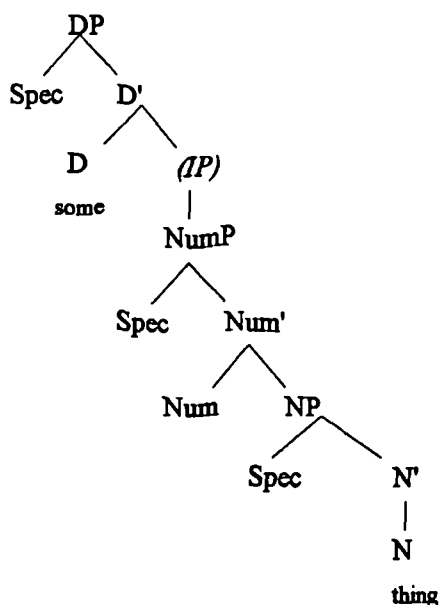
¹⁸⁸Notice in (282) that here again, *some* is deictic (i.e., indeterminate) *some* and not quantificational *some*.

¹⁸⁹This summary of arguments is borrowed from Zwarts (1994:6).

I will support Radford's non-movement position of compounds, and propose that movement of an N^0 such as *thing* to a D^0 such as *some* is not necessary due to our compatible categories of *D* and *Num*. Compounds such as *something* and *somebody* are D-NP sequences; whereas compounds such as *everything*, *anybody*, and *nothing* are Num-NP sequences; whilst compounds such as *everyone*, *anyone* and *no one* are Num-NumP sequences. Each item is realised *in situ* in its *F*-category at PF, and co-occurrence conflicts are avoided via feature-specification, as in (280).

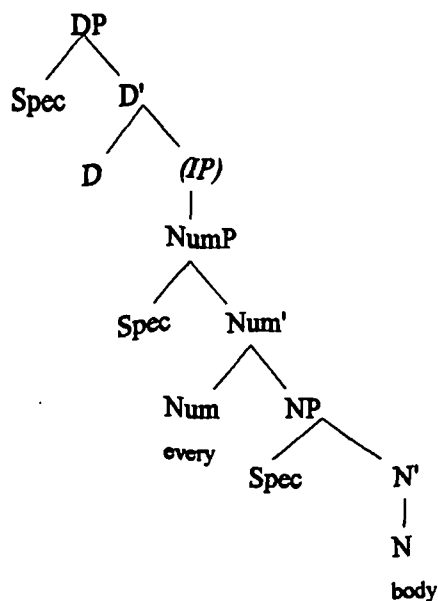
Let us now modify Abneys' interpretation of figure (282) to (284):

(284)



and analyse a compound such as *everybody* as in figure (285):

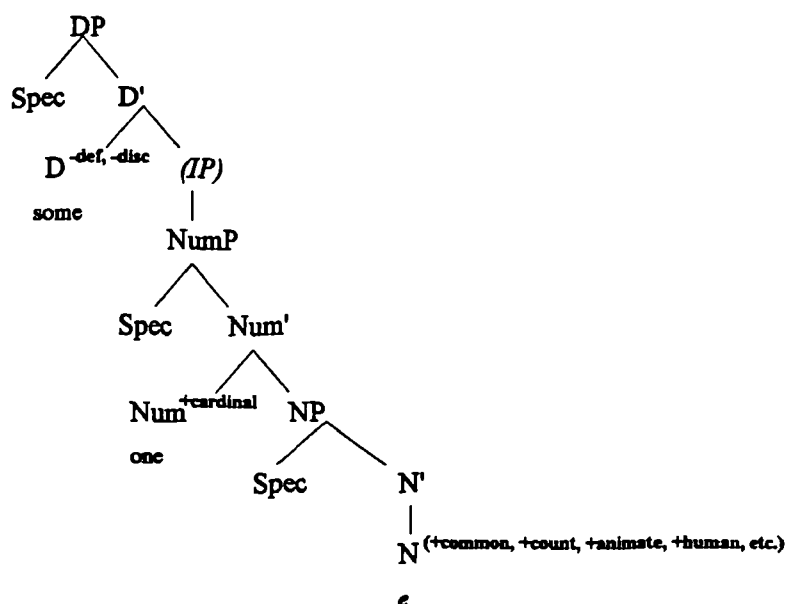
(285)



In my analyses of (284) and (285), raising and adjunction are unmotivated. *Every* in *everybody* is a Num⁰ element taking the common NP *body* as a complement, thus explaining why *body* (i.e., *person*) has a [+human] feature; whilst such terms as *every*, *each*, *any*, and *no* are quantifiers having scope over the entire NP. As such, I place them in Num⁰ and not D⁰, where Abney situates them.

Concerning pronominal vs. cardinal *one*, *one* in *one man* and *someone* is a cardinal numeral in Num⁰ in (286), and *someone* is a D-Num-NP sequence with an empty head N.¹⁹⁰ *One* as numeric is supported by nominals such as *oneself* in English.

(286)



From the example in figure (286), we see that *some* may both deictic and numeric: cf. *some* things (as in *certain* things) where *some* is deictic, and *some* (of the) things (as in a *portion* of the things) where *some* is numeric. In this latter sense *some* as quantifier can not cooccur with another Q: cf. **some some things*; **some no things*; **some all things*; **some few things*. As for the licensing of the empty head N in (286), I propose that this is due to its selection by a governing head (i.e., *Num*), which selects the *projection* of N, including the empty head $N[\emptyset]$. (Cf. Rizzi 1986:518-19; Haider 1994: 190).

Lastly, concerning the fact that no plurals exist for **some things*, **everyones*, **anybodies* and **nothings*, this again is due to the interaction of D and Num, and the

¹⁹⁰Concerning [-def] on D⁰ in figure (286), recall that, in our discussion of a gender in section 4.3.3., [+fem] or [+pl] project to an F-head only in the case of a positively specified feature (i.e., [+fem] or [+pl]). In the case of [+def], however, a negatively specified feature (i.e., [-def]) is required to project to D⁰, in order to license the insertion of an *indefinite* determiner (e.g., *a*, *some*), which is further restricted by other features on D⁰ (e.g., *some* = [-def], [-discriminate]) - cf. section 5.2.2.2.

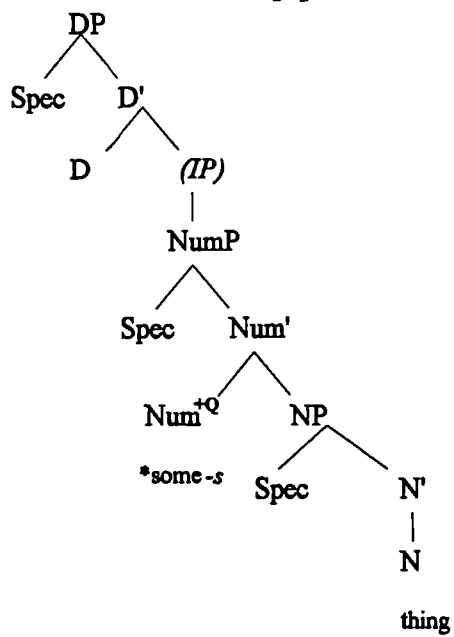
respective feature-complexes on each. A [+Q] on Num⁰ may be realised by a lexical morpheme inserted *in situ* (e.g.; *some, every, any, no*); or a [+pl] feature on Num⁰ may be alternatively realised as an inflectional -s morpheme on the lexical head N to its right. [+Q] and [+pl] are mutually exclusive on the *same* Num head; where one occurs, the other cannot. Consequently, where a lexical morpheme exists in Num⁰, inflectional -s is prohibited, and vice versa. This constraint is semantically motivated: quantifiers specify a portion of a particular set, which may be singular or plural (cf. *little courage, few specimens*), whereas the plural -s morpheme renders the set itself plural (cf. *specimens*). Hence a feature-co-occurrence restriction logically rules out [+Q] and [+pl] on a single Num head:

(288)

- (e) *somes thing
- (f) *some things (where *some* is numeric)
- (g) *everyones
- (h) *every ones
- (i) *anys body
- (j) *any bodies
- (i) *nos thing
- (j) *no things

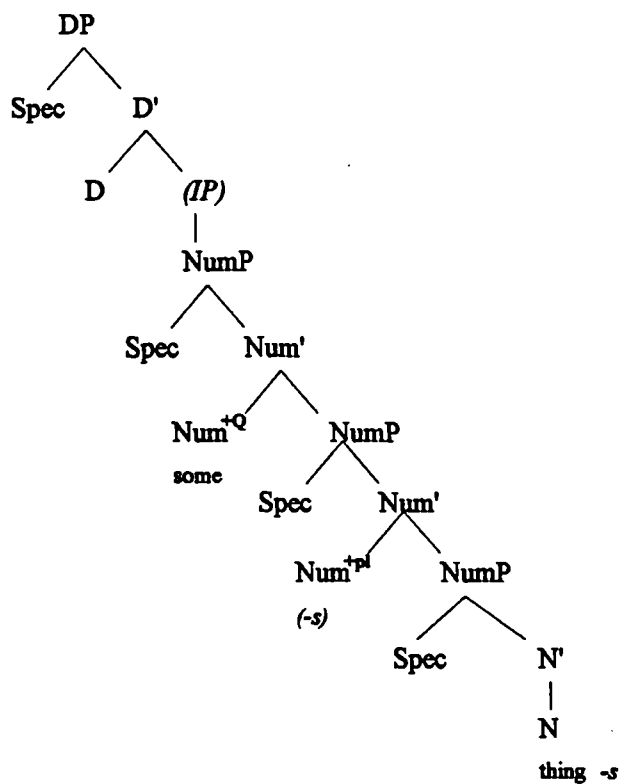
Although *some things, any bodies, and no things* in (288) are not illicit, they are only licit where a second NumP is generated: i.e., DP[D[NumP[Num[*some* NumP[Num[-s NP[N[*thing*]]]]]]]; DP[D[NumP[Num[*any* NumP[Num[-s NP[N[*body*]]]]]]]; DP[D[NumP[Num[*no* NumP[Num[-s NP[N[*thing*]]]]]]]. In the case of only one NumP, these strings are illicit, as both a Q and a plural -s would be competing for the same Num node: cf. DP[D[*what* NumP[Num[*ever / -s* NP[N[*reason(-s)*]]]]]] and DP[D[NumP[Num[*no / -s* NP[N[*thing(-s)*]]]]]]. Some examples from (288) are represented graphically in (289). Here we can see that when a lexical quantifier occupies Num⁰, it blocks a plural -s morpheme from the same node:

(289)



However, this can be rectified with a recursive Num construction, as in (290). We will discuss licensing of recursive *F*-heads in the next section.

(290)



5.2.2.3. Identificationals, Indeterminates, and Determinates in D⁰*

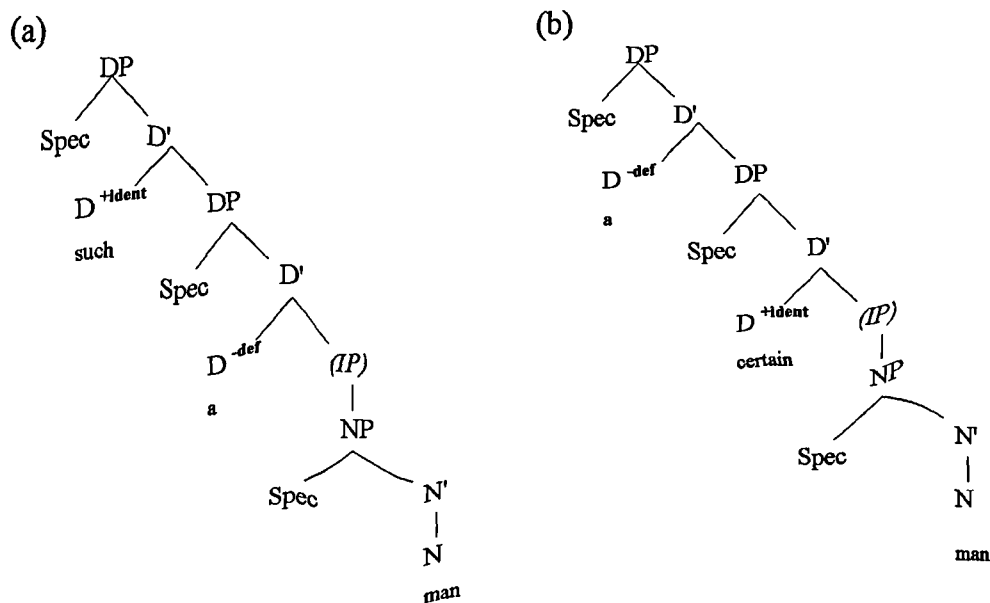
Now let us examine the three remaining classes of D, namely *identificational*s, *indeterminates*, and *determinates*. **Identificational**s such as *such* (a), and (a) *certain* in D⁰ are the result of a [-def] and [+identity] feature-combination on D⁰ (cf. section 5.2.1.2.); *such* and *certain* are deictic in that they specify a referent that might be mentioned but isn't (cf. Jespersen 1933:171-2; 180); and *such a* and *a certain* are cases of a D⁰ occurring with another D⁰, i.e., recursive D.

(291)

- (a) We are such stuff as dreamers are made on (Sh., *The Tempest*)
 (b) I am not such a fool that I believe everything he says
 (c) A certaine man went down from Hierusalem to Jericho (*King James A.V., Luke 10:30*)
 (d) Certain people had already begun to suspect him

In the case of *such a* and *a certain*, positioning of the article (*a*) is due to the positioning of the [+identity] feature on either the first or second D⁰: in *such a man*, the [+identity] feature occurs on the higher D⁰ and the [-definite] occurs on the lower D⁰, whereas in *a certain man*, the [-definite] feature occurs on the higher D⁰ whilst the [+identity] feature occurs on the lower one. I presume that idiosyncratic restrictions in English determine the respective sites for this positioning of features, although I can not name these restrictions now. In the case of *such* and *certain* without an article, the [-def] and [+identity] features co-occur on a single D⁰ (cf. *such stuff*, *certain types*), as a double D would violate the Least Effort Condition (recall section 4.3.4.1. on GenP).

(292) Double D in DP



The analyses in (292) raise the question of the licensing of a double D. Recall our observation from section 4.3.2.3. that nothing in principle prevents more than one copy of the same feature on different *F*-heads, or prevents different features occurring on the same or different heads. By the same principle, nothing precludes two projections of the same *F*-category in a single constituent, as long as both have distinct content (cf. Ritter 1992:217). The two Ds in figure (292) have distinct morphemic content, and I propose that their licensing is due to a *lexical blanketing* effect, whereby a lexical head suffuses all of its dependent *F*-categories with sufficient 'substance' to warrant their existence, *in conjunction* with the lexical head. This view is closely related to Roberts' (1992:16) extended interpretation of Chomsky and Lasnik's (1991:37) *L-relatedness*:

(293) *L-relatedness* (extended)

Given a lexical head L, an (*F*-)position is L-related if:

- (i) it is a feature of L
- (ii) it is a specifier or complement of a feature of L

There are many cross-linguistic instances of double D in the same DP, either preceding the N or following the N or both. Some examples are given in (294).¹⁹¹

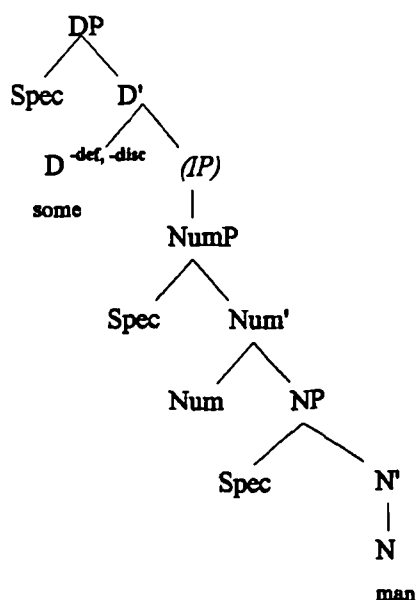
(294)

- | | |
|--|--------------|
| (a) az a gyerek
that the child
'that child' | Hungarian |
| (b) afto to spiti
this the house
'this house' | Modern Greek |
| (c) el hombre este
the man this
'this man' | Spanish |
| (d) ke-ja kanaka
the-this person
'this person' | Hawaiian |

¹⁹¹For these data I am grateful to Maite Ezcurdia of the Instituto de Investigaciones Filosóficas, City University, Coyoacan, Mexico, who kindly posted a summary of complex demonstratives on the internet on 25 January, 1996; for LINGUIST. Also to the many linguists who answered her query concerning this.

Indeterminates in D^0 are a case of a [-def] feature occurring in conjunction with a [-discriminate] feature on D^0 .- In this case the noun has even less specificity than an N in its indefinite sense; not only is the N itself not restricted or specified, it is also of little importance which member of the unspecified set is selected: cf. *some man is at the door*; *some people are never happy*. Thus indeterminate deictics can not be combined with definite deictics (cf. **the some man*; **these some children*) due to a semantic conflict of restriction vs. nonrestriction; and they can not be combined with quantifiers (cf. **some every man*; **some many people*; **some no children*) due to the fact that an indeterminate (i.e., unrestricted) set can not be quantified. In the case of a licit construction such as **some few people*, *some* may here be denoting an indeterminate group of people out of numerous groups of these same people (i.e., any group of a few out of many groups of a few). *Some* as an indeterminate deictic is analysed in figure (295).

(295)

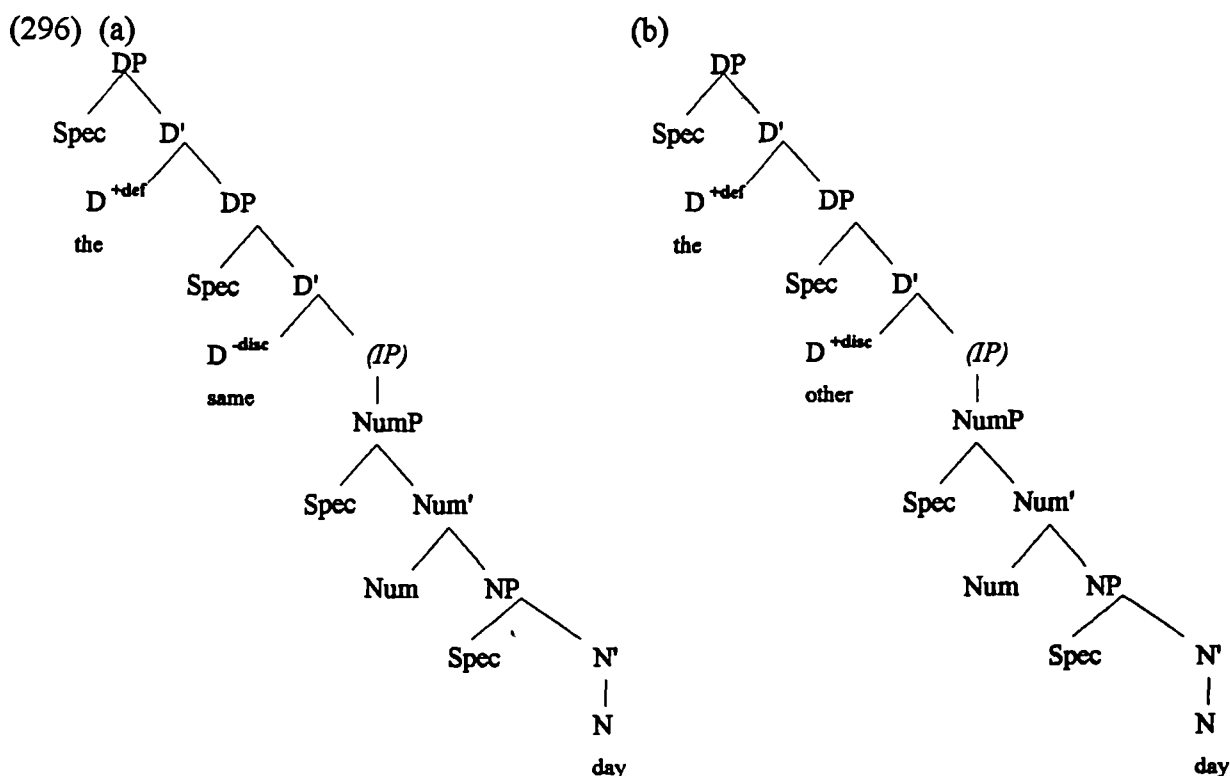


This in certain usages may be an indeterminate rather than a demonstrative deictic: cf. *there's this guy in Milwaukee...* (cf. Postal 1969:205, fn. 10). In this case I would posit that a [+def] and [-discriminate] feature-combination on D^0 suggests a definite individual who nonetheless remains unspecified. Because of the [+def] feature on D^0 , *this* in such instances can not occur with another definite determiner: cf. **the this man*, **this the man*; or with an indefinite determiner: cf. *a *this man*, **this a man*.

Determinates such as *same* and *other* serve to select a member of a set based upon a criterion of similarity or difference. As these deictics implicitly suggest a *single* member of a set, they might arguably be viewed as quantifiers. However, we have observed in section 5.2.3.1. that quantifiers indicate a portion of a set. *Same* and *other*,

on the other hand, serve to point out a *particular* member of a set. I therefore interpret them as deictic: cf. *the same man, the other day*. *Same* and *other* in D⁰ are a case of a [\pm discriminate] feature appearing in conjunction with a [+def] feature, but at different sites. Deictic *same* and *other*, like *such a* and *a certain*, are marked in that they require a separate D node (for the [\pm discriminate] feature) in addition to the D node for the [+def] feature. Thus they always involve recursive D.

Figure (296) shows *same* and *other* as determinate deictics; in these analyses they occupy the second (i.e., lower) D⁰. Concerning the higher D⁰, a [-def] feature on this D in conjunction with *same* is ungrammatical (cf. **a same day*) due to the incompatibility of a [-def] feature cooccurring with a [+discriminate] (i.e., inherently *definite*) feature on the lower D⁰. But a [-def] feature on D⁰ in conjunction with *other*, as in *an other*, is grammatical due to the historical ordinal meaning of *other* as 'second' (cf. Danish *anden*). Consequently, in current usage *an other* still suggests quantity rather than discrimination (cf. the quantifier *another* in *another day* vs. the double deictic *the other day*).

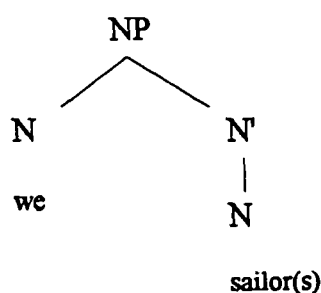


D-Num strings such as **the same many men* and **the other every day* are illicit because of the inherent contrast of a deictic denoting a single-member set (i.e., *same, other*) and a numeric denoting a set of more than two (e.g., *many, every*). In the case of licit *the same few men* and *the other few days*, again I postulate that this is due to a deictic specifying one or the other group from within a larger group-set: cf. *get me the same few men; these other days on the calendar are holidays*.

5.2.3 Deictic elements in the Spec of Infl of DP

Jespersen (1933:85) remarks that pronouns such as *we* and *you* may be rendered less ambiguous by the addition of an appositive noun or clause: cf. *we, brothers*, *you, gentlemen*; and *we, who are brothers* and *you, who are gentlemen*. In a seminal article, Postal (1969:217-24) rejects a derivation where the pronoun is a head N^0 taking an appositive relative (e.g., *we, brothers* \Rightarrow *we brothers*; *you, gentlemen* \Rightarrow *you gentlemen* and *we, who are men* \Rightarrow *we men*; *you, who are children* \Rightarrow *you children*), and argues that in such nominals the pronoun should be analysed as a definite article in determiner position, i.e., in [Det,NP]. Recall from section 2.3.1. Chomsky's early (1970) proposal that [Spec,NP] = [Det,NP]; therefore, Postal's position produces an analysis of:

(297)



We will retain Postal's analysis of (297) in essence, with the slight rejoinder that, as pronominal *we* in this analysis is in a specifier position (i.e., [Spec,NP]), it must always be analysed as a D^2 and not as a D^0 position.

5.2.3.1. Pronouns in [Spec,IP] of DP

Postal argues that, if pronouns were derived from appositive relative clauses, they shouldn't exclude appositive clauses in the environments in which they occur. Yet pronominal forms do exclude appositives, and in the same environments that full DPs do. In (298) the italicised DPs do not allow appositive relatives in contexts where the noun is the object in an interrogative or in certain negative contexts.¹⁹⁴

(298)

- (a) *Did you see *Bill*, who is six feet tall?
- (b) *Who wrote *a novel*, which was published by Blackwell?

¹⁹⁴The sentences in (298) and (299) are starred because a restrictive (vs. nonrestrictive) relative clause is required in these environments for the correct interpretation.

- (c) *No *citizen*, who was wise, remained in the country.
- (d) *None of *the cars*, which were Fiats, were any good.
- (e) *They never insulted *the men*, who were Socialists.

In (299) we see that, if pronominal constructions are inserted in the same environments as the full DPs, they exclude appositive relatives in the same way.

(299)

- (a) *Did you see *us guys*, who are six feet tall?
- (b) *Who insulted *you men*, who worked for the Tories?
- (c) *He didn't like *us citizens*, who remained in the country.
- (d) *He did not insult *you Socialists*, who worked for the council.
- (e) *None of *you guys*, who are swindlers, are any good.
- (f) *Neither of *us lecturers*, who is competent, is quitting.
- (g) *They never agreed with *us planners*, who were experts in the field.

Postal also observes that viewing pronouns as derived from appositive derivations would lead to improper interpretations of certain pronominals as in (300):

(300)

- (a) you troops will embark but the other troops will remain.
- (b) *you, who are troops, will embark but the other troops will remain.

whilst in others there is an improper interpretation as well as ungrammaticality:

(301)

- (a) let us three men leave first
- (b) *let us, who are three men, leave first / let us three, who are men, leave first

Due to these types of arguments, Postal proposes that pronouns such as *you*, *we/us* are *articles* in surface structure, and subject to the same derivational constraints and status as a Det position. It is important to note that, prior to the *Barriers* GB-model (1986) and the *DP-Analysis* (1987), the Det position was not perceived as being confined to X^0 elements, nor was the specifier position of X^{\max} perceived as the site of X^2 subjects (such as the pronominal subjects *you* or *we* in *you guys*, *we men*, etc.). This early conception of things can be appreciated by repeating Chomsky's 1970s' view of X^{\max} :

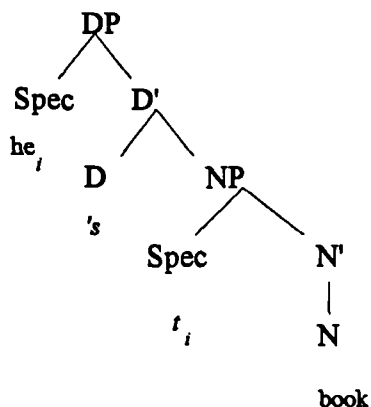
(302)

To introduce further terminological uniformity, let us refer to the phrase associated with N', A', V' in the base structure as the 'specifier' of these elements. Then the elements N', A', V' might themselves be introduced in the base component by the schema: $X'' \rightarrow [\text{Spec}, X'] X'$, where [Spec,N'] will be analysed as the determiner, [Spec,V'] as the auxiliary (perhaps with time adverbials associated) and [Spec,A] perhaps as the system of qualifying elements associated with adjective phrases (comparative structures, *very*, etc.). (1970:164).

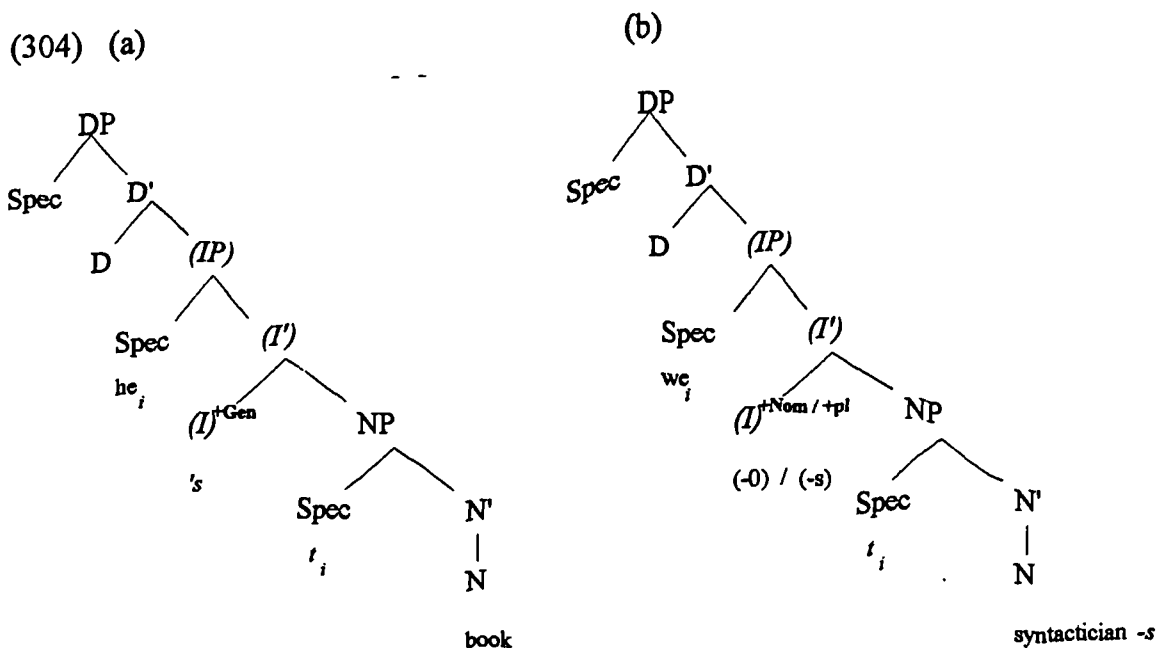
With the 1980s' theoretical clarification of the X^0 and X^2 positions in X^{\max} , and hypotheses such as the the DP-Analysis (cf. section 2.3.1.), the Internal Subject analyses (cf. sections 2.2.1. - 2.2.3.), and my own NumP-Analysis, the perspective in (302) has been considerably refined.

However, since Postal's analysis of pronouns as determiners, various researchers (e.g., Abney 1987; Ritter 1992; Bernstein 1993b; Longobardi 1993; Zwarts 1994) have been adopting *de facto* an analysis of pronouns in D^0 , either via base-insertion or via incorporation. Such a view overlooks a fundamental *implication* of the DP-Analysis, namely that pronouns (as subject specifiers) are in [Spec,DP], not [D,DP]; and also that although pronouns themselves are head Ns, they project to DPs in their position as subject specifiers to an N. Thus they can only occupy an X^2 position, as shown in figure (303).

(303)



In this characteristic DP-schematisation, the DP specifier *he* of [Spec,NP] raises to the [Spec,DP] position for genitive Case-marking by *Poss* 's. The surface derivation is *his book* (cf. fn. 32). Refining this analysis to our composite *Infl in DP* analysis (cf. sections 3.3.3. and section 4.1.), we get figure (304):



In this representation, pronominal *he* in (304) (a) raises to [Spec,IP] (actually [Spec,KP]) in order to acquire the *Poss* *'s* morpheme at PF and derive *his book*. In (304) (b), pronominal *we* raises to [Spec,IP] (again, actually [Spec,KP]) in the same manner but, as it is not a Possessor subject, it acquires nominative Case rather than genitive Case from I (i.e., from K^0).¹⁹⁵ And the plural *-s* morpheme of I (actually in Num^0) is alternatively realised on the head N^0 *syntactician*.

Part of the confusion concerning the Spec and head positions of DPs perhaps stems from an improper interpretation of their internal structure. For example, Longobardi (1994:610) claims that 'two positions have recently emerged about the structure of DPs: one view locates DPs inside NPs, in particular, inside their specifier position; the other, originally stemming from an intuition of Szabolcsi (1983 and subsequent work), conceives of the whole nominal construction as coinciding with DP, and of NP as a complement of the head D (see Abney (1987)'. Longobardi then represents these two positions schematically as:

- (305) (a) $\text{NP}[\text{DP}_{\text{N}}[\text{N}]]$
 (b) $\text{DP}[\text{D}[\text{D NP}]]$

¹⁹⁵Recall from section 4.1. that we are assuming that subject specifiers get a [+Nom] or [+Gen] Case-mark according to their structural position in relation to N. Third person nouns or pronouns in [Spec,NP] typically trigger a [+Gen] feature in the Infl of their DP, while first and second person forms trigger a [+Nom] feature. The matrix DP itself (e.g., *John's book* or *we syntacticians* in (304)) gets Case from an external Infl: cf. *we syntacticians are fanatics*, where the DP *we syntacticians* is Case-marked (i.e., +Nom) by Infl of the clause, whereas its own DP subject *we* is Case-marked (i.e., also +Nom) by the Infl internal to its own DP projection.

I suggest that both of these (underlying) schema represent an inadequate interpretation of the DP, that (a) is in fact the description of a *constituent* of (b) (i.e., the NP), and that (305) is more correctly schematised as:

(306) $DP[D[D NP[DP N[N]]]]$

and, due to Szabolcsi's (1983, 1987) conception of Infl in the nominal, that (306) is more perspicaciously schematised as (307):

(307)
 $DP[D[D IP[I NP[DP N[N]]]]]$

In other words, that a nominal construction is *both* a projection of N^0 to its functional maximum DP, *and* that this matrix DP itself takes another DP in its specifier position.

Now let us look at some surface structures. In (308) we see a possessive nominal in English without an overt determiner in D^0 :

(308) $DP[D[e IP[John_i I['s NP[t_i N[book]]]]]]$

and in (309) we see an example from Finnish with both an overt determiner in D^0 and a genitive morpheme (corresponding to *Poss 's*) in I^0 (or, more precisely, K^0 - cf. sections 4.1. and 4.2.).

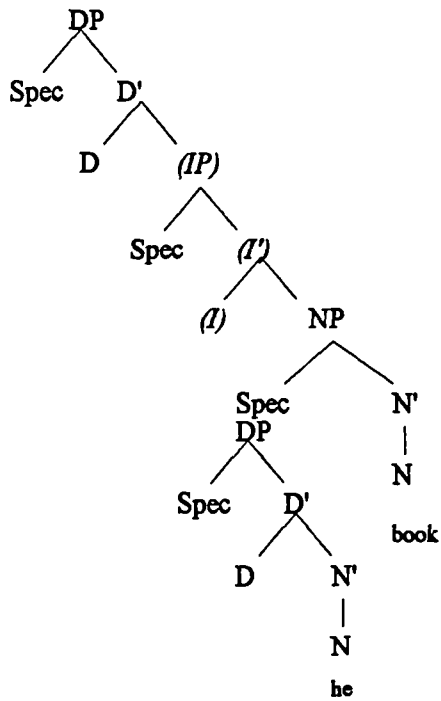
(309) $DP[D[tämä IP[Maija_i I[-n NP[t_i N[kirja]]]]]]$
 this Mary Gen book
 'this Mary's book'

Clearly in these configurations there are two DPs - the matrix DP and its Possessor DP subject (*John* or *sin*). Both DPs take their own Infl, and this Infl contains the ϕ -features of each respective head N. For example, in (308) and (309), the Infl of the matrix DP Case-marks the DP Possessor (*John* or *sin*) as genitive with the affix *'s* or the affix *-n*. Internal to these Possessor DPs, meanwhile, there is the possibility that *another* Possessor DP might occur in the [Spec,NP] position, requiring Case (or other ϕ -features, such as [+pl]) from its own Infl: cf. $DP[D[e IP[our John_i I['s NP[DP_i D[IP[we_j I['s NP[N[t_j N[John]]]]]] N[book]]]]]$.¹⁹⁶ This is shown configurationally in figure (310).

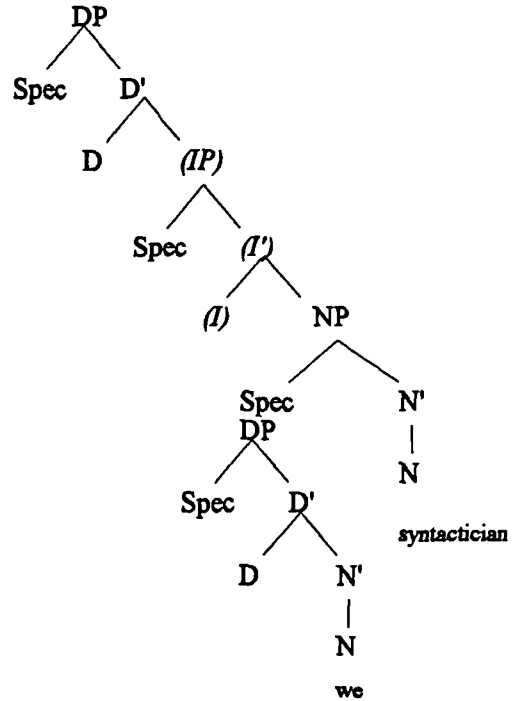
¹⁹⁶That is, *John* in this example may itself take a Possessor subject such as *our*, deriving *our John's book* in some varieties of English

Now let us expand Postal's representation of (297) to show that pronouns are both subject specifiers (i.e., DPs) as well as heads (i.e., N^0). Figure (311) shows two D-structures.

(311) (a)

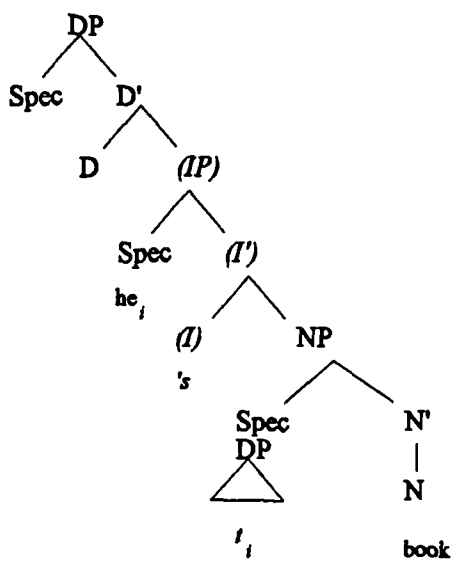


(b)

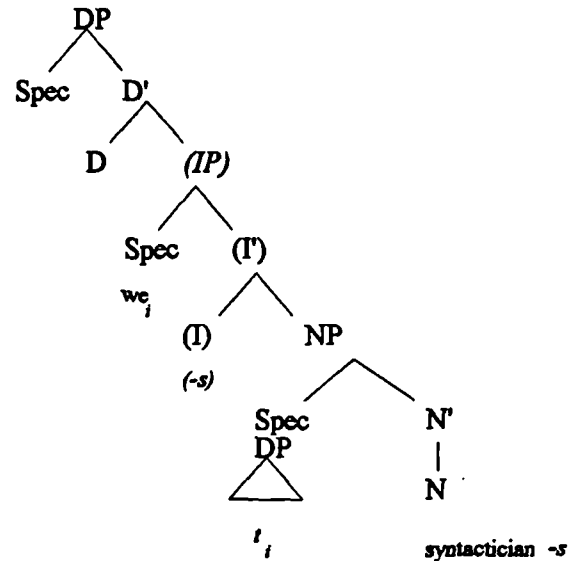


And figure (312) shows the PF-derivation of *his book* and *we syntacticians*.

(312) (a)



(b)



In these underlying and surface representations, pronouns can be clearly seen as both N^0 elements and as D^2 elements. We will thus both agree and differ with Postal's early proposal that pronouns should be analysed as articles in Det (i.e., D^0) position in the NP (cf. figure (297)). Instead, we maintain that pronouns are D *constituents*, but that they retain their N status as N^0 heads of a D^2 *projection*. The representations in figures (311) - (312) outline the movement of D^2 pronouns from their underlying [Spec,NP] position to their ultimate landing-site of [Spec,IP] of DP.

Continuing to refute the idea of pronouns as D^0 , an N^0 such as pronominal *he* or *we* could move to the D^0 within its own DP, but it would have no motivation to do so. And for an N^0 to move out of its DP subject constituent to the D^0 of the matrix DP is even more unmotivated, as well as illicit (cf. Hebrew *ha-hu* (the-he = 'that' (m.)); *ha-zot* (the-it (f.) = 'this (f.)); *ha-ele* (the-they = 'these')). Instead, head Ns such as *he* and *we* in (312) move with their entire DP projections to the matrix [Spec,IP] position (equivalent to [Spec,DP] in the DP-Analysis). At PF they are realised *in situ* in this position. If there is a determiner in the higher D^0 (as in the Hebrew *ha hu more* (the he teacher; 'that (m.) teacher') there is no conflict at PF; and if a particular language makes available the option of *maximal* specifier raising in a DP (i.e., to the uppermost [Spec,DP] position), again there is no conflict, as in this case the pronominal subject simply raises to the maximal [Spec,DP] position which precedes the [Spec,IP] position of the DP (cf. Hebrew *hu ha more*; he the teacher; 'that (m.) teacher'): $DP[D[ha IP[t IP[NP[hu N[more]]]]]] \Rightarrow DP[hu D[ha IP[t IP[NP[t N[more]]]]]]$.¹⁹⁸ Recall from section 3.3.2.1. that the [Spec,DP] position in a *split Infl of DP* analysis may be utilised in languages such as Hungarian, which exercise the option of raising a Possessor subject to a position *exterior* to the Case-marking head (i.e., exterior to I^0 or more precisely, K^0):

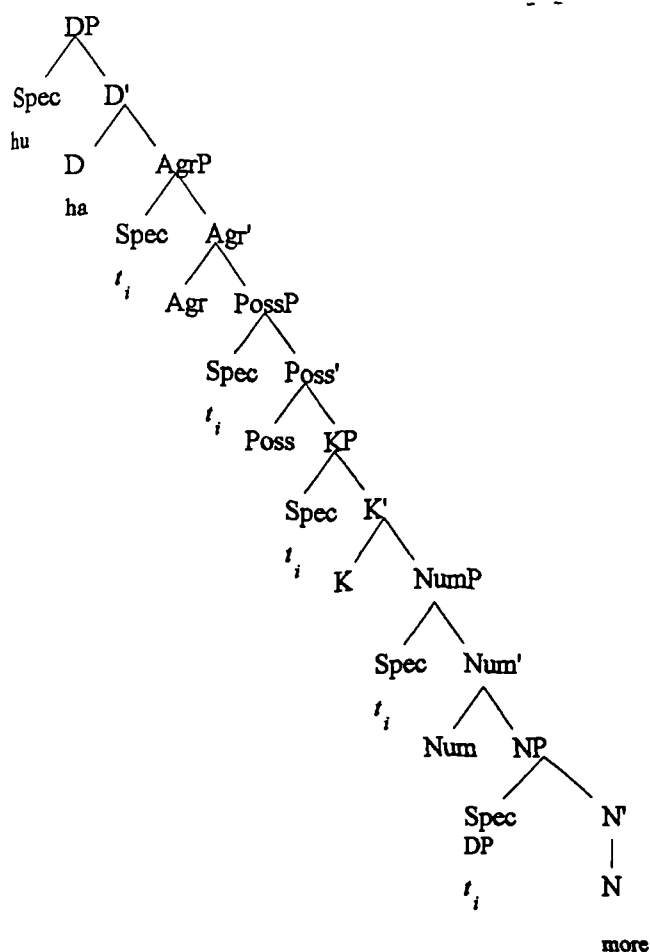
(313) $DP[János-nak_i D[a IP[t_i IP[(-nak), etc. NP[t_i N[könyv-je]]]]]]$
 John-Dat the (Dat) book-3p
 'John's book

This option is represented in figure (314) for both the Hebrew and Hungarian data.¹⁹⁹

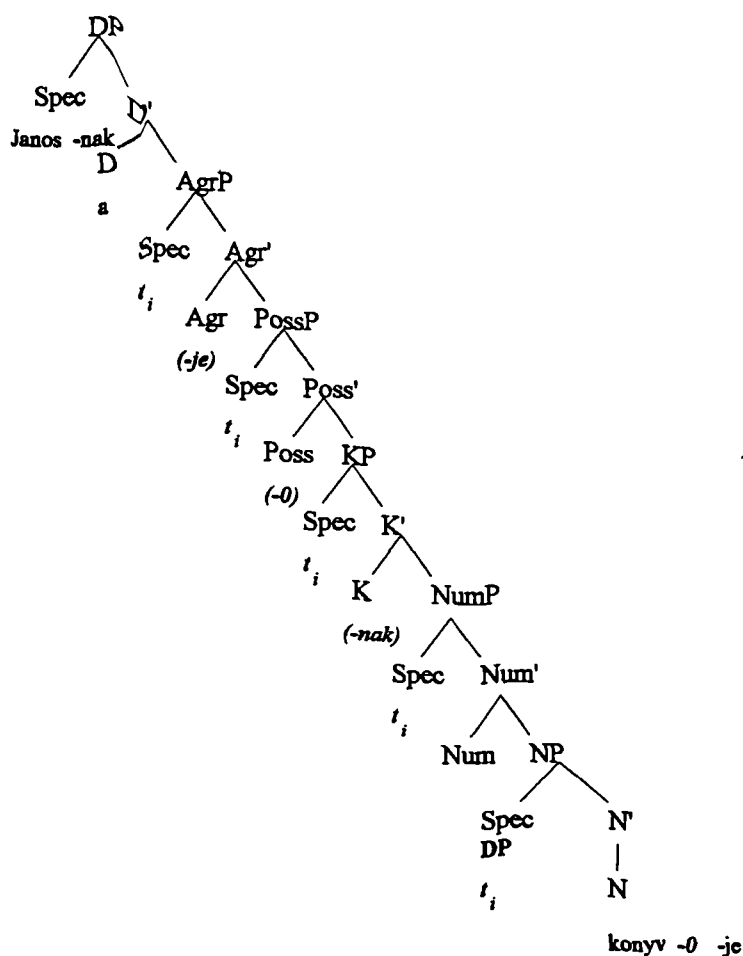
¹⁹⁸These analyses are my interpretations of Ritter's (1992:205-6) Hebrew data, which I believe can be more successfully addressed with an *Infl in DP* analysis.

¹⁹⁹Recall from section 4.1. that, in a fully articulated DP-Analysis, nominal subject specifiers, like clausal subject specifiers, raise to [Spec,KP] for Case-marking and then on to [Spec,AgrP], in order to facilitate the Alternative Realisation of inflectional morphemes on the head N. In languages where further raising is an available option, subject specifiers may raise again to [Spec,DP], as in (314).

(314) (a) Hebrew



(b) Hungarian



Due to our theoretical observations of (307) -(314), we reject analyses which utilise N-to-D movement for the positioning of a pronoun in D^0 (e.g., Ritter 1992; Bernstein 1993; Longobardi 1994; Zwarts 1994), and maintain that the only pronominal movement within DP is Spec-to-Spec movement.

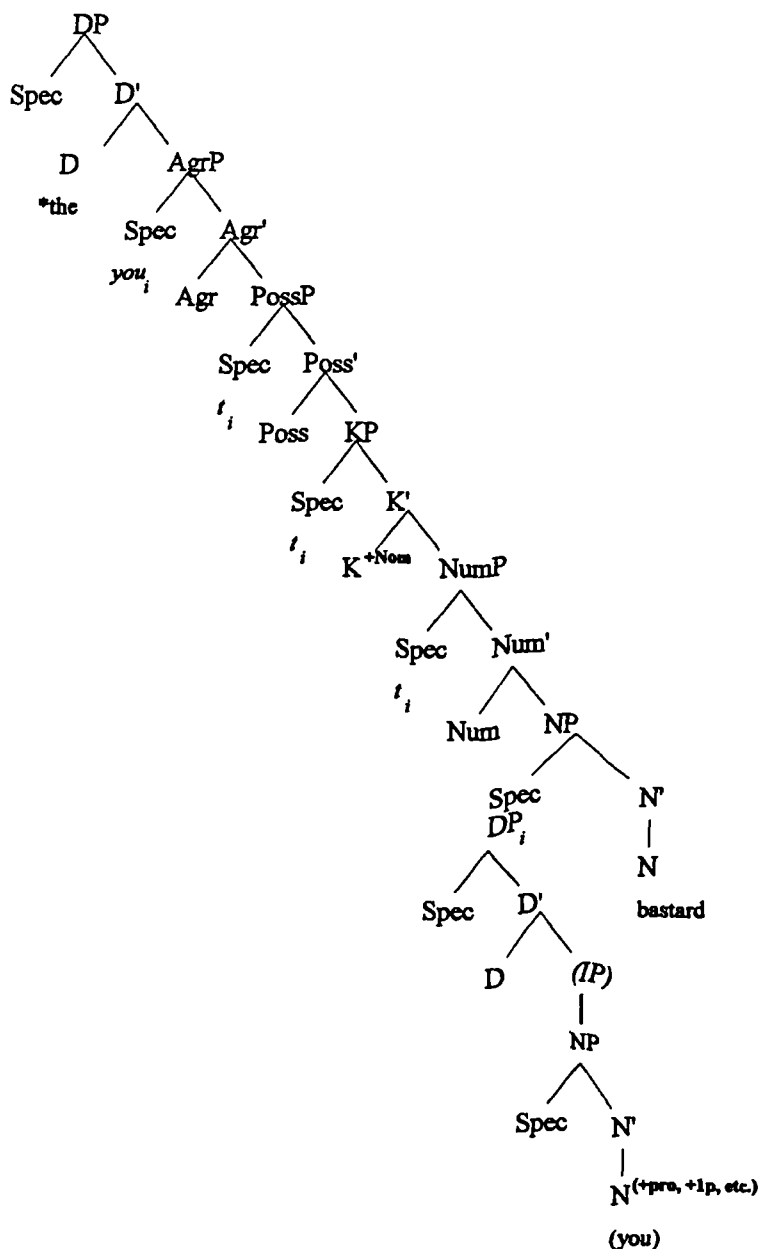
a) Nominative subject pronouns

Concerning singular pronominal subjects as in *I, Claudius* and *you bastard*, these raise to [Spec,IP] for nominative Case-marking, but can raise no farther: cf. **I the Claudius; *you the bastard*. Their raising is the same as the process for possessivisation, except that the pronouns *I* and *you* in these examples are nominative rather than genitive subjects, and are Case-marked accordingly. Nominal constructions such as *I, Claudius* or *you bastard* are instances of a pure subject-predicate relation in an NP (i.e., the 'lexical clause' or *big phrase* of section 1.5. (vii)). A pronoun is inherently definite by its reference

to a particular individual in the extralinguistic world; therefore pronouns are incompatible with a [+def] feature on D⁰, which would produce a 'double Def' construction (cf. section 4.1.1.): cf. **the I Claudius*, **the you bastard*, **the he(s) book*, **the we syntacticians*.

By the same reasoning, pronouns are also incompatible with a [-def] feature on D⁰, which would create a conflict between the definite pronoun and the unrestrictive article: cf. **a I Claudius*, **some you bastard*, **a he(s) book*, **some we syntacticians*. Figure (315) illustrates such a construction.

(315)²⁰⁰



²⁰⁰In this representation we borrow Postal's (1969:214ff.) [+pro] feature on N, to indicate a pronominal vs. a full N form.

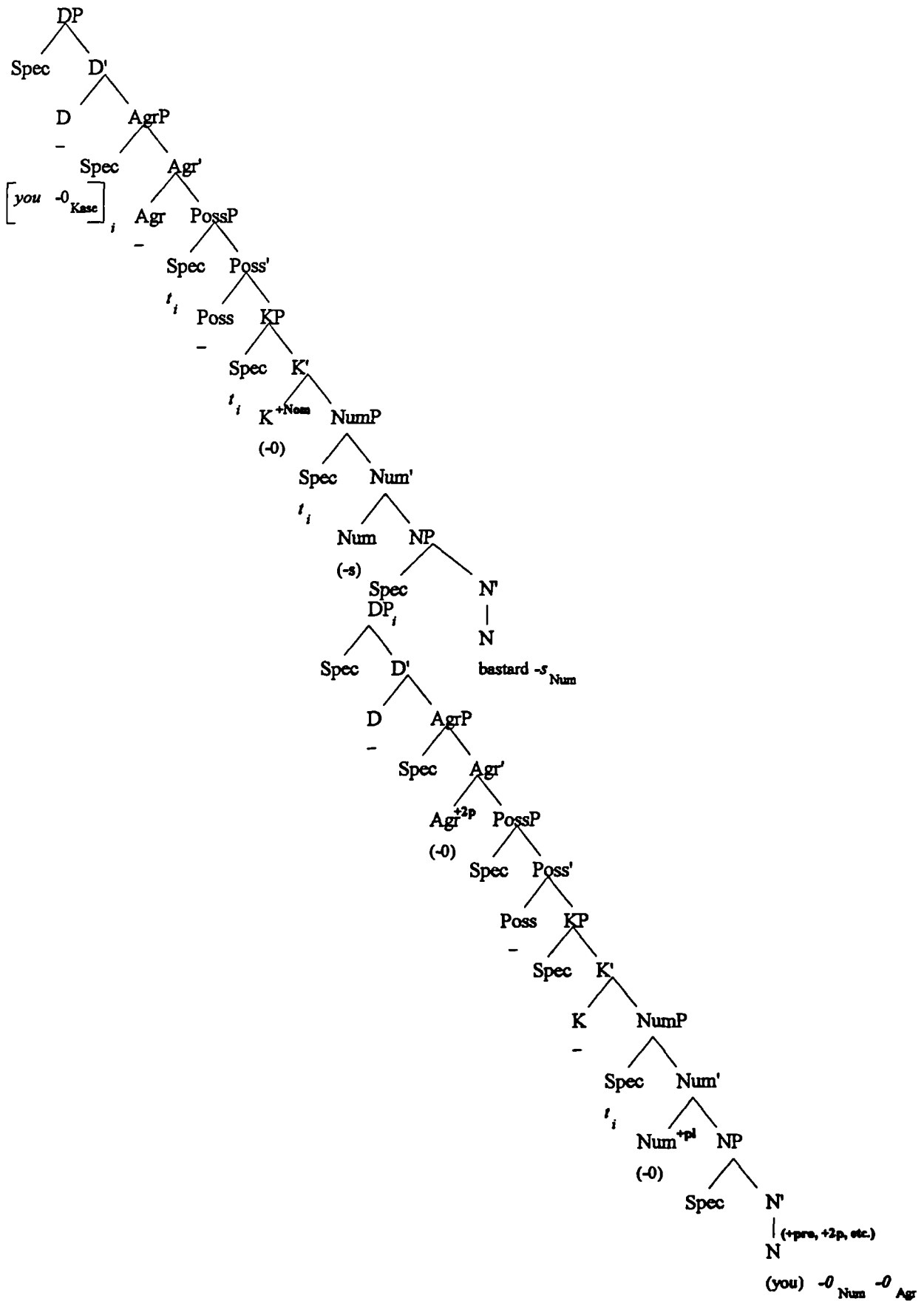
b) Person and number and subject pronouns

Lastly, let us examine person (i.e., *Agr*) and number in subject pronominals.²⁰¹ Pronouns, as head Ns within their DP projection, obtain their person feature and number feature from Infl of this DP. As Infl in DP is still a nascent notion in the literature, various treatments of person and number with respect to pronouns can be found in the literature. Rouveret (1991:364-5) and Ritter (1992:204-6) analyse pronouns as NumP constituents, due to an assumption that the Num⁰ head is the site of the person feature (i.e., [\pm 1st, 2nd, 3rd]) as well as of the number feature (i.e., [\pm pl]). Rouveret claims that pronouns are NPs with inherent person features which raise to [Spec,NumP] in order to share their person feature with Num⁰, while at the same time receiving the number feature ([\pm pl]) from this Num⁰. Ritter claims that 1st and 2nd person pronouns are N⁰ heads which raise to either Num⁰ or D⁰ in order to acquire the person feature (1st and 2nd person features being found in D⁰ and the 3rd person feature being found in Num⁰). Both of these analyses attempt to address the issue of person and number in the DP with an insufficient inventory of functional categories.

Recall that in our expanded Infl in DP analysis, we have available *Agr*, *Kase*, and *Num* categories to accommodate all of the ϕ -features of an N. While many of these nodes may be underutilised for a particular language, we have hypothesised in section 4.1. that nonetheless these nodes exist as UG potentialities, because of evidence from certain languages which do utilise these nodes. It happens that in English the *Agr* morpheme for nouns is always covert (or absent), whereas in Hungarian and Finnish, for example, *Agr* on an N may be overt. *Kase* is assigned internal to a DP only in the case of a Possessor subject (cf. *John's book, their opinions*) or an 'appositive' subject (cf. *I, Claudius, you bastards*). When this happens, *Kase* assigns its morpheme *leftwards* to the subject specifier of the DP. *Agr* and *Num*, on the other hand, always assign (or realise) their morphemes to the *right*; on the subject N in the specifier DP and on the matrix N in the matrix DP. Figure (316) shows the derivation of *you bastards* in English. While this is a complex configuration, it is a fully formalised account for person, number, and Case in subject DPs and in matrix DPs. ϕ -features are shown on *F*-heads only where these categories are required in a derivation; otherwise these nodes lie 'dormant' (indicated by -). The covert morphemes in English are all indicated with a $-\emptyset$ morpheme; for evidence of a language with overt inflectional morphemes on both a pronominal subject N and the head N, recall the Hungarian *te-nek-ed a vendég-e-d-ek*, thou-Dat-2p the guest-Poss-2p-pl; 'thy guests'.

²⁰¹Person as equivalent to *Agr* is discussed in section 4.2.

(316)



5.2.3.2. Titles in [Spec,IP] of DP

Titles, like pronominal subjects, are DPs occupying the underlying specifier position of NP and form a direct subject-predicate link with the head N: cf. *King John*, *Sir Richard*, *Dame Vera*, *Mother Goose*. The titular noun behaves as the subject, while the referent noun serves as the predicate.²⁰² Titular subjects undergo typical subject raising to [Spec,IP] of the DP and the same arguments for pronouns as DPs apply to titles as DPs; i.e., that they exclude appositive relativizers where full DPs would do so, as in (318).²⁰³

(318)

- (a) *Did you see King John, who is a royal?
(cf. *Did you see the king, who is a royal?)
- (b) *Who insulted Sir Richard, who was knighted recently?
(cf. *Who insulted the earl, who was knighted recently?)
- (c) *No Dame Vera, who was worth her salt, sang at Hyde Park
(cf. *No entertainer, who was worth her salt, sang at Hyde Park)
- (d) *Lord, who is a Snowdon, is a snob
(cf. You Lord Snowdon are a snob)
- (e) *Mother, who is a goose, rears goslings
(cf. Mother Goose rears goslings)
- (f) *I, who am a queen and a mother, grant thee leave
(cf. I the Queen Mother grant thee leave)

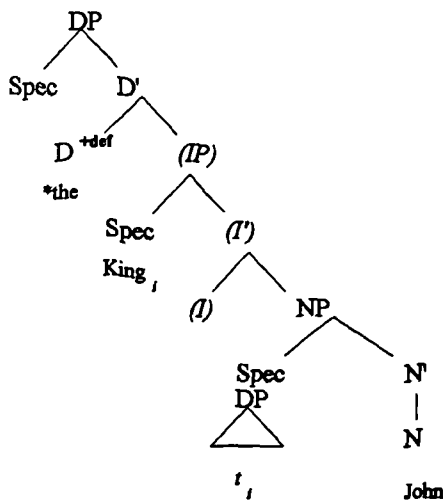
Titular subjects may raise to [Spec,IP] in the matrix DP projection but no farther: cf. *the Queen Mother*, *the Dowager Duchess*, *the Doctors Brown* and **Queen the Mother*, **Dowager a Duchess*, **Doctors the Brown*. Some but not all titular subjects have the option of occurring in conjunction with an overt D: cf. *the Queen Mother*, *the Dowager Duchess* and *the Doctors Brown* but **the King John*, **the Sir Richard*, **the Dame Vera*. The grammaticality or ungrammaticality of such strings is again sourced

²⁰²If this seems a somewhat innovative concept, it is no more extraordinary than viewing *John* as the subject of *story* or of *reconstruction* in nominals such as *John (s) story* or *John (s) reconstruction of the village* or *John (s) reconstruction of the crime*. For such subjects of noun phrases, the possible θ -roles range from Possessor to Agent to ? (cf. Chomsky 1986a:194-5 and fn. 142). For the titular subject of a noun phrase, I can only speculate that a θ -role of something like 'Designator' might be appropriate.

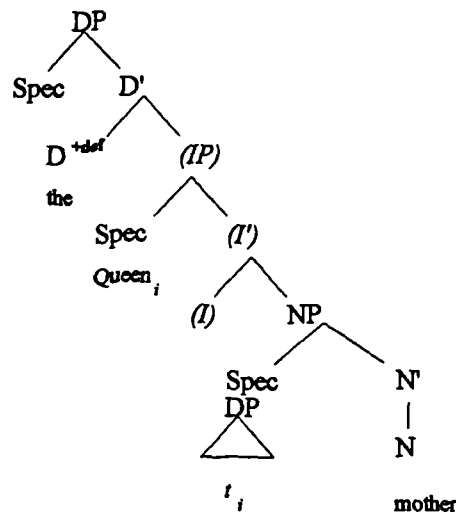
²⁰³Recall from fn. 194 that the starred examples in (318) are starred either because a nonrestrictive clause is inappropriate in these environments, or because a nonrestrictive clause would lead to an incorrect interpretation.

in feature-specification. *The Queen Mother* in English is acceptable whereas **the King John* is not because titular *Queen* serves to identify one individual out of a generic set of mothers, whereas titular *King* can only refer to the individual referent named *John* (inherently [+def]) in *King John*. Thus there is a 'double def(initeness)' conflict on D⁰ in **the King John* where there is not in *the Queen Mother*.²⁰⁴

(319) (a)



(b)



The uniqueness of certain proper names likewise rules out the co-occurrence of an indefinite determiner in D⁰, cf. **a King John*, **a Sir Richard*, **a Lord Snowdon* but *a Queen mother*, *a Dowager duchess*, *a Doctor Brown*.

5.2.3.3. Proper Names in [Spec,IP] of DP

Finally, we will analyse proper names in the DP (e.g., *Tom thumb*, *Peter rabbit*, *Jack frost*, *Tinker bell*, etc.) as subject specifiers along with pronouns and titles, for the same arguments given in (318): cf. **did you see Tom Thumb, who is six inches tall*; **who knows Peter Rabbit, who lives in Wonderland*; **Jack, who is a frost*, **Tinker, who is a bell*, etc.²⁰⁵ Proper names, like titles, originate in [Spec,NP] of DP and raise to [Spec,IP] of DP.

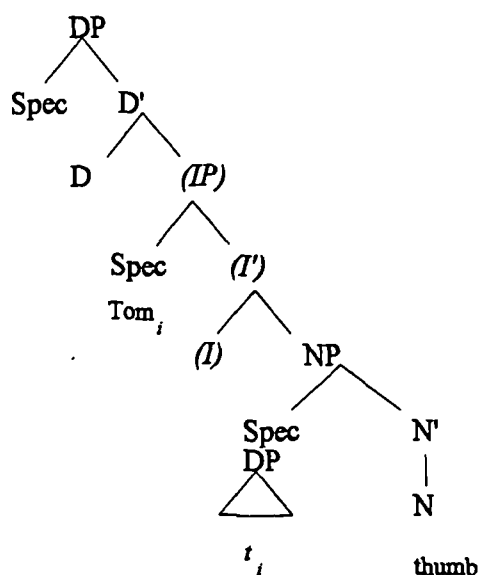
Proper names in English are noteworthy in that they sometimes enjoy the option of raising to a position exterior to IP in the DP (similar to the option that pre-determiner

²⁰⁴The same holds for *dowager* and *Brown*; each of these nouns signifies a generic set, one of *dowagers* and the other of families named *Brown*.

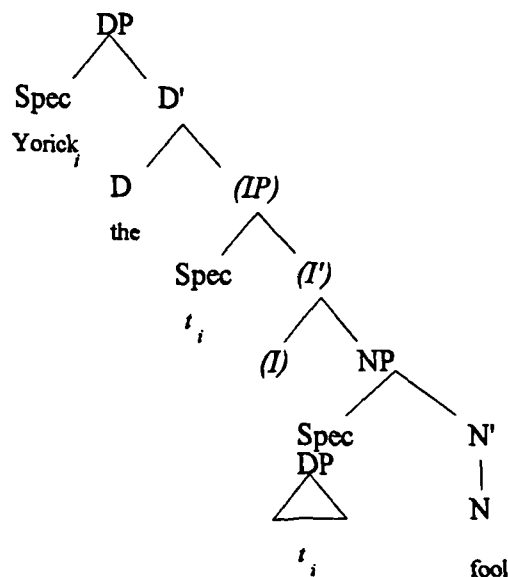
²⁰⁵For the possible θ -role of a proper name subject in nominals, again I speculate that something like 'Token' (as in *Tom thumb*, *Peter rabbit*, *Jack frost*) might be applicable. (Cf. fn. 202).

Possessors exercise in Hungarian): cf. *Peter the Rabbit*, *Yorick the Fool*. In such cases the proper name denotes a unique member of a set (e.g., of rabbits, of fools). But then why should **Tom the Thumb* and **Tinker the Bell* be ungrammatical, where the proper names also denote unique members of a set (i.e., of thumbs or bells), when *Peter the Rabbit* and *Yorick the Fool* are grammatical? And, equally perplexing, why is **Yorick Fool* ungrammatical? These questions pose a provocative call for further investigation into the syntax and semantics of determiner systems, which I will nonetheless conclude here. Figure (320) shows my analysis of *Tom Thumb* and *Yorick the Fool*.

(320) (a)



(b)



5.3. Evolution of Num

In section 5.2. we established a taxonomy for the contents of D. Because of our early arguments in section 3.3.2.1. concerning endocentric head-realisation (i.e., one head = one phrasal node) within our multi-categorial framework, deictic elements in a D^0 which co-occur with numeric elements require the existence of another head category, so that both may coexist legitimately. As we've suggested, this is the head category Num^0 : cf. *the five demands*, *all the demands*, *the third such demand*, *the too many demands*, etc.

5.3.1. Bloomfield's subclass of numeratives

Bloomfield (1933:205-6) subdivides his *numerative* class of adjectives into the following types (cf. section 5.1.1):

(321)

- ① those preceding a determiner (e.g., *all the apples, both the apples*)
- ② those following a determiner (e.g., *the other apples*)
- ③ those preceding the indefinite article (e.g., *many a gambler, such a gambler*)
- ④ those following the indefinite article (e.g., *a few years, a hundred years, a million years*)
- ⑤ those used with definite nouns (e.g., *this same book, the very day, my one hope*)
- ⑥ those used only with indefinite nouns (e.g., *much water, more water, less water*)
- ⑦ those used with both types of nouns but only with definite determiners (e.g., *all (the) milk*)
- ⑧ those used only with plural nouns (e.g., *both cups, few cups, many cups, five cups*)
- ⑨ those used only with singular nouns (e.g., *one sugar, much sugar, little sugar*)
- ⑩ those used predicatively and attributively (e.g., *they were many/few; the boys were all/both there*)

This list addresses the syntactic *behaviour* of various numeratives, and will be useful for determining some of the constraints that we will outline for pre-N word order in the DP. However, we have yet to classify the above into a distinct taxonomy.

5.4. Contents of Num

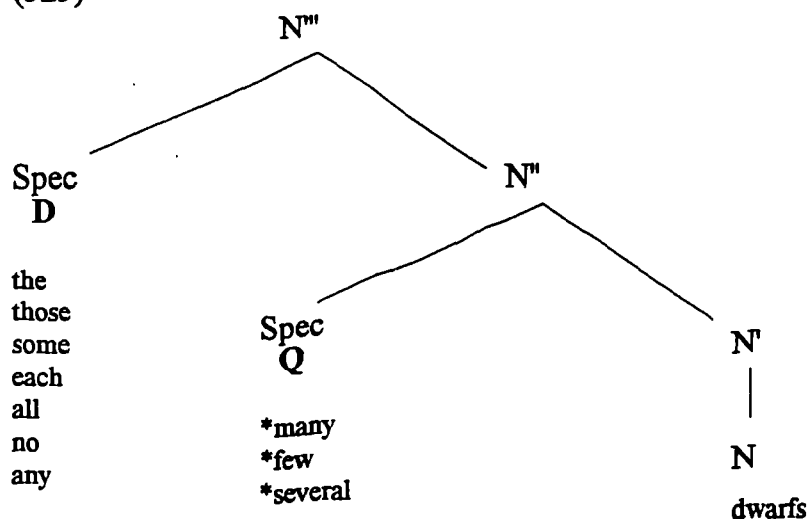
For the contents of Num we will again refer to both Jespersen (1924, 1933) and Jackendoff (1977). In the Num class then, I propose the following elements:

(322)

- (a) [+pl] morpheme (e.g., *day -s / box-es / ox -en / sheep -Ø*, etc.)
- (b) cardinals (e.g., *one day; five boxes; six oxen, ten sheep*)
- (c) ordinals (e.g., *first child; third loss; fiftieth attempt*)
- (d) quantifiers (e.g., *each, every, any, all, much, little, many, few, another, no, some, either, neither, both, enough*)
- (e) degrees (e.g., *so few ideas, too many excuses, how little substance, very few dwarfs, as much reason, this much wastage, that little amount, what a berk, such arrogance, fool enough, total commitment, full capacity, only members, just women*)²⁰⁶
- (f) measures (e.g., *half distance, quarter mile, a third (of) the way, a fifth (of) the bottle*)²⁰⁷

Let us begin our Num discussion by reviewing Jackendoff's (1977) position on the need for two distinct categories to specify an NP:

(323)



Recall that, according to Jackendoff's conceptualisation of (323), strings such as **the some dwarfs* and **those each dwarfs* are ungrammatical because they involve two determiners occurring with a member of the Q node; strings such as **some many dwarfs* and **no several dwarfs* are ungrammatical because they involve an inherently quantificational determiner occurring with a member of the Q node; and strings such as **those many few dwarfs* and **no all several dwarfs* are ungrammatical because they involve a determiner occurring with two members of the same Q node. In section 5.2.1. we suggested an amended interpretation of (233) whereby some of the D elements are re-located back into their original Q node, which we have renamed Num. This produced our revised representation of (278), which we repeat here as (324):

²⁰⁶Bresnan (1973) analyses *such* as [Det, QP]; I claim that *such* may be either deictic, as we have seen in section 5.2.3.2 (e.g., *such a man as that*), or numeric (e.g., *such a fright!*): cf. DP[D[such DP[D[a NP[N[man]]]]]] and NumP[Num[such DP[D[a NP[N[fright]]]]]]. Note the recursion of D in the first string.

As with the deictic D category, the numeric Num node may contain elements of different categorial type, such as quantifiers and adverbs (cf. figure (150) concerning Num and PP complements). Hence I analyse A⁰ elements such as *total*, *full*, *only*, and *just* as candidates for insertion under Num⁰. Recall from sections 2.4.3. (Num and AP complements) and 2.5.2. (Num and PP complements) that the versatility of Num⁰ is due to the fact that Num has no lexical content of its own and thus serves only as an ancillary 'host' position for insertion of functional morphemes at PF.

²⁰⁷Recall from our discussion of APs and PPs in sections 2.4.3. and 2.5.3. that a measure phrase such as *two day in two day journey* would be a NumP subject specifier to the N *journey*: DP[D[a NumP[two day N[journey]]]].

<i>all</i> , NUM, +Q, +Pl, +Totality, +Count, _____	{ DP NumP }	<i>all the boys/all boys</i>
<i>some</i> , NUM, +Q, ±Pl, ±Count, _____	{ NP DP NumP }	<i>some sugar/some (of) the sugar/some cakes</i>
<i>few</i> , NUM, +Q, +Pl, +Count, _____	{ DP NumP }	<i>few (of) the coins/few coins</i>
<i>little</i> , NUM, +Q, -Count, _____ NP		<i>little milk/little money</i>
<i>enough</i> , NUM, +Q, ±Pl, ±Count, _____	{ NP DP NumP }	<i>enough coffee/enough (of) the coffee/enough cups</i>
<i>enough</i> , NUM, +Deg -Count, NP _____		<i>fool enough/man enough</i>
<i>so</i> , NUM, +Deg, ±Pl, ±Count, _____	{ NP DP NumP }	<i>so much cash/so few (of) the ladies /so few ladies</i>
<i>half</i> , NUM, +Meas, ±Pl, ±Count, _____	{ NP DP NumP }	<i>half alcohol/half a pint/half pints</i>
<i>quarter</i> , NUM, +Meas, -Count, _____	{ NP DP NumP }	<i>quarter jug/quarter (of) a jug/quarter jugs</i>

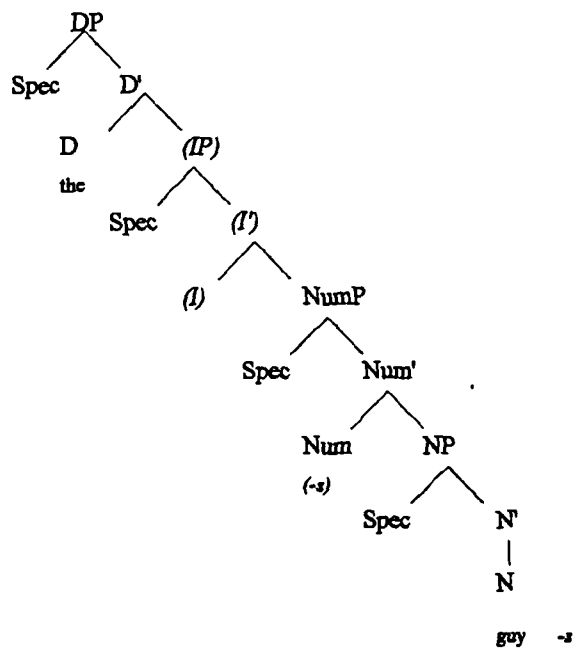
In the next few sections we will discuss the various possible realisations of these features on Num⁰, the sorts of categorial complements (e.g., NP, NumP, DP) that these features entail, and their co-occurrence restrictions with the features of a D⁰.

5.4.1. [+Pl] in Num

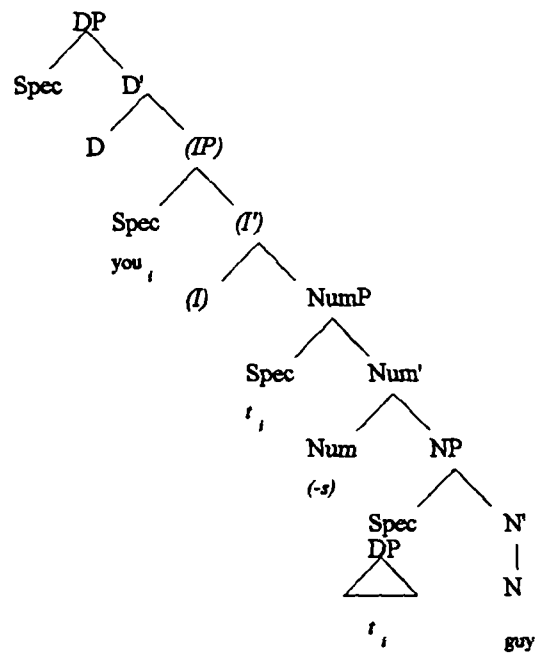
In the simplest instance a [+pl] feature in Num⁰ follows a D⁰ (e.g., *the guys*) which may be empty (e.g., *guys*), or occurs in Num⁰ in a pronominal construction such as *you guys*. The latter construction disallows both definite and indefinite articles, due to the inherent definiteness of the subject *you* (cf. section 5.2.4.1. (315)), which raises to the [Spec,IP] position of the DP: cf. **those you guys*, **a you guys*. In addition, *you* may not raise further to [Spec,DP] in English, as this is not an available option in this language: cf. **you the guys*.²⁰⁸

²⁰⁸Where pronominals do licitly precede determiners in English, I would say that it is an instance of a true appositive construction, where the whole DP with its pronominal subject takes an appositive relative: *you e, the guys (I'm talking about)*.

(326) (a)



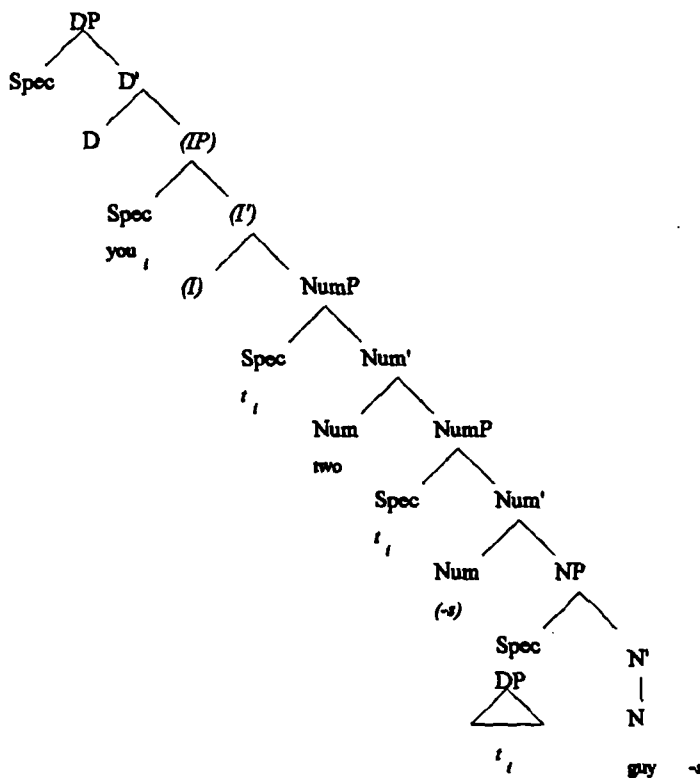
(b)



5.4.2. Cardinals and Ordinals in Num

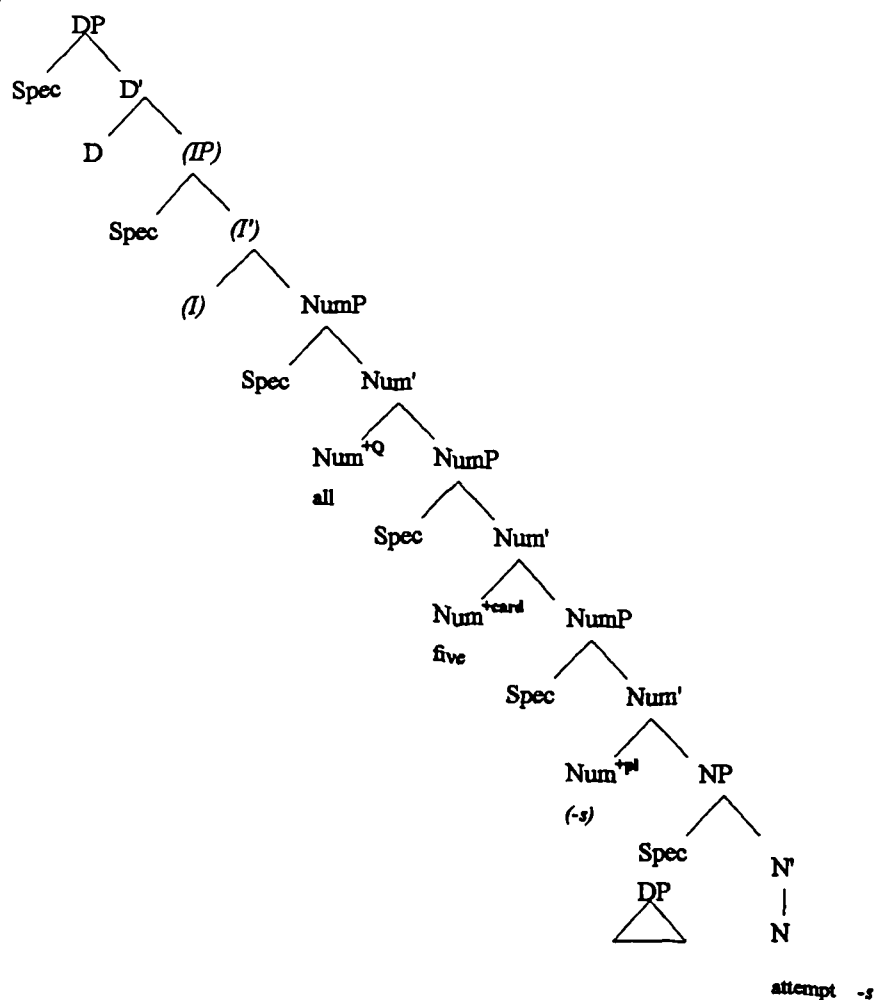
These are a straightforward instance of a lexical numeral occurring in Num⁰. Numerals in Num⁰ may follow a D⁰ (e.g., *the seven sons*), another Num⁰ (e.g., *all five*, *every third*), or a raised subject pronominal as in *you two guys*:

(327)



In (327) a lexical numeral in the higher Num⁰ occurs in conjunction with the [+pl] morpheme in the lower Num, which is alternatively realised on the head N *guy*. This involves a recursive Num-NumP sequence. Recursion of Num can be extended indefinitely: cf. *two attempts*, *all five attempts*, *every third attempt*, etc. I have postulated in section 5.2.3.2 that the mechanism of lexical *blanketing* will license all of the *F*-projections of a head N⁰, as long as the contents of these *F*-heads are distinct and compatible. Figure (328) shows characteristic numeric features on different Num heads, e.g., [+Q], [+cardinal], [+pl]. This brings us to **quantifiers** in the next section.

(328)



5.4.3. Quantifiers in Num

We will include in our list of nominal quantifiers such terms as *each*, *every*, *any*, *all*, *much*, *many*, *little*, *few*, *some*, *no(ne)*, *either*, *neither*, *another*, *both*, *some*, *enough*, and *ever* (cf. Jespersen 1933:180-87; Jackendoff 1977:104-7; Bresnan 1972:285). Of these quantifiers, *enough* may be both a quantifier and a degree element: cf. *enough pudding*, where *enough* quantifies *pudding*, and *man enough*, where *enough* indicates degree.

In the case of *either*, the unspecified set is restricted to two members, and, whilst *either* has scope over both members, it refers to only *one* of them: *either man can supply you with the details*. Likewise, *any* is numeric in that it indicates a *single* member of a set (e.g., *any girl*) which may itself contain groups or measures of its members: e.g., *any girls* (i.e., any group of the girls); *any milk* (of the pints on the shelf).²⁰⁹ *Both*, like *either*, quantifies a set which is restricted to two members; but, whereas *either* has reference to an individual member, *both* refers to the two. *Each* and *every* are rather more complex in that they have universal scope over a numerically unrestricted set but suggest reference to an individual member (cf. *each boy* and **each boys*, *every girl* and **every girls*); whereas *all* has universal scope and reference over the full set of members (cf. *all boys* and **all boy*). And *neither* quantifies no members from a dual set whereas *no* quantifies none out of an unrestricted number in the set.²¹⁰

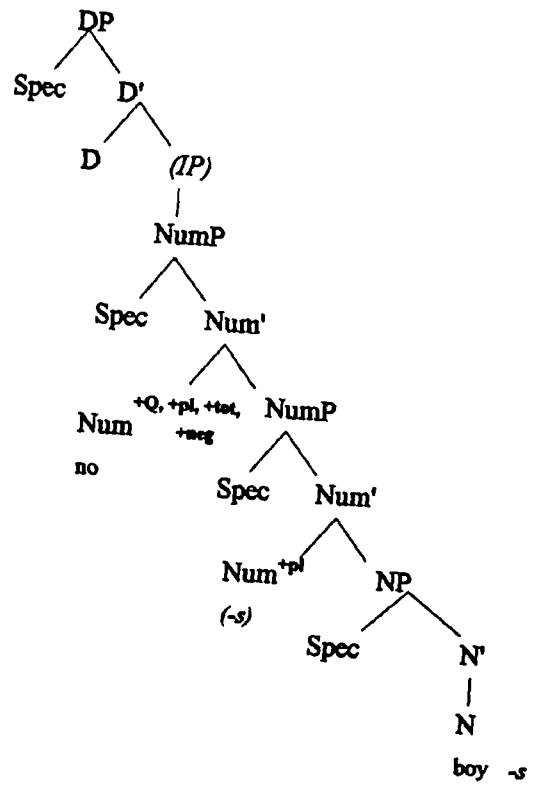
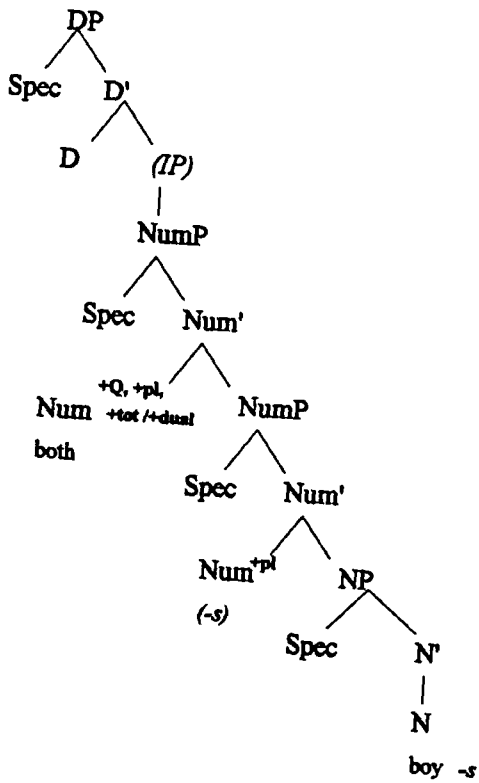
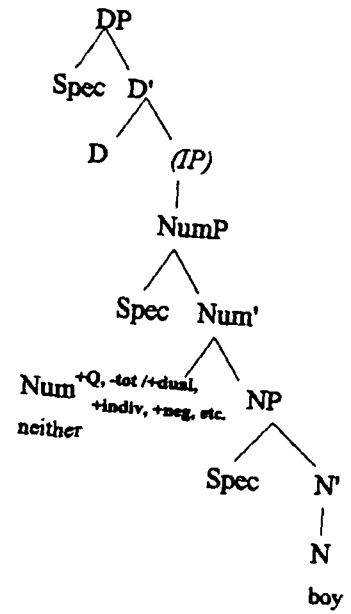
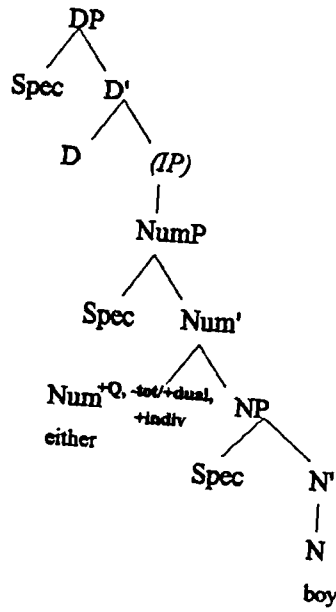
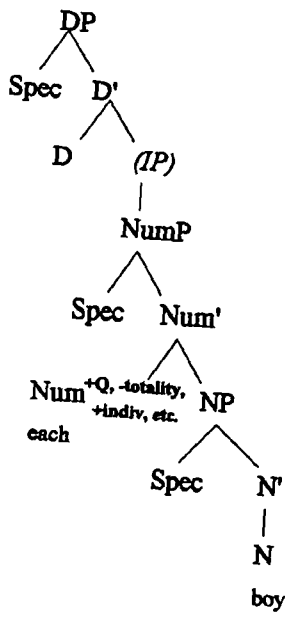
In order to address these various quantifier differences, I propose to utilise Farkas' (1990) *feature cooccurrence restriction* (recall from section 4.3.2.2. this constraint for the feature-pair of [+fem] and [+pl] on Num⁰ in Romanian). Certain feature-pairs as well as features are required on Num⁰, in order to license the insertion of certain Qs at PF. For example, in order for *both* to be realised under Num, Num⁰ must carry, in addition to [+Q] and [+pl], the feature-pair of [+totality] / [+dual]: cf. *both boys*.²¹¹ Where this feature-pair is missing, the insertion possibilities are unconstrained: cf. **every boys*, Δ *some boys* (where *some* does not necessarily refer to two).²¹² *Either*, on the other hand, might be characterised by the feature-pair [-totality] / [+dual], as well as the features [+Q] and [+individual] on Num⁰, to suggest its reference to an individual member of the set: *either boy*, *either (of the groups of) boys*. And *neither* is similar to *either* in requiring the same feature-pair of [-totality] / [+dual] on Num⁰ but, along with [+Q] and [+indiv], it requires an additional [+neg] feature, in order to license *neither boy* whilst ruling out Δ *either boy* (where the Q *either* is not restricted to a negative quantity), **all boy* (where the Q *all* is not restricted to duality), **neither men* (where the Q *neither* is not compatible with plurality), etc. There are other feature-pairs that I have doubtless overlooked here, but by utilising the strategy of *feature* as well as *feature-pair* specification, we can considerably limit the number of illicit strings that might occur in Num-(Num)-NP strings. Figure (329) (a) - (e) exhibits various feature groupings as they might appear on Num⁰.

²⁰⁹Deictic *other*, we recall, points out an opposing member of a set: *any other girl*. When paired with a numeric, *other* is deictic in that it selects from numeric groups: cf. *two other men*, *the other two men*.

²¹⁰*None* is historically a complex of the Q *no* and the numeral *one*, where *one* restricted the set to a single member, e.g., *no one (man)*; therefore, I analyse *none* of today as a complex Q numeric (i.e., in Num⁰ with a +Q feature). (Cf. Jespersen 1933:187).

²¹¹Cf. Dougherty (1970:866-73) for various features on quantifiers. The notion of *feature-pairing* is my own.

²¹²Recall from fn. 184 that the Greek letter Δ is used to designate 'different' from the intended meaning.



5.4.3.1. Partitives and pseudo-partitives

Now let us look at so-called *partitive* phrases such as *a few of*, *many of*, *all of* (e.g., *a few of the men*, *many of the buses*, *all of the horses*), which Jackendoff included in the quantifier class. Abney (1987:296-7) rejects analyses of dangling 'of' prepositions in partitive constructions, and observes that the DP complement to P is *referential* in phrases such as *a number of the men*. In this construction *number* behaves as a quantifier, so that the PP may be extracted: cf. *of the men*, *a number like beer*; *of the men*, *a few like beer*; *of the men*, *many like beer*. Accordingly, let us say that in these partitive phrases the DP *the men* is referential and is quantified by *number* or *few* or *many*: i.e. Num[*number* DP[*the men*]]; Num[*few* DP[*the men*]]; Num[*many* DP[*the men*]]. For pseudo-partitives such as *a number of men*, however, Abney claims that the noun *men* is *predicational* to the noun *number* (which implies an underlying structure of $_{NP} [\textit{number} \textit{N} [\textit{men}]]$), with *number* the DP subject specifier to *men*). For these constructions, I will differ from Abney and analyse the noun *number* as a head N taking an NP complement (*men*) at D-structure.²¹³ This accounts for the unextractability of the PP in pseudo-partitives, since complements are not extractable: cf. **he employed of physics, a student*, **she is of substance, a woman*, **I need of men, a number*. Prepositional *of* is purely a 'dummy' Case-marker in all of these examples, so it is not part of the quantifier (e.g., *number*, *few*, *many*) or of the noun (*number*). Finally, I agree with Abney that *a number of the men* and *a number of men* are different structures, but assign them the following analyses: DP[D[a IP[Γ NumP[Num[*number* DP[D[the IP[Γ NP[N[*men*]]]]]]]]]]]]]]]]]]]] and DP[D[a IP[Γ NumP[Num[NP[N[*number* NP[*men*]]]]]]]]]]]]]]]]]]]]]. Concerning complementation in partitives and non-partitives, *of*-phrases are instances of a Q subcategorising a subset of a definite set (i.e., *of*-DP), whereas quantifiers subcategorise a subset of a non-definite set (i.e., *Q*-NP): cf. DP[D[(a) IP[Γ NumP[Num[*few/all/many/some* (of) DP[D[the IP[Γ NP[N[*men*]]]]]]]]]]]]]]]]]]]] and DP[D[IP[Γ NumP[Num[*few/all/many/some* NP[N[*men*]]]]]]]]]]]]]]]]]]]]].

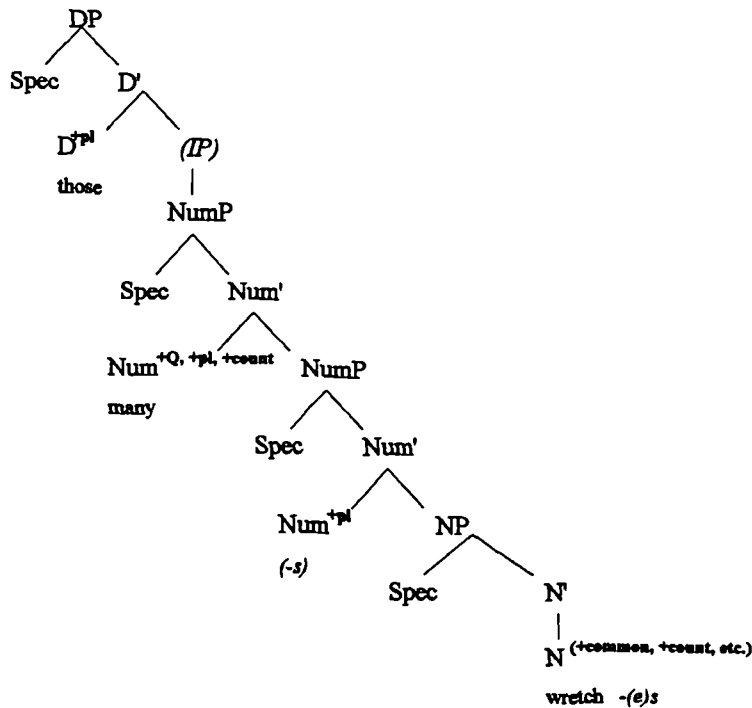
5.4.3.2. Harmony between D and Num

Where there is a cooccurrence of quantifiers and deictics, we have noted in section 5.2.2. that D⁰ in English inflects with a [+pl] feature only in the case of the demonstratives *this* and *that* (cf. *these coins*, *those helmets*); and that a plural determiner in D⁰ may occur with a quantifier in Num⁰ which may itself precede a plural noun (e.g., *these few coins*,

²¹³This is consistent with Jackendoff's (1977:108) analysis of partitive *of*-phrases. Recall from section 1.5. (77) that *nonpropositions* (e.g., $_{XP} [e \textit{X} [\textit{X}]]$) may be XP complements to a head. And whilst I do not discount the possibility that *number* could be the subject of *men* (cf. fn.197), this does seem counterintuitive where a complementation analysis is available.

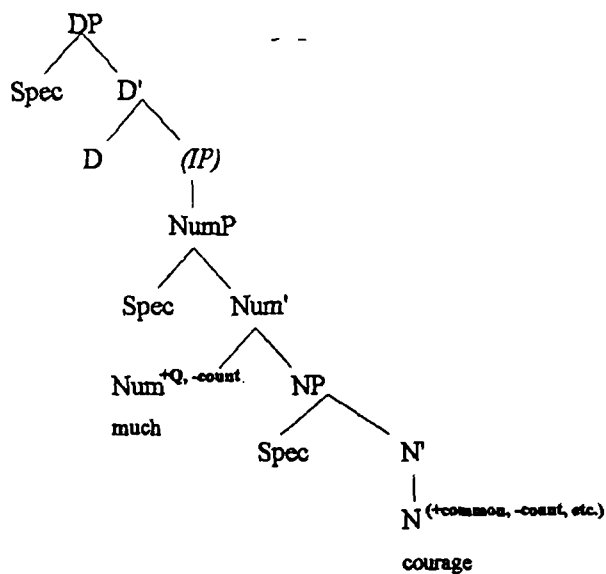
those many wretches). In this case, in order to avoid competition between [+Q] and [+pl] for the *Num* node, *Num*-is-recursive; and for number-agreement of the demonstrative, the [+pl] feature of the lower *Num*⁰ raises to both the higher *Num*⁰ and to *D*⁰.

(330)



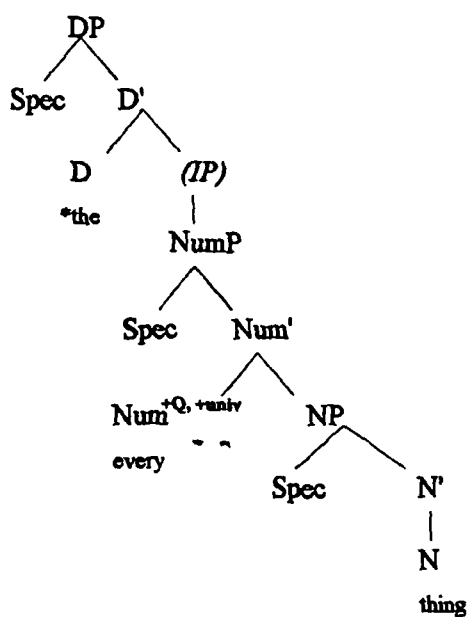
The [+pl] feature projected onto the higher *Num*⁰ allows the insertion of plural quantifiers like *many* whilst ruling out singular quantifiers such as *each* (cf. *many wretches*; **each wretches*). Furthermore, certain features of *N*⁰ may be required to raise to the higher *Num*⁰, in order to derive an appropriate deictic-numeric string at PF. In figure (330) a [+count] feature as well as [+Q] is required on upper *Num*⁰, in order to limit the insertion possibilities to quantifiers which may take countable nouns. This allows instances of *those many wretches* while ruling out **those much wretches*. Similarly, a [-count] feature copied to a *Num*⁰ licenses only the insertion of quantifiers which may take mass nouns, allowing *much courage* but ruling out **many courage*, as in (331).

(331)



Combinations such as **this all things* and **these every things* are illicit due to a feature-conflict between D^0 and Num^0 : a [-pl] determiner such as *this* is compatible with a single-member set, whereas a [+univ] quantifier such as *all* is compatible with a multiple-member set; and a [+pl] determiner such as *these* specifies particular members of a set, whereas [+univ] *every* refers to every member of a set without discrimination. The same applies to **the every thing* and **a all thing*: *a* or *the* signify a single unit whereas *every* and *all* signify many units (of a set), so that [-pl] determiners in D^0 can not licitly appear with a [+univ] feature in Num^0 .

(332)



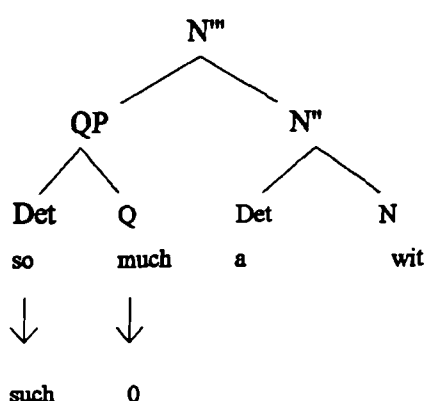
5.4.4. Degrees and Measures in Num

The last of the numerics to be discussed are the degree and measure elements found in nominals. Degrees include elements such as *so*, *too*, *very*, *how*, *as*, non-demonstrative *this* and *that*, *what (a)*, *such (a)*, *enough*, and possibly *total*, *full*, *only* and *just* (cf. Jackendoff 1977:104, 143-4; Bresnan 1972:285): e.g., *so few ideas*, *too much confidence*, *very little purpose*, *how few bargains*, *as little reason*, *this many mistakes*, *that little amount*, *what a berk*, *such arrogance*, *fool enough*, *total commitment*, *full capacity*, *only members*, *just women*.²¹⁴ *Enough* as a degree word undergoes *Enough-Shift*, in order to permute to the right side of the N (i.e., [enough X → X enough]; cf. Bresnan 1973:285). Degree *enough* may subcategorise only a [-count] noun in its generic, or abstract, sense: cf. **fools enough*; **the fool enough*. Of the other degree Nums, those that have comprehensive or restrictive meaning can subcategorise an NP or DP directly, cf.: *what nonsense*, *such a fanatic*, *time enough*, *total regard*, *full pleasure*, *only the dog*, *just money*.

But more often degree Nums express an 'intensifying' effect, and so typically precede certain quantifier Nums in recursive Num configurations: cf. *so little sense*, *too few excuses*, *very many rejections*, *how little faith*, *as much cause*, *this much delay*, *that little amount*, *what few exhibits*, *such little imagination*.²¹⁵ For this notion we return to Bresnan (1972, 1973).

Bresnan (1972: 228-9; 1973:299-305) analysed words such as *so*, *too*, *as*, *that* as those which act as specifiers to quantifiers such as *much*, *many*, *little*, *few*. Thus, for Bresnan, QP → Det QP:

(334)²¹⁶



²¹⁴As per fn. 200, numeric (i.e., emphatic or intensifying) *what* and *such* in Num as in *what lunacy*, *what a lunatic* and *such intelligence*, *such a brain* are distinct from deictic *what* and *such* in D as in *what man*; *such a man*, *such people*, etc. (cf. sections 5.2.3.1. and 5.2.3.2.). Cf. fn. 206 on A elements in Num.

²¹⁵Degree Nums can only precede quantifier Nums of which an *extent* can be specified, e.g., *much/many*, *little/few*: cf. *so much water*, *too many beans*, *very little view*, *how few marbles*, *that little cash*, and **so all water*, **too every beans*, **very any view*, **how no marbles*, **that each cash*.

²¹⁶In figure (333), the N''' represents an 'archicategory' of NP' (cf. Bresnan 1973:293).

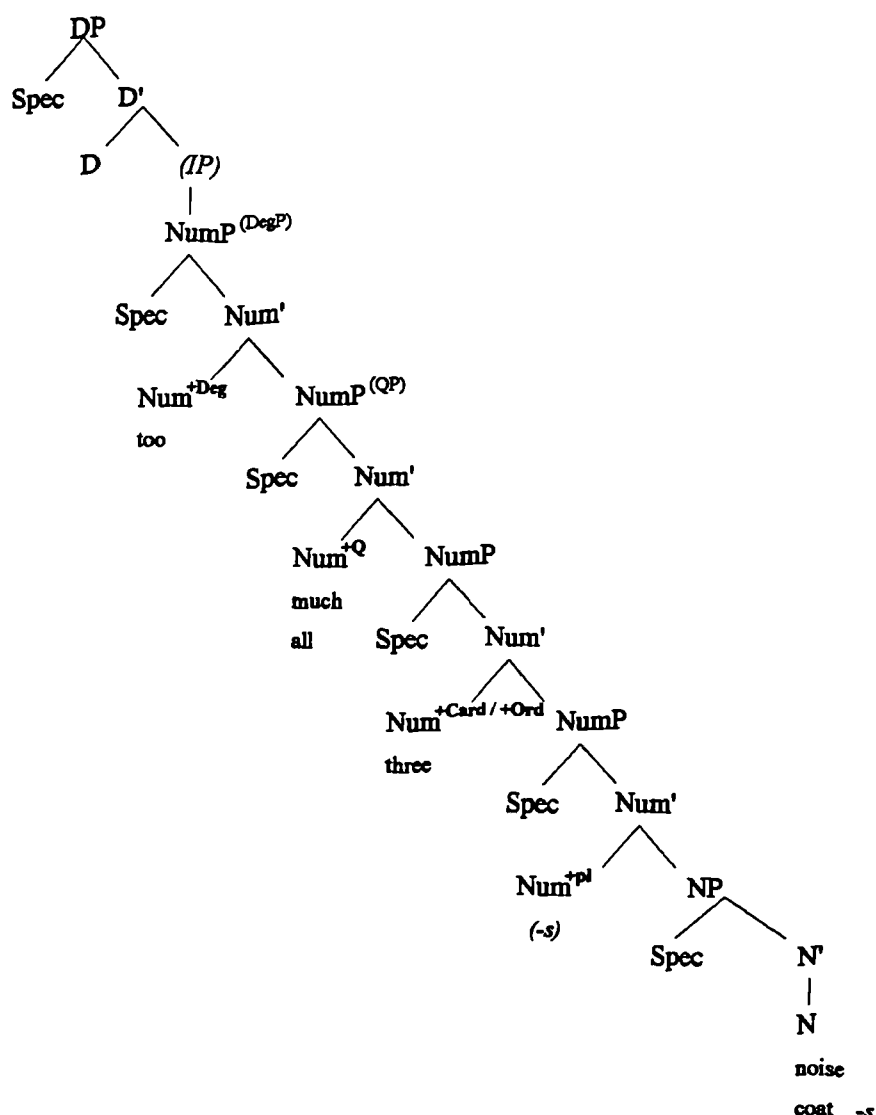
The 'degree' or 'extent' nature of *so* can be seen from Bresnan's derivation in (334), whereby *so* undergoes transformation to *such* while *much* deletes at surface structure, giving rise to the proform *such*. Let us retain Bresnan's conception of 'degree' NumS, so that deg NumS (i.e., [+Deg]) precede quantifier NumS (i.e., [+Q]) in a derivation, whilst additionally observing that quantifier NumS precede numeral NumS (i.e., [+Card], [+Ord]) which in turn precede the plural morpheme Num (i.e., [+pl]). This gives us a hierarchy of :

(335)

- a) Deg NumS precede Q NumS
- b) Q NumS precede Cardinal/Ordinal NumS
- c) Cardinal/Ordinal NumS precede Plural Num
- d) Plural Num precedes NP/DP

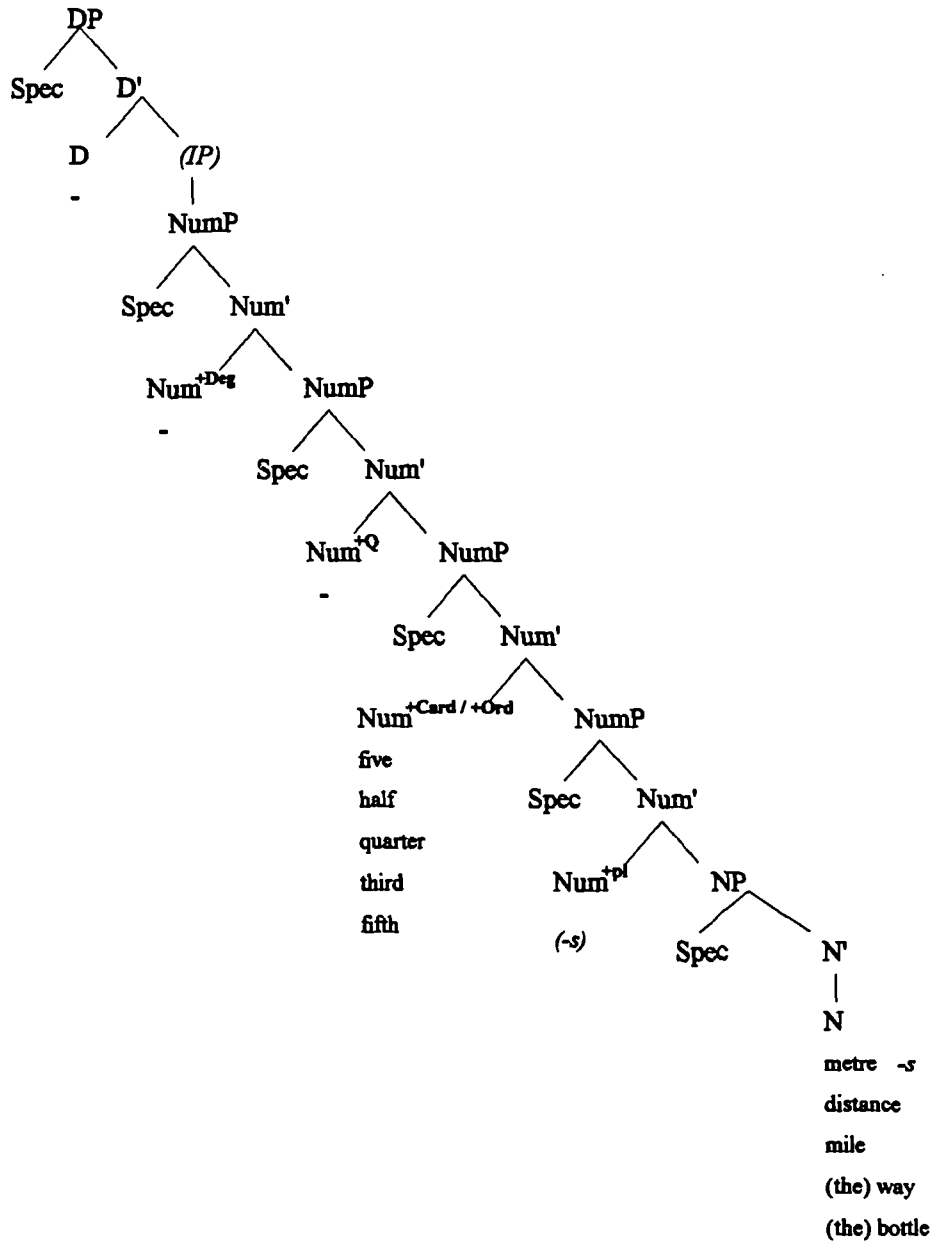
(335) is borne out by data such as *too much the fool* and **much too the fool*; *as little money* and **little as money*; *so few ideas* and **few so ideas*; *this much a coward* and **much this a coward*; *all three coats* and **three all coats*; *every tenth man* and **tenth every man*; *six cat-s* and **six -s cat*; *dwarf-s* and **-s dwarf*, etc. The position of the different types of Num in the Num hierarchy is schematised in figure (336), with *too much noise* and *all three coats* given as examples. In order to preserve a sense of constituency amongst the various Num units, we will notate Num^[+Deg] projections as NumP^(DegP) and Num^[+Q] projections as NumP^(QP), etc. In a nominal such as *all three (of) the coats*, the lowest Num⁰ would subcategorise a DP rather than an NP.

(336) Hierarchy of NumS



Measure elements in nominal Num include quantities such as *half*, *quarter*, *third*, and *fifth*, which I call *pseudo-numerals* and situate in the Cardinal/Ordinal Num node: cf. *half distance*, *half a piece*; *quarter mile*, *quarter (of) a jug*, *a third (of) the way*; *a fifth (of) the bottle*. Measure phrases such as *gallon container* and *litre bottle* are simple N-NP strings, where the head N takes an NP complement: (i.e., $NP[N[gallon NP[(of) container]]]$, $NP[N[litre NP[(of) bottle]]]$); while measure phrases such as *five metres (of) cable*, *ten inches (of) rope*, *three parts alcohol*, *four fifths water*, etc. are Num-NumP recursions, with the head Num taking a NumP complement (i.e., $DP[D[IP[I[NumP[Num[five NumP[Num[-s NP[N[metre NP[(of) cable]]]]]]]]]]$, $DP[D[IP[I[NumP[Num[four NumP[Num[-s NP[N[fifth NP[water]]]]]]]]]$). Note that *metre* and *fifth* in these analyses are head Ns taking nonpropositional NP complements, and that *fifth* is actually the nominalisation of 'a fifth part' and so, as an N^0 , can take the plural morpheme. Some measure NumS are shown in figure (337).

(337)



This concludes our discussion of the D and Num categories of the DP. In the next chapter we shall make some final observations concerning Num in CP.

Chapter 6: Concluding Remarks

6.1. Bringing cohesion to asymmetries

We have argued throughout this work for a Subject Specifier hypothesis to be applied cross-categorially, and we have claimed that every X^{\max} is either a fully specified *proposition* or an X^0 , X' or XP *nonproposition* (cf. section 1.5., (77)). We have distributed the ϕ -features of Infl of CP and DP into a range of functional categories. With the Spec node reserved for DP subjects, we have postulated a *Num* node across head categories to accommodate elements previously placed in [Spec,XP]. A Num category can take lexical complements of N^{\max} , V^{\max} , A^{\max} , or V^{\max} , or functional complements such as D^{\max} and other Num^{\max} ; and NumP may occur in clausal IP or in nominal DP.

In Chapter 1 we posited a universal X^{\max} structure of [Subject Predicate], or [DP X']. This structure is in fact implicitly adopted by all the proponents of the 'VP-Internal' Hypothesis (cf. sections 2.2.1 - 2.2.3), since [DP V'] is the underlying structure in an internal subject framework. We have argued that if internal subjects are integral to both the VP-Internal hypothesis and the DP-hypothesis, then the natural extension is to postulate internal subjects in the other two lexical categories of AP and PP as well (after Stowell 1981, 1983). In Chapter 2 we examined Num and AP complements and Num and PP complements, and in Chapter 5 we examined Num and NP complements.

However, nothing as yet has been said about Num and VP. The ultimate projection of Num and VP is the clause (i.e., $CP[IP(\text{incl. NumP})[VP[V]]]$). The various F -categories of clausal Infl is the focus of a wide body of research in the current syntactic literature. Therefore, in this brief chapter we examine only the relation of [Num,IP] to VP, and make some speculative claims.

6.2. Num as a category in CP

Recall that, according to our arguments in Chapter 3, if there is Infl in DP then DP is equivalent to CP. Therefore, the analogue of *Num in DP* (i.e., Num in nominals) is *Num in CP* (i.e., Num in clauses). Num itself, we have claimed, is one of the multiple ϕ -features

of a composite, abstract *Infl*, which we have articulated into various functional categories in Chapter 4. And we have argued that abstract *Infl* is a property of both CP and DP. Under the *split-Infl of CP* analysis with which we are concerned here, Agr and Tense project to independent categories. Our position is that Agr carries only a [\pm person] feature, and Tense carries only a [\pm past] feature. Consequently, they can realise only these features at PF. In sections 3.3.3.1. and 4.2. we argued that Agr is equivalent only to *person*, not number. Person and number, therefore, are not paired in Agr or in *Infl* but generate separate *F*-heads within the clausal projection of the V head.

6.2.1. The clefting of person and number

As with our discussion of gender in section 4.3., we take [$-pl$] to be the *absence* of a Num feature, and so the absence of a corresponding morpheme. In an English contrast such as *he* (3p) *smoke-s-Ø* (smoke-3p-Tns; 'he smokes') and *they* (3p pl.) *smoke-Ø-ed-Ø* (smoke-3p-Tns-Pl; 'they smoked') it is apparent that *number* never has overt realisation on a head V in English as distinct from person. However, this was not always so, as the following examples from Old English show. Strong and weak verbs in OE exhibit a characteristic suffix in order to distinguish person. For *number*, all persons take a uniform plural form which 'absorbs' the differentiating suffixes for person. The examples are in the present indicative.

(338) OE Strong, Class I

	<i>singan</i>	to sing
1p	singe	
2p	singest	
3p	singeþ	
1p pl	singap	
2p pl	singap	
3p pl	singap	

(339) OE Weak, Class I

	<i>fremme</i>	to do
1p	fremme	
2p	fremest	
3p	fremeþ	
1p pl.	fremmap	
2p pl	fremmap	
3p pl.	fremmap	

In (338) and (339), the plural form is the same for all three persons. Although we can hypothesise that person is still present on the forms *singap* and *fremmap*, it is not clearly evident that this is so. Thus we only tentatively conclude that *-ap* is the realisation of a [$+plural$] number feature in OE.

To find evidence of the morphemic distinction of person and number in verb forms, we will examine a highly inflected language such as modern Arabic, where both person and number have their own unique morphemes on a V head. Imperfect verb forms in Arabic show an inflection for plural which is readily distinct from the inflection for person, in the case of person in the plural. The imperfect indicative in Arabic in (341) corresponds to the present and future indicative in English.

(341) Imperfect Indicative Arabic

	<i>kataba</i>	to write
1p	'aktub	
2p	taktub	
3p	yaktub	
1p pl.	naktub	
2p pl.	taktubuun	
3p pl.	yaktubuun	

In this typical conjugation, we see that *person* is indicated by a person prefix which is added to the initial *k* radical of *kataba*. This derives 1p 'aktub, 2p taktub, 3p yaktub). In the plural, a number suffix is added as well, to distinguish *number* from person (e.g. naktub, taktubuun, yaktubuun).²¹⁷ There is also a dual form in Arabic, which has its own number affix (e.g., taktubaan, yaktubaan, 2p dual, 3pm. dual).²¹⁸ Where the number suffix occurs without the person prefix, ungrammaticality results, as in (342).

(342)

	<i>kataba</i>	to write
1p	*ktub	
2p	*ktub	
3p	*ktub	
1p pl.	*ktub	
2p pl.	*ktubuun	
3p pl.	*ktubuun	

From the data in figures (338) to (342), we posit that *number* is a separate and distinct category from *person*, in the clause and in the nominal.

²¹⁷1st person plural forms in the Arabic imperfect typically inflect with only the person morpheme (i.e., *na-* in *naktub*), and are missing the number morpheme (i.e., *-uun* in (341)).

²¹⁸The feminine gender variants of the verbal forms in (341) have been omitted for purposes of simplicity.

6.3. Contents of Num in CP

Now let us consider what actually is in Num of CP. I propose that [Num,IP] of CP contains the feature [\pm pl] as well as free morphemes, analogously to [Num,IP] of DP. Clausal Num takes a VP complement, and [\pm pl] on Num may be realised by either:

(343)

- ① a plural morpheme on the verb, which is always covert in English: e.g., $-\emptyset$ in *the dogs swim- \emptyset - \emptyset - \emptyset* (*swim-3p-Tns-Pl*);²¹⁹ or
- ② an adverbial element such as *twice*, *thrice*, *often*, *frequently*, etc. in Num (cf. Jespersen 1924:211): e.g., *the cow twice jumped over the moon*.²²⁰

It must be observed with respect to (343) that number on a V actually refers to plurality of *person* (e.g., *dogs*), not plurality of *action* or *state* (i.e., there is only one act of *swim* in *the dogs swim*, not several. Cf. Jespersen 1933:216). For clarification, I will list the plural affix in my glosses as *Pl* (e.g., *the dogs swim- \emptyset - \emptyset - \emptyset / the dogs swim-3p-Tns-Pl*); and free morphemes as *Num*, although both are in fact Num morphemes.

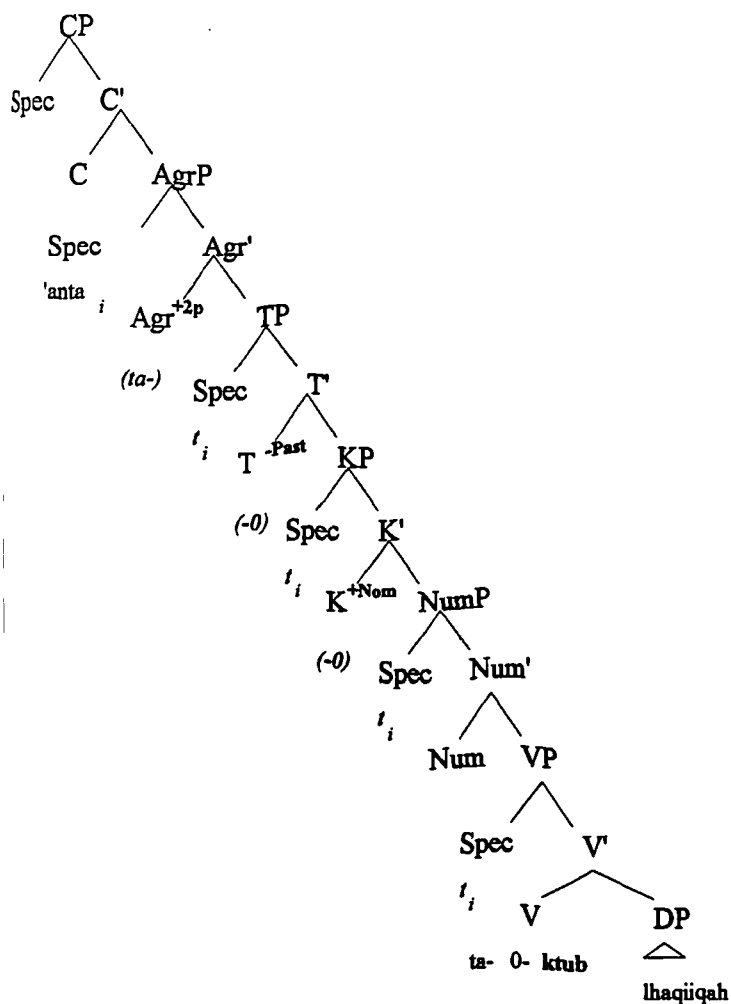
Figures (344) and (345) examine the overt realisation of a [\pm pl] feature of Num on the head V in an Arabic clause. Figure (344) shows a CP with a negative value for Num (i.e., [$-$ pl]); and figure (345) shows a CP with a positive value for Num (i.e., [\pm pl]). In figure (345), the 3p pl. subject *hum* ('they') triggers the *-unn* number morpheme on the V *kataba* ('write'). (Cf. OE *singab* / *fremmaþ*). The parallel between Num in CP and Num in DP can be clearly drawn.

²¹⁹Note that [\pm Pl] in Num of the VP is realised by a $-\emptyset$ morpheme in English; only the [\pm 3p] *person* feature of *Agr* is overtly realised on verbs in English (cf. the $-$ Past *he* (3p) *smoke-s- \emptyset* (*smoke-Agr-Tns*) *cigars* and *they* (3p) *smoke- \emptyset - \emptyset - \emptyset* (*smoke-Agr-Tns-Num*) *cigars*; and the $+$ Past *he* *smoke- \emptyset -ed* (*smoke-Agr-Tns*) *cigars* and *they* *smoke- \emptyset -ed- \emptyset* (*smoke-Agr-Tns-Num*) *cigars*. We are extending the GB-convention of zero morphemes (cf. fns. 114 and 116) in English to *Num* as well as to *Agr* and *Tns* in the clause.

²²⁰Jespersen remarks that these adverbs are reasonably the plurals of *once* since they are logically equivalent to 'two times', 'three times', 'many times', etc.

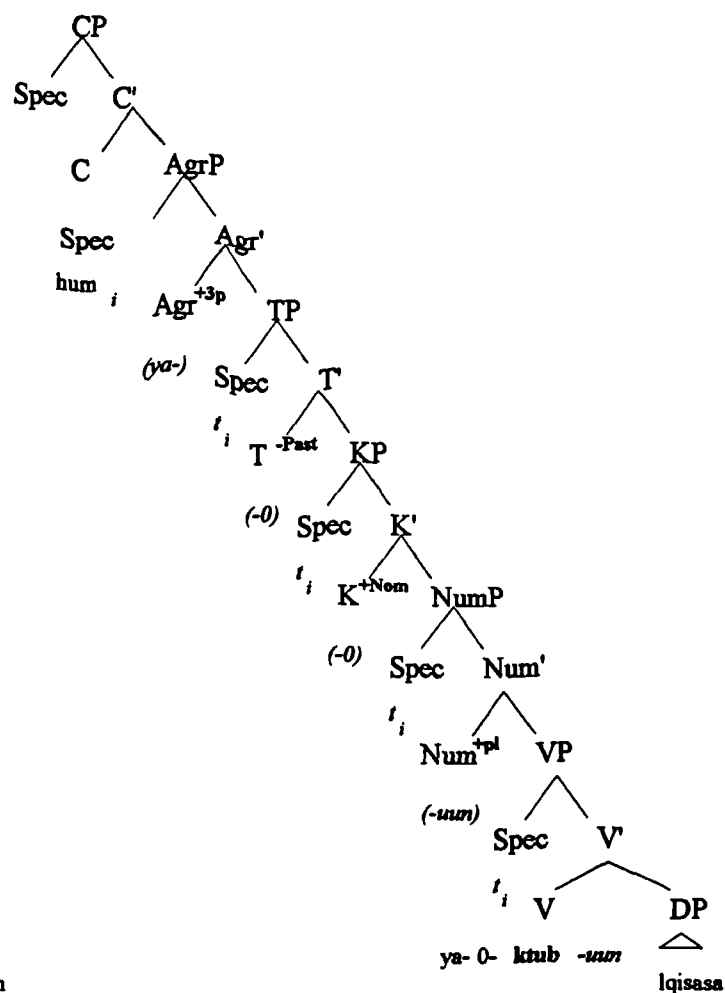
(344) [-pl] Num in CP²²¹

'anta ta-Ø-ktub lhaqiiqah
 you 2p-Tns-write the truth
 'you write the truth'



(345) [+pl] Num in CP

hum ya-Ø-ktub-uun lqisasa
 they 3p-Tns-write-Pl stories
 'They write stories'



6.3.1. Recursive Num in CP

As with any other lexical category, recursion of Num may occur with VP. This happens where two or more numeric elements occur with the V head:

(346) the cow twice jump-Ø-ed over the moon
 the cow Num-jump-3p-Tns over the moon *no recursion of Num*
 'the cow twice jumped over the moon'

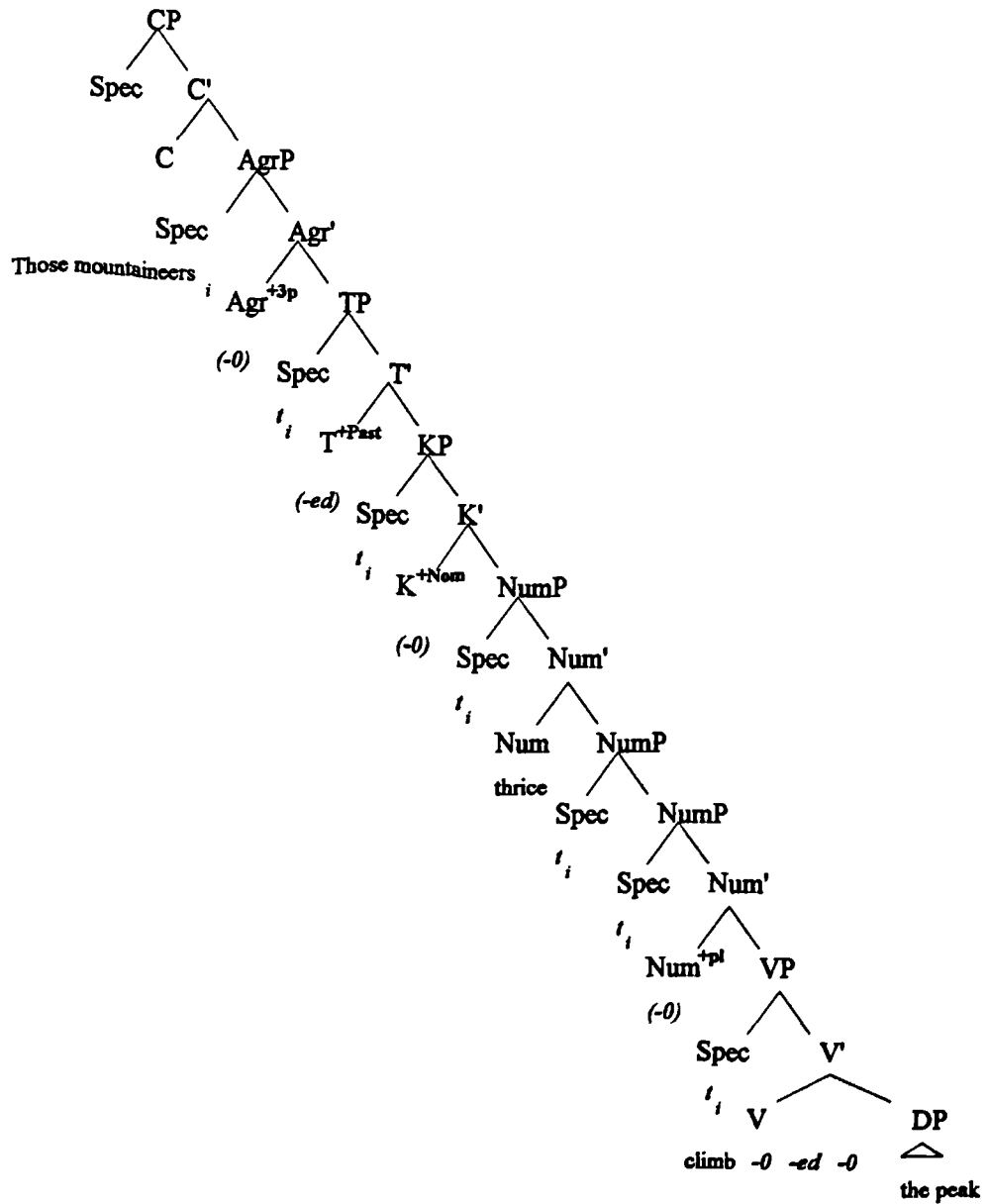
²²¹In the Arabic imperfect, the presence of pronominal *prefixes* mark the state or tense as imperfect by an order of Agent-Act. In the perfect, pronominal *suffixes* indicate an act completed by an order of Act-Agent. (Cf. Wright1932:59). Hence for figures (344) and (345), I am assuming a covert tense morpheme in my analyses. As well as tense, the pronominal prefixes in (344) and (345) clearly indicate *person*.

(347) the cows twice jump-Ø-ed-Ø over the moon
 the cows Num-jump-3p-Tns-Pl over the moon *recursion of Num*
 'the cows twice jumped over the moon'

Figure (348) shows recursion of Num in the clause, with respective Num containing a [+pl] morpheme and a free morpheme.

(348) Multiple Num in CP

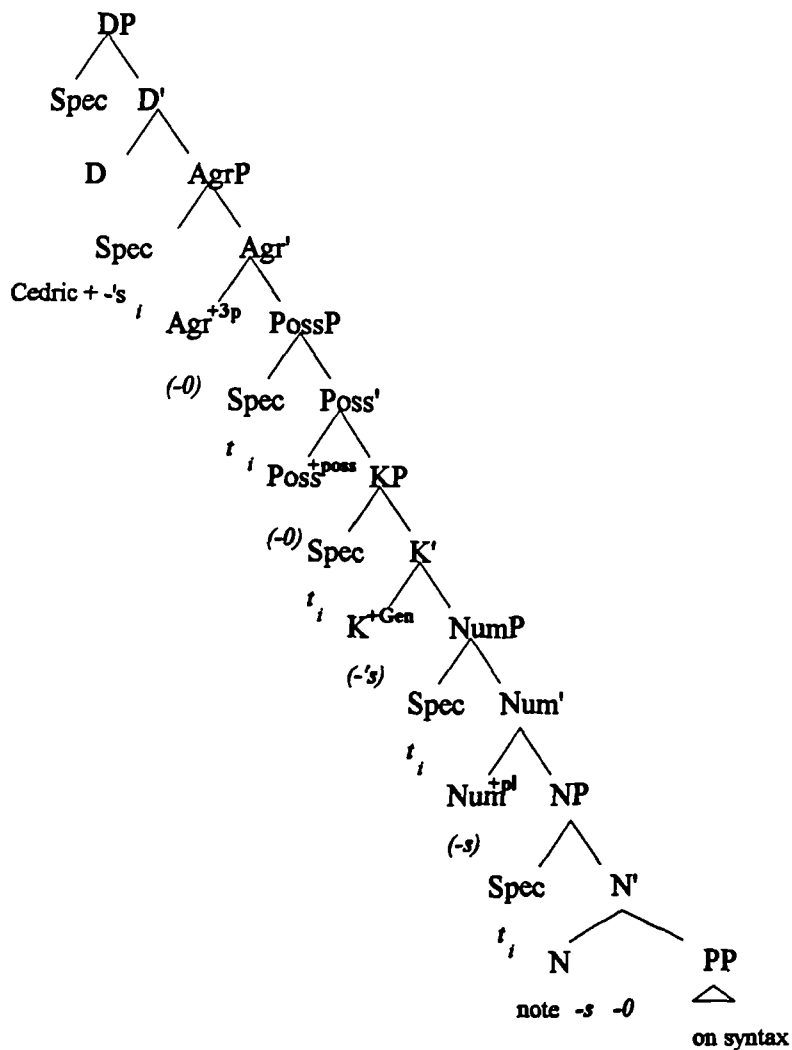
(a) Those mountaineers thrice climb-Ø-ed-Ø the peak
 Those mountaineers Num-climb-3p-Tns-Pl the peak
 'Those mountaineers thrice climbed the peak'



6.4. The *F*-categories of DP revisited

In section 4.4.2. we posited that Num was the functional category closest to the noun, immediately dominating NP and below KP. We reiterate here the full articulation of DP under our multi-categorical or 'split-Agr of DP' analysis. Recall from section 4.1. that, for a possessive nominal such as *Cedric's notes on syntax*, we have the option of postulating zero morphemes in Agr and Poss, or postulating that these *F*-categories are not triggered in English DPs.

(349) Num in DP



A fully elaborated, parallel and predictable Infl node for the nominal and the clause can provide a platform for further theoretical investigation into the nature of functional projections in X^{\max} . I hope that the foregoing analyses are a step towards establishing symmetry not only in NP and VP but across all the lexical head categories. The obvious possibility of Infl in AP and PP, with a similarly full articulation, I leave to those who would take up further research.

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