THE RISE OF FUNCTIONAL CATEGORIES:
SYNTACTIC PARALLELS BETWEEN FIRST LANGUAGE ACQUISITION AND HISTORICAL CHANGE

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ABSTRACT

The aim of this thesis is to seek to establish a correlation between ontogeny and phylogeny in language development, suggesting that there are strong syntactic parallels between first language acquisition and diachronic language change. Through the comparison of early child English (aged 20-23 months) and earlier English, it will be argued that, although the two processes are not completely identical, the same mechanism is at work in both these domains: the rise of functional categories at certain stages of development.

I propose that languages typically start as lexical-thematic, without any functional categories (i.e. DP, TP/IP, CP), and the emergence of a new functional category is the characteristic mark of a transition from one stage to the next both ontogenetically and phylogenetically. Diachronically, this process is effected by the grammaticalization as syntactic functional categories of previously existing morpho-semantic features. I propose that language variation is due to differences in the degree to which functional features are codified as grammatical categories, i.e. whether they are upgraded to functional categories which have their own projection and if so, which features are upgraded. Hence, my claim implies that grammaticalization should be viewed as functional category maturation, that is, as involving the emergence of functional categories heading their own projections.

I further propose a more comprehensive framework to accommodate both historical facts and acquisition data. This framework involves the reallocation of duties, for example, from morphology to syntax, or from pragmatics to syntax. The diachronic development of language is then to be viewed as a change in some domain in the trading relations between morphology, pragmatics, and syntax. This is the conceptual basis of category maturation. The difference between first language acquisition and diachronic change resides in the possible difference in the direction of the reallocation. In principle, any reallocation is possible, e.g. from syntax to morphology, or syntax to pragmatics. However, I suggest that there is a unidirectionality in the reallocation of duties, such that every reallocation targets syntax.
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# TABLE OF CONTENTS

Abstract 3
Acknowledgments 4

Chapter 1: Introduction 10
1. The aim of this thesis 10
2. Non-universality of functional categories 18
   2.1 Related proposals 18
   2.2 Some theoretical problem 28
3. The nature of maturation 36
4. Unidirectionality 41
5. Organization of this thesis 46

Chapter 2: The emergence of functional categories in first language acquisition 49
1. Introduction: the maturation hypothesis 49
2. Absence of a D-system in early child grammars 63
   2.1 Absence of a D-system in early child English 63
   2.2 Absence of Case-marking in early child grammars 67
3. Absence of a T/I- system in early child grammars 70
   3.1 Lack of inflected features 70
   3.2 Lack of auxiliaries 73
4. Aspect in early child grammars 75
5. Missing arguments in early child grammars 80
6. The nature of early child language 85
Chapter 3: The historical emergence of DP 87

1. Introduction 87
2. The structure of DP 89
3. Absence of a D-system in earlier English 93
4. The function of case 104
   4.1 Higginbotham’s theory 104
   4.2 Binding of referential arguments in the history of English 108
   4.3 Modern Chinese: an apparent counterexample 119
5. The introduction of determiners 126
   5.1 Introduction 126
   5.2 Absence of a syntactic case system in OE 127
   5.3 The demise of morphological case and the introduction of determiners 139
6. Independent evidence: the development of gerund constructions in English 141
   6.1 Gerund constructions in PE 141
   6.2 The historical development of gerund constructions in English 145
   6.3 The emergence of gerund constructions in terms of theta-binding 148
7. Conclusion 151

Chapter 4: The emergence of TP: temporal interpretation and syntactic phenomena 153

1. Introduction 153
2. Tense: a temporal argument 158
3. Binders of the E-position in VP other than Tense 162
4. Aspect 167
   4.1 Aspect versus Tense 167
   4.2 Aspect in history 169
4.3 Aspect: its grammatical status 171

5. TP as a syntactic category in PE 176
   5.1 Introduction 176
   5.2 PE clause structure 177
   5.3 Tense and case 178
   5.4 Do-support and other associated effects 180
   5.5 Other auxiliaries in PE 181
   5.6 Other syntactic evidence for the presence of TP in PE: separation
       of TP from VP 182
   5.7 Subject requirement 183

6. The emergence of TP in the history of English 184
   6.1 Introduction 184
   6.2 How was the E-position in OE bound? 185
   6.3 Non-presence of TP in OE: absence of related syntactic phenomena 190
       6.3.1 Introduction 190
       6.3.2 OE case system 191
       6.3.3 Lack of do-support 192
       6.3.4 Lack of modal auxiliaries 194
           6.3.4.1 Ancestors of PE modals 194
           6.3.4.2 Syntactic evidence 195
       6.3.5 Lack of other auxiliaries 197
           6.3.5.1 Have 197
           6.3.5.2 Lack of be as a progressive auxiliary in OE 199
       6.3.6 Separation 201
   6.4 Subject requirement 202
       6.4.1 Introduction 202
       6.4.2 The non-universality of subject 203
       6.4.3 OE impersonal constructions 208
       6.4.4 Previous studies on impersonal constructions 211
6.4.5 My hypothesis 220
6.4.6 PE clause structure vs OE clause structure 222
   6.4.6.1 PE clause structure 222
   6.4.6.2 OE clause structure 226
7. What triggered the emergence of TP? 229
   7.1 Introduction 229
   7.2 Proposal 230
   7.3 The temporal interpretation of finite clauses: Enç’s summary 232
      7.3.1 Anchoring principles 232
      7.3.2 Anchoring complement tenses 236
   7.4 Proposal (in detail) 239
8. Conclusion 250

Chapter 5: Summary and further issues 252
1. Summary of the main points 252
2. Further issues: the emergence of CP 254
3. Final remark 256

Bibliography 258
1. The aim of this thesis

In this thesis I seek to establish a correlation between ontogeny and phylogeny in language development, claiming that there are strong syntactic parallels between the two. I examine both early child language and earlier languages, mainly earlier English, and try to answer the following question:

(1) Is there any correlation between the process of first language acquisition, i.e. how a child constructs the grammar of his language, and diachronic language change? My examples will be taken mainly but not exclusively, from English syntax.

My hypothesis is that there might be the same mechanism at work in both these domains. The mechanism is the rise of functional categories. In first language acquisition, this mechanism is called category maturation (Radford 1990, Tsimpli 1996). The maturation theory of language acquisition says that different principles of Universal Grammar (UG) are genetically programmed to come into operation at different biologically determined stages of maturation. That is, phenomena dependent on categories or principles which are subject to maturation are absent before the appearance in the child’s grammar of those categories or
Introduction

principles. Likewise, in the historical domain, before the emergence of particular categories or principles, certain related phenomena are absent in a given language. I do not claim that the two processes, i.e. first language acquisition and historical change are completely identical, but although there exist some differences, the underlying mechanism, i.e. the rise of functional projections is the same. I want to keep my options open here as to whether the exact content of maturation in acquisition is the same as that seen in the development of earlier languages like Old English (OE). I will turn to this issue later, in section 3 of this chapter.

A further difference between first language acquisition and diachronic language change concerns the notion of “internalized” and “externalized” languages (Chomsky 1986, 19-56). Chomsky states that the ultimate goal of linguistics is to characterize the internalized linguistic system, that is, the internalized linguistic knowledge within the human mind/brain, or I-language, as Chomsky terms it. For a human being to know a particular language L is for him or her to have a certain I-language. A (generative) grammar would then be a theory of the I-language. UG now is construed as the theory of human I-language, a system of conditions deriving from the human biological endowment that identifies the I-languages that are humanly accessible under normal conditions ( op.cit. 23).

By contrast, the traditional notion of language treats it as a collection of actions, behaviors of some sort, or a set of utterances. Chomsky refers to this notion as “externalized language” in the sense that it is understood independently of the properties of the mind/brain. A grammar is then a collection of descriptive statements concerning the E-language. From this point of view, grammar is a secondary notion; the linguist is free to select the grammar one way or another as long as it correctly identifies the E-language.

The focus of linguistic study has shifted during the cognitive revolution from the products of behavior, to the system of knowledge that makes behavior possible, and more deeply, to the innate endowment that makes it possible for
Introduction

humans to attain such knowledge. The shift in focus is from E-language to I-language, i.e. from the study of language regarded as an externalized object, to the study of the system of knowledge of language attained and internally represented in the mind/brain. UG is a characterization of these innate, biologically determined principles, which constitute one component of the human mind - the language faculty (Chomsky 1986, 24).

What follows from the above is that linguistics is the study of UG and I-languages, and E-languages, which do not correspond to real-world objects, are removed from the scientific study of language. Chomsky (1991a, 10) says that the concept of E-language has no clear status in the study of language, and is best abandoned. This is crucial for my position as child language is one instantiation of I-language, while historical data are assumed to be reflexes of E-language. Chomsky says that E-language is not a coherent notion, and historical data lack "psychological reality".

Although I am aware of this difference, I treat historical language as I-language. On my hypothesis historical data are idealized manifestations of I-language and hence, can be the target of scientific study. Let me put this differently. If my hypothesis is on the right lines, then, the same mechanism is working in both domains: first language acquisition and diachronic change. If child language is an I-language, and the mechanisms working in child language follow from UG, it means that the mechanisms working in diachronic change are also part of UG, and hence, diachronic change is another instantiation of I-language. The maturational theory of language acquisition says that different principles of UG are genetically programmed to come into operation over time. Likewise, diachronic change is best described within a framework of category maturation which follows from UG, which is powerful enough to accommodate both diachrony and synchrony. One of the main contributions of this thesis is bridging the divide between diachrony and synchrony.

As observed in chapter 2, the development of child language has a diachronic dimension as well. Hence, an explanation of this development should be
sensitive to the diachronic change of language. I propose that the theory of language should account for the diachronic change of language as well as the development of child language. Accordingly, UG should accommodate historical facts as well as language acquisition facts.

Children's early speech is said to be remarkably similar from language to language as well as from child to child. For example, the phenomenon of missing arguments, and variation in word order, etc., are observed cross-linguistically. This is taken to be due to the fact that the functional categories in terms of which the relevant phenomenon is defined, have not matured. From this follows the absence of parametric differences in early child speech.

Radford (1990, 274) has examined early child English in detail and concluded that the functional category systems come into operation around the age of 24 months (+/- 20 %). Before that, early child English lacks functional categories. Therefore, it has many characteristics which differentiate it from adult grammars, such as no movement, modal auxiliaries, do-support, or empty categories, etc.

Turning to the historical domain, we find that not a few of the characteristics mentioned above are shared with OE at its earliest stage: the lack of modal auxiliaries, the lack of do-support, and the lack of perfective have, progressive be, etc. Moreover, subjectless constructions were frequently used from the OE to Middle English (ME) period, and OE manifests considerable variation in word order.

Therefore, it is not implausible to claim that earlier English also lacked functional categories. It might be objected by some who assert that the same functional categories exist in all languages at any stage of their development. Such critics might ask how features like tense, or agreement involving such categories as person, number and gender can be expressed, if there are no functional categories in the languages in question. How is it possible to deny the existence of these features? Does OE lack tense features? Where are they placed if there are no functional categories?

All these questions will be discussed and answered more properly in the
subsequent chapters of this thesis. Here I point out that functional features are different from functional categories, so the two concepts need to be kept distinct throughout the discussion. When I argue that, for example, OE had no Tense, it means that OE did not have a syntactic functional projection, TP; it does not mean that OE had no temporal features or no device to give a temporal interpretation to a VP. Features do not project automatically into a syntactic projection, so, the absence of functional categories does not necessarily entail the absence of the associated features and conversely, the presence of features does not always suggest the presence of the related functional category. Tense is a grammatical functional category, which should be distinguished from the notion of time, or semantic distinctions of time like past or present.

It is possible that a particular language like English lacks functional categories at a certain stage of diachronic development; or rather that the syntactic change is better described in terms of the emergence of functional categories. Gelderen (1993, 2) asserts that UG has parameters that allow languages (a) to select/incorporate functional categories, and (b) to select the node in which sets of features in that language must be placed. She further states that it is possible to see the change between OE and Modern English as involving an increase, a rise, in the number of functional categories. In similar vein, Kiparsky (1995, 141) asserts that the choice of functional categories is subject to parametric variation.

I propose that languages typically exist as lexical-thematic, without any functional categories (i.e. DP, TP/IP, CP), and the emergence of a new functional category is the characteristic mark of a transition from one historical stage to the next. This process is effected by the grammaticalization as syntactic functional categories, of previously existing morpho-semantic features. For example, as we will see later, there was no functional projection DP in OE. At a certain stage in the development of English a syntactic D-system was introduced. That is, the status of nominal projections in OE was NP, and it developed into DP via the introduction of a D system within nominals. What triggered this change was the demise of morphological case in NPs. Since NPs are inherently predicative, and
N has a Referential-role (R-role), that R-role must be bound, if an NP is to be used as an argument. Either a functional category D (cf. Higginbotham 1985) or morphological case can bind the R-role. Since there was no D-system in OE, morphological case bound the R-role. The demise of morphological case necessitated some compensatory device, and the syntactic D-system emerged in the English language.

I suggest that behind this development is a more general tendency towards the grammaticalization of semantic features into a syntactic functional category. In parallel with DP, TP/IP also emerged at a particular stage of development. In the case of TP/IP, some of the deictic temporal features on verbs are upgraded to constitute a functional category. In DP, some of the nominal features on nouns, i.e. referential features, are upgraded to have a syntactic projection. Hence, my claim implies that grammaticalization should be viewed as functional category maturation, that is, as involving the emergence of functional categories heading their own projections.

I further propose a more comprehensive framework to accommodate apparent counterexamples like Modern Chinese, which has neither morphological case nor a D-system. This framework involves the reallocation of duties, for example, from morphology to syntax, or from pragmatics to syntax. The diachronic development of language is then to be viewed as a change in some domain in the trading relations between morphology, pragmatics, and syntax. This is the conceptual basis of category maturation. This will be discussed in more detail in section 3 of this chapter.

There are some corollaries which follow from our discussion. Traditionally the historical development of gerund constructions in English is explained as the process of a pure nominal phrase acquiring verbal properties. The ancestor of the gerund in OE did not have those verbal properties. Against this, I suggest a new analysis of the appearance of gerund constructions in English. On my hypothesis, I predict - as is indeed the case- that OE lacked gerund constructions, since gerunds are one instantiation of a D-system. By contrast, in Present-day
Introduction

English (PE), where syntactic binding is necessary to derive a nominal from a verb, there exists a functional category D which can take care of this task. That is, the emergence of a functional category within a nominal phrase made it possible for a phrase to have a structure parallel to that of a clause. This will be discussed in chapter 3.

Furthermore, it will be shown that the absence and the subsequent emergence of functional categories within languages have an important effect on how clauses are constructed in those languages. Without functional projections, the nature of early child and early language clause structure is necessarily different from that of PE, for example. As mentioned above, the overall structure of early child speech and early languages is lexical-thematic, that is, it deploys the four lexical categories (N, V, A, P) and their phrasal projections, (NP, VP, AP, PP). In adult grammars clauses have the status of TP/IP, i.e. maximal projection of a functional head T/I, while in early child grammars and earlier English the clause structure is a VP: the clause consists of the maximal projections of the verb and its arguments. Since earlier languages are lexical-thematic, only arguments which are required by the meaning of a predicate must be syntactically realized in the clause structure. The licensing condition for a nominal constituent is that it be assigned an appropriate theta role. This gives a different analysis for impersonal constructions. Impersonal constructions, where “subjects” have been analyzed as “missing” in the literature are problematic, since the proposals for accounting for the “missing subjects arguments” have potential problems. However, given the above assumption, the impersonal constructions are one instance of this situation, where only the required arguments are realized. That is, the “missing arguments” were not missing, but did not exist from the beginning. This claim is reminiscent of Anderson (1986), who has argued that subcategorization frames should be formulated in terms of θ-roles alone, and that the θ-roles characterize the structures into which predicates are inserted. It follows that it is not always necessary to posit a slot for subject. More detailed discussion will be given in section 6.4.4 of chapter four.
Hence, there was no Extended Projection Principle (EPP) in lexical-thematic languages. The subject requirement is the result of the emergence of a functional category T/I, since a subject is a purely syntactic element which is not always associated with a particular thematic role. Hence, the impersonal construction is not a "subjectless construction", but an example of the ordinary maximal projection of the verb and its arguments.

Against this claim, there is the objection to the effect that the EPP is a universal requirement. Although the EPP is parametrised in the Minimalist Program, subjects are required because of the condition on predication: thematic subjects are required and determined by thematic relations between the predicate and its arguments (Tsimpli, personal communication, hereafter p.c.).

The term "subject" expresses at least three different notions: a grammatical one referring to the element which occupies a certain place in the clause structure; a logical one, the subjectum (in contrast with predicate) in the logical structure; and a semantic one, exemplified by the notion Agent. People tend to use the term "subject" without clarifying which notion of the three they are referring to, which can cause some confusion. When I argue that there is no EPP for earlier languages, I am referring to the first, grammatical, notion: the element which is required syntactically. The claim that there is no EPP for earlier languages follows directly from what Chomsky argues (1995: 232): "the subject requirement is reduced to the effect of the strong D-feature of I(T)". Then, if a certain language has no T/I-system, the EPP does not follow, since the term "subject" must be associated with the presence of a functional category. Here the subject is an element which occupies the position that is structurally required by a functional projection TP/IP. PE has a TP, then, PE has the subject requirement. This will be discussed in more detail in chapter 4.

I further suggest that there is minimal syntactic subordination of the kind referred to as embedding in languages without the functional categories TP/IP and CP. There is a close correlation between the internal structure of a clause and the main device of combining clauses in languages. That is, if the language is
Introduction

purely lexical-thematic, the clause structure is flat, and parataxis is the main device for combining clauses. The development of hypotactic structure, which reached the stage of embedding, presupposes the introduction of TP/CP for purposes of temporal interpretation. This hypothesis matches well with the general development of clause structure in various languages, as will be seen in chapter 4.

2. Non-universality of functional categories

2.1 Related proposals

I start this section with the very basic question: to what extent does UG constrain the grammars of different languages? More precisely, I raise the following question, part of which is cited from Thráinsson (1996):

(2) Do all languages have the same inventory of functional categories (and if so, what is it) (Thráinsson 1996, 255.) at every stage of their diachronic development?

Chomsky (1986, 37) says that the study of one language may provide crucial evidence concerning the structure of some other languages. Hence, the answer is “yes” for those who believe the strong version of the Structure Uniformity Hypothesis:

(3) The Structure Uniformity Hypothesis

Strong Version: clausal architecture is completely determined by UG in the sense that all clauses in all languages have the same set of functional categories and their sequence (c-command) relation is uniform. (Thráinsson 1996, 255)
However, a similar question to (2) has been raised by not a few researchers, who reject the strong version of the Structure Uniformity Hypothesis and prefer the weaker position: Iatridou (1990), Ernst (1992), Gelderen (1993), Fukui (1995), Kiparsky (1995) and Thráinsson (1996), and so on. I will introduce their ideas and show that my position is not implausible. Although my arguments will be rather different from theirs, I agree with the basic points of their discussion, that is, languages vary with respect to the functional categories they have.

Iatridou (1990, 552) casts doubt on the null hypothesis mentioned above, raising the question: “are data from one language in favor of a functional projection sufficient for us to postulate that the same functional category exists in all languages?” If the answer is “yes”, this position, as she points out, unavoidably leads to an explosion of functional categories. In the framework of the Minimalist approach, all the functional categories are assumed to head their own projections: Comp is assumed to head a CP, Infl to head an IP, Det to head a DP, and so on. In many languages the passive is formed without an auxiliary verb but only with special morphology on the verb. In other languages the verb can carry affixes for Causative, Benefactive, Locative, etc. If the above position is correct, it follows that all languages should have a PassP, a CausP, a BenP, and so on. Then, what about MoodP, and AspectP? I will turn later in this thesis to the issue of “AspectP”. Here I note only that it does not seem that there is evidence for the presence of MoodP, or BenP, say, in PE. Iatridou suggests that languages vary with respect to the functional categories they instantiate and that therefore evidence for an AgrP (or CausP, BenP, and so on) will have to be found in each language separately. She argues that in English and probably in French there is no AgrP (op.cit. 553).

Ernst (1992) also argues that there is no NegP in PE, against the proposal (Pollock 1989, Chomsky 1989) that the word *not* heads a NegP in English. He claims that the relevant facts can be derived by treating *not* as an adverb which is located in [Spec, VP]. Based on these results, he casts doubt on the view that all the functional heads must head their own projection, taking some complement.
Introduction

Combined with the conclusions of Latridou (op.cit.), this suggests that phrase structure theory should look for reasons why some languages treat a given functional item as the head of a functional projection, while others do not (Ernst 1992, 142). His analysis of PE *not* as an adverb suggests that a functional feature can be present independently of a functional projection. This provides support for my hypothesis.

Gelderden (1993) provides evidence that not all languages use all functional categories made available by UG: the T-position is present in modern English but it is not present in e.g. Dutch, Old and early ME; therefore neither is the Spec TP, or TP (Gelderden, 1993, 189). As touched upon above, she suggests that parameters in UG, which must be set for each language, allow languages to select functional categories and to select the node where features are placed. Thus, the absence of functional categories does not mean the absence of those elements associated with functional nodes such as tense and agreement features. She argues in favor of a separation of the tense and agreement features from their respective T and Agr nodes. Features must be seen independently of specific categories. (op.cit.190).

Diachronic language change is seen as involving the rise of functional categories. For example, a T/I position was introduced in English by 1380 according to Gelderen, and the introduction of this position caused other changes such as the change of the main clause from a CP into a TP, the shift of the position in which tense features are generated, etc. Then, there must be one parameter to be set by the language learner on the basis of the input encountered to include a Tense projection in the grammar, and a second parameter as well, to specify where the tense features are placed (op.cit.58), as shown in (4) and (5):

(4) Tense Parameter: +/- T/TP

(5) Feature Parameter: Tense features are situated in C, V, and/or T.

However, as Gelderen admits (op.cit.193), this explanation of the use of
parameters is very descriptive and stipulative. Accordingly, it is necessary for me to give a reason why I advocate the maturational theory, and express some doubt about the parameter-setting explanation for diachronic change. Most diachronic changes take a hundred years or a few hundred years to be realized. If, as Lightfoot suggests, diachronic changes are triggered by parameter-setting, why don't changes occur instantly? Lightfoot himself states that "a striking property of the loss of the impersonal verbs is its gradualness. The two grammars coexisted for several hundred years" (Lightfoot 1991, 137). As is discussed in chapter 4, impersonal verbs and the personal constructions using the same verb coexisted for a while. This cannot be well explained by the parameter-setting model and, as is shown below the maturational theory provides a better framework.

Before looking at that issue in more detail, I turn to Fukui's (1995) analysis of Japanese. Fukui (1995) argues that Japanese lacks the functional categories C and D, although it may have a defective 1, which contains no relevant agreement feature. It is a well-established fact that Japanese does not have the equivalents

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1 Lightfoot (1997) argues that diachronic language change sometimes takes place abruptly and changes affect languages catastrophically, reflecting a new parameter setting. Languages may change in piecemeal fashion, but at certain points more dramatic changes take place, often simultaneously, just as the water changes into steam at a certain point (op.cit.174-175). However, the demise of some systems, for instance, the loss of the subjunctive mood, presupposes long cumulative periods of gradual deterioration, even if the final stage of deterioration is catastrophic, and this rapid change might be due to a new parameter setting, as he suggests. And in the transitional period, there is much variation in the forms people employ. Hence, the basic question still remains: what triggered this change at all?
Introduction

of English articles such as a or the. Thus, noun phrases can occur freely without
being accompanied by anything, irrespective of differences in nouns such as
"countable", or "mass", and singular or plural:

(6) a. John-ga hon-o katta
    John-nominative book-accusative bought
    Literal translation ‘John bought book = John bought a book/John bought the
    book.’
    cf *John bought book (PE)
    b. John-ga takusan-no hon-o katta
       many book
       Literal translation ‘John bought many book = John bought many books.’
    c. John-ga mizu-o nonda
       water-accusative drank
       ‘John drank water’
    d. John-ga takusan-no mizu-o nonda
       much
       ‘John drank much water.’

A candidate for a functional head D in Japanese might be a class of
demonstratives such as ko-no ‘this’, a-no ‘that over there’, and so-no ‘that, the’.
However, they behave like pre-nominal modifiers, rather than a D head. They
are different in meaning: ko-no near the speaker, so-no near the hearer a-no away
from both of them. They can cooccur with other pre-nominal elements giving
results parallel to “John’s that car ”, as in (7a), and more importantly, a-no can be
dispensed with as in (7b,c). The variant forms can stand by themselves as
arguments like (7d):

(7) a. Tom-ga John-no a-no kuruma-o katta
    Tom John’s that car bought

22
Introduction

b. Tom-ga kuruma-o katta
   Tom car bought

c. Kuruma-ga kosyoo-si-ta
   Car broke down

d. A-re-ga watasi-no ie desu
   That-Nom. my-Gen. house is
   ‘That is my house’

Concerning the I system, which involves syntactic phenomena such as modals, do-support, subject-verb agreement, (syntactic) nominative case assignment, and subject-Aux inversion in PE, all of these properties are lacking in Japanese. Do-support and modals (where by modals, I mean a separate class of verbs which are distinguished syntactically from lexical verbs) are simply lacking in Japanese. And subject-verb agreement is likewise absent from Japanese as well, since in this language there are no devices to express φ-features:

(8) a. watasi-wa/ga\(^2\) byoki desu
    I-topic/Nom. ill be
    ‘I am ill’

    b. anata-wa/ga byoki desu
       you-topic/Nom.
       ‘You are ill’

    c. John-wa/ga byoki desu
       ‘John is ill’

    d. karera-wa/ga byoki desu
       they (plural)
       ‘They are ill’

\(^2\) Although ga-marking in these sentences is not ungrammatical, wa-marking is more natural in a neutral discourse.
Introduction

Nominative case assignment (ga marking) takes place independently of whether the sentence is tensed or not. This total lack of the relevant properties strongly indicates the non-presence of the functional category I/T in Japanese. Thus, "tense morphemes" like -ta (past) and -ru (present/non-past) in Japanese do not form a syntactic category I/T, but are part of a verbal head; and Japanese sentences are basically projections of V, rather than those of I/T. (cf. Fukui 1995, 108-19).

Let us turn to the other functional category C. The so-called question morpheme -ka ‘Q’ and the subordinate clause marker to have been assumed to be complementizers in Japanese. It is well known that Japanese interrogative clauses, whether they are wh-questions or yes/no questions, end up with the "particle" ka (Fukui 1995, 115):

(9) a. dare-ga sore-o kaimasi-ta ka
   who-Nom. it-accusative buy-past Q
   ‘Who bought it?’
   b. John-wa sore-o kaimasi-ta ka
   ‘Did John buy it?’
   c. John-wa sore-o kaimasi-ta
   ‘John bought it’
   d. Bill-wa [John-ga sore-o katta ka] siranai
      Bill-top. know not
      ‘Bill doesn’t know whether John bought it or not’
   e. *Bill-wa [John-ga sore-o katta]siranai

If this particle ka is an instance of C, it means that Japanese has a C system. Fukui suggests that this ka is a noun which has the feature [+Q] (op.cit. 115). According to him the nominal nature of ka is clearly shown in the ungrammaticality of (9e), since the factive verb sir- ‘know’ requires a noun phrase complement and the only plausible reason for the ungrammaticality of (9e),
Introduction

which is minimally different from the grammatical (9d) with respect to the presence/absence of ka, is that the embedded clause lacking ka does not satisfy this requirement by the verb sir- ‘know’. In fact, (9e) becomes a grammatical (declarative) sentence if we attach a nominal head koto ‘fact’ with the assigned case particle -o (accusative), to the embedded clause:

(10) Bill-wa [John-ga sore-o katta koto]-o siranai
    ‘Bill does not know the fact that John bought it’

The fact that case particles such as -ga and -o can be attached to a clause accompanied by ka also gives supporting evidence for the nominal status of ka. These case particles can only be attached to a noun phrase and can never be attached to other categories, as shown below:

(11) a. [NP John]-ga kita
    came
    ‘John came’
    b. [NP [s John-ga Mary-o nagutta] koto]-ga akiraka da
    Mary-Acc. hit (fact) obvious is
    ‘It is obvious that John hit Mary’
    c.*[s John-ga Mary-o nagutta]-ga akiraka-da
    ‘It is obvious that John hit Mary’
(12) a. John-ga [NP Mary]-o sitte-iru
    knows
    ‘John knows Mary’
    b. John-ga [NP [s Bill-ga Mary-o nagutta] koto]-o sitte-iru
    ‘John knows (the fact) that Bill hit Mary’
    c. *John-ga [s Bill-ga Mary-o nagutta]-o sitte-iru
Introduction

(13) a. [[s John-ga nani-o katta]ka]-ga mondai da
what-Acc. bought problem is
‘The problem is what John bought’
b. John-wa [[s Bill-ga nani-o kau]ka-o siritagatte-iru
buy want-to-know
‘John wants to know what Bill is going to buy’
c. boku-wa [[John-ga nani-o katta]ka-o siritai
I (male)
‘I want to know what John bought’

The grammaticality of these examples constitutes strong evidence for the nominal nature of ka (Fukui 1995, 116-117).

Concerning the status of to that is alleged to be the equivalent of the complementizer that, Fukui argues that to is a postposition, basing his claim on the fact that to has an independent use as a postposition in Japanese. Another piece of evidence can be obtained from the attachability of the topic marker -wa. A stronger piece of evidence that these two elements ka and to cannot constitute a single syntactic category, say, C, comes from the fact that it is possible to combine these two elements together and attach the topic marker -wa to them:

(14) [[[John-ga dare-o korosita]ka]to]-wa ii pointo da
who killed good point is
‘It is a good point to question who John killed’ (Fukui 1995, 120)

This is not the right place to discuss the legitimacy of Fukui’s other proposals that, for instance, Japanese lacks “specifiers”, that is, this language does not have elements that “close off” category projections, hence, Japanese noun phrases are projections of N, namely N’, not a maximal projection of NP, and so on. However, the above analysis is enough for the current purpose of my discussion.

Kiparsky (1995, 141-142) is interested in this issue, too and argues that the
choice of functional categories is subject to parametric variation. In the discussion of change of an OE basic structure, he argues that the category C itself is optional, where no principle of grammar requires its presence. C⁰ is obligatory in subordinate clauses and in sentences with a fronted wh-phrase. Where C⁰ is not required, its presence or absence is fixed on a language-specific basis. In German it is obligatory, in OE optional, and in Modern English prohibited - a parametric difference reflected both in the range of permissible main-clause word orders of these respective languages.

Thráinsson (1996, 253) presents arguments for the claim that languages vary with respect to the functional categories they instantiate. Some languages have "fused" AgrSP and TP (or an "unsplit IP" in pre-Pollockian terms) whereas other languages show evidence for a "split IP" (i.e. TP as a syntactic category separate from AgrSP). More specifically, it is argued that English and the Mainland Scandinavian languages are of the former type while Icelandic and (at least some dialects of) Faroese are of the latter kind.

Accordingly, Thráinsson's answer to the question (2) is "no", and he rejects the idea that all languages "select" the whole set of functional categories made available by UG. Hence, clauses can vary within a given language with respect to their architecture, in that some clause types contain fewer functional categories than others. Instead of the Structure Uniformity Hypothesis (3), he adopts the following (Thráinsson 1996, 257):

(15) The Limited Diversity Hypothesis

Clausal architecture is determined by UG in the sense that UG defines the set of functional categories, \{F₁, F₂, ..., Fₙ\}, that languages "select" from. Cross-linguistic and intra-linguistic variations are limited to the following:

a. It is not the case that all functional categories are instantiated in all languages.
Introduction

b. The functional categories selected by a given language may not be present in all clause types of that language.

c. The sequence (c-command relations) of those functional categories (dominance relations between the functional projections) that are directly related to morphological distinctions may vary from language to language, consistent with the Mirror Principle (Baker 1988, 13).

(15c), which presupposes Baker's Mirror Principle that morphological derivations must directly reflect syntactic derivations, is directly relevant to Thráinsson's further proposal. However, my argument will be different from theirs, so I will turn to this issue in the next section.

We have looked through a few proposals on the non-universality of functional categories. What follows from all these proposals is that different languages may have different functional categories, i.e., the choice of functional categories is subject to (parametric) variation.

2.2 Some theoretical problem

In the previous section, I dissociated myself from part of Thráinsson's hypothesis, though I agree with him on the basic argument that languages may vary with respect to the functional categories they have, and on the Real Minimalist Principle (op.cit.261):

(16) The Real Minimalist Principle:

Assume only those functional categories that you have evidence for.

He claims that a child acquiring L is guided by this principle, and will not assume that Fx is present in L unless (s)he finds evidence suggesting that it is. However, the problem is what counts as "evidence" and this is not obvious, as he suggests.
Introduction

What he takes as evidence for the presence of Fx is morphological marking, although he mentions syntactic evidence as well. I will examine this proposal in detail.

As mentioned above, Thráinsson argues that PE and the Mainland Scandinavian languages like Swedish or Danish have fused AgrSP and TP, while in some languages like Icelandic AgrSP and TP are available as separate functional categories. Morphological evidence for the split IP is “rich” agreement and tense morphology in a given language. He rejects Vikner’s (1994, 1995) definition of “rich verbal morphology” that “verbal morphology is rich in the relevant sense if there are person distinctions both in the singular and plural”, saying that it is rather mysterious why a distinction between two or more persons in the agreement morphology matters for the relevant definition. Following Bobaljik and Jonas (1993)’s proposal, Thráinsson suggests that if a verb form can bear both an Agreement marker (person, number) and a Tense marker simultaneously, Tense and Agreement morphology are “independent”. The basic idea can be clearly illustrated by the following examples from Icelandic:

(17) Icelandic

<table>
<thead>
<tr>
<th></th>
<th>Present</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>reyk.i</td>
<td>reyk.t.i</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>reyk.ir</td>
<td>reyk.t.ir</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>reyk.ir</td>
<td>reyk.t.i</td>
</tr>
<tr>
<td>pl.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>reykj.um</td>
<td>reykj.t.um</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>reyk.ið</td>
<td>reyk.t.uð</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>reykj.a</td>
<td>reykj.t.u</td>
</tr>
</tbody>
</table>

Icelandic has person and number agreement in both the present and the past tense. On the basis of this morphological evidence, Icelandic should have a separate AgrP and a TP. Meanwhile, English has minimal agreement in the present tense
and none in the past tense, as is shown below:

(18)  

<table>
<thead>
<tr>
<th></th>
<th>English</th>
</tr>
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<tbody>
<tr>
<td>Present</td>
<td>Past</td>
</tr>
<tr>
<td>sg. 1</td>
<td>smoke</td>
</tr>
<tr>
<td>2</td>
<td>smoke</td>
</tr>
<tr>
<td>3</td>
<td>smoke.s</td>
</tr>
<tr>
<td>pl. 1</td>
<td>smoke</td>
</tr>
<tr>
<td>2</td>
<td>smoke</td>
</tr>
<tr>
<td>3</td>
<td>smoke</td>
</tr>
<tr>
<td></td>
<td>smoke.Agr</td>
</tr>
</tbody>
</table>

There is no verb form in English that carries an overt agreement marker and an overt tense marker simultaneous except *be*. The same holds for Mainland Scandinavian. In this sense, morphological agreement is not “independent” of morphological tense in English and Mainland Scandinavian. Based on this, he concludes that English and Mainland Scandinavian do not have TP and AgrP as separate functional categories but have fused, i.e. they manifest unsplit IP. Each clause structure referred to is given below. (19a) illustrates the Icelandic type of languages, which have rich verb morphology and a separate TP and an AgrP. The reason why AgrSP precedes TP comes from the Lexicalist Mirror Principle that Thráinsson advocates, and according to which, a morphological feature associated with an overt morpheme close to the stem of a verb has to be checked off before a morphological feature associated with an overt morpheme farther from the stem can be checked. Hence, the morphological evidence in Icelandic suggests AgrSP over TP, because the tense morpheme is “inside” the agreement morpheme (op.cit.270). (19b) represents the English and Mainland Scandinavian type of languages, which do not separate Agr and T.
Introduction

(19) a. Icelandic type: “split IP” language

```
CP
   /\   /
  C   AgrSP
     /\   /
    Spec AgrS'
    /\  /\  /
   AgrS TP Spec T'
    /\  /
   T   AgrOP
     /\  /
    Spec AgrO'
    /\  /
   AgrO VP
```

(Irrelevant details omitted)

b. English and Mainland Scandinavian type: “unsplit IP” language

```
CP
   /\   /
  C   IP
     /\   /
    Spec I'
    /\  /
   I   VP
```

(Irrelevant details omitted)

Behind this conclusion, there is a widespread view that morphology reflects syntactic properties. This view has been repeated slightly differently by many
Introduction

researchers. For example, Thráinsson, as discussed above, relates rich verb morphology to split IP, while many other linguists correlate rich verb morphology with overt verb movement (see e.g. Platzack 1988, Holmberg and Platzack 1991, Roberts 1993, Rohrbacher 1994, Vikner 1994, 1995). Languages with rich verb morphology have independent V to I movement, whereas languages with poor verbal morphology do not.

Their arguments assume a more direct relationship between overt morphology and syntactic structure than is usually assumed in the Minimalist Program. The general principle that underlies their arguments is Baker's (1985, 1988) Mirror Principle:

(20) Morphological derivations must directly reflect syntactic derivations and (vice versa).

Syntax and morphology must go together, so, there must be a syntactic operation corresponding to each morpheme. This principle is assumed in Ouhalla (1991, 1994) as well, regarding the order of functional categories. If the verb complex has the order of [[Verb + Agr] +Tense], that is, the tense morpheme is “outside” the agreement morpheme as in Arabic, it reflects the order of functional categories, i.e. TP over AgrP.

I admit that there is some correspondence between morphological forms (inflectional systems) and corresponding syntactic properties. However, this does not entail that there is a one-to-one correspondence between morphological realizations and syntax, especially in the case of functional projections. That is, the presence of inflectional realizations in a given language does not always lead to the presence of a corresponding functional projection. For example, OE had the paradigm of verbs like ‘ic eom = I am’, ‘ic was = I was’, ‘ic cepe = I keep’ ‘ic cepte = I kept’. This paradigm apparently suggests the presence of a tense system in OE. However, as we will see in the subsequent chapters, the presence of the contrast between present/past forms does not presuppose the existence of a
Introduction

functional projection TP. So, morphological realizations in a language do not presuppose the existence of the putatively corresponding functional categories.

Evidence for this position comes from language acquisition. A similar question is raised by Tsimpli (1996, 92), that is, “to what extent morphology can be taken at its face value to represent the status of syntactic categories in early grammars?”. She assumes that morphology reflects only indirectly the availability of functional heads. She examines data for children acquiring Greek, and shows that a child who sporadically utters some agreement markers in Greek, does not have mastery of the syntax normally controlling the morphology. Data for children at the prefunctional stage in Greek involve agreement errors such as the examples (21) (op.cit. 92):

(21) a. miizi katses
    smell-3s socks
    Literal translation ‘socks smells’

b. epese ola
    fell-3s all-pl
    Literal translation ‘all(plural) fell(singular)’

c. pji olo ego
    drink-3s all I
    Literal translation ‘I drinks all’

If the presence of these affixes entailed the presence of a syntactic agreement head, the subject would have to agree with the verb because of the syntactic Spec-head agreement, as assumed for adult Greek grammars. However, in (21) there is no such agreement between agreement markers on verbs and nouns. The “agreement” errors, or rather the absence of subject-verb agreement in (21) suggests that “morphological agreement” in early child grammars does not reflect syntactic properties. Hence, these affixes do not constitute evidence for the presence of a related functional category in early child grammars. These
Introduction

morphemes are present in early Greek data due to a more general requirement that has to do with the morphological well-formedness of verbal forms in the language. On the assumption that verbs in Greek are bound morphemes, in the sense that they cannot surface in their root forms, it follows that the presence of an inflectional morpheme is independently required. Namely, Greek verbs cannot appear bare (Tsimpli 1996, 94-95).

Although Tsimpli limits her discussion to early child languages, it has a significant implication for adult grammars. Assuming the independence of the morphological component, some reservations are necessary when we say that morphological agreement in adult grammars reflects a syntactic relationship. As Tsimpli (op.cit.) points out, if the basis of the argumentation is merely the presence vs absence of morphological marking, it is impossible to resolve the question raised above. Some correlation of the functional projections with syntactic evidence is required, as well as their correlation with morphology.

A further piece of evidence that morphology does not always reflect syntactic processes concerns derivational morphology in adult grammars. According to Ackema and Neeleman (1999), there is competition between components, in particular, between syntax and morphology. Syntax and morphology are separate modules, and hence the presence of affixes does not always mean that the syntactic operation is involved in the derivation of a given word. For example, in the derivation of a compound "truck driver", there are two possibilities theoretically: the compound is either generated morphologically or derived by a syntactic operation, head-to-head movement. The syntactic analysis assumes a structure like (22a):

(22) a. [NP er [VP drive [NP truck]]]
   b. [NP [N [v truck drive ] er ][VP t V [NP t N]]]

The suffix -er, the noun truck and the verb drive all start out as the head of an independent maximal projection, as in (22a) and they are joined by movement of
Introduction

*truck* to *drive* and of the resulting complex verb to *-er*, as in (22b). The syntactic analysis wrongly predicts that materials which can be inserted in the maximal projections of nouns such as *truck* and verbs such as *drive*, can also be inserted in the structure underlying synthetic compounds. The syntactic materials which can be inserted in the syntactic structure (23a) can never be inserted into the compound:

\[(23)\text{ a. to \[vp \text{reluctantly drive} \[np \text{a rusty truck}] \[pp \text{to Arizona}]\]}

\[\text{b. } *\[np \text{a \[v \text{truck drive} \text{-er}]vp \text{reluctantly t}v\[np \text{a rusty t}_N]\[pp \text{to Arizona}]]\]

This is easily explained under the morphological analysis, since the compound is formed not syntactically but morphologically. Hence, there is no underlying verbal projection in nominals derived by *-er* suffixation (Ackema and Neeleman 1999, 9f.).

Thráinsson (1996, 279-280) himself admits that he has dealt with easy cases to illustrate his basic idea, and raises the following question: could a language with poor inflectional morphology still have a split IP (i.e. a TP separate from AgrSP)? And he believes that the answer could be “yes”. When the morphology gives no clear indication as to whether the tense and agreement features are associated with a single overt morpheme or not, it would seem that the child acquiring the language would have to rely on syntactic evidence only for setting the split IP parameter.

Morphological richness gives only partial evidence for the presence of the corresponding functional projections. That is, morphology is dissociated from syntactic representations, and semantic features, some of which might be morphologically realized, do not always correspond to syntactic operations. Accordingly, the presence of a certain affix in a language does not always lead to the presence of a corresponding syntactic functional category in that language.

So, rich morphology does not imply that the language has a corresponding functional category, although it does not exclude the possibility that there is some
correspondence between morphological forms (inflectional systems) and corresponding syntactic properties. In chapter 3 on the D-system, I will discuss the possibility of the coexistence of a morphological case system and a syntactic D system in certain languages, showing that they are in principle compatible. However, I also argue that a diachronic viewpoint, as discussed in the next section, is necessary to decide the exact relation between morphology and syntax.

3. The nature of Maturation

The importance of functional categories has long been recognized, as discussed in the previous section, and language variation is to a large extent determined by them. Especially in the Minimalist Program framework, where morphological features are at its heart, differences between languages are attributed to differences between the features of lexical items in those languages, and specially between the features of lexical items belonging to the functional categories.

If I restate the above in my framework of the maturation of functional categories proposed in section 1, I have the claim: language variation is due to differences in the degree to which functional features are codified as grammatical categories, i.e. whether they are upgraded to functional categories which have their own projection and if so, which features are upgraded. My general position is that functional features are different from functional categories. It is one thing that languages have features; it is another that those features project a syntactic category. Features do not project automatically into syntactic categories and maximal projections, as pointed out by many researchers like Gelderen (1993, 2).

I admit that, compared to other proposals, my claim is heretical and perhaps goes beyond what the data provided can establish, and hence is somewhat speculative. However, my aim in this thesis is to propose a view of language development accommodating both historical facts and acquisition facts. For this
purpose, to simplify the issues as much as possible, and see what will come from this simplification is inevitable. My hypothesis necessarily involves referring to the unattested periods which instantiate the pure position I am postulating. However, these first attested stages often actually show incipient movement away from the pure position. Hence, there is much counter-evidence to what is claimed in this thesis and many theoretical problems should be more closely addressed subsequently. (On this kind of idealization, see now Chomsky, 2000, p.49f.)

One might ask what the exact nature of maturation in the history of languages is. In first language acquisition terms, maturation means that the introduction of new functional categories into the system marks the transition from one stage to the next. So does the emergence/rise of functional categories heading their own projections in diachronic change. In historical terms, however, maturation, the rise of functional categories, is better described as the reallocation of duties from pragmatics to syntax, and/or from morphology to syntax. The historical development of language is, in other words, the change in some domain in a trading relation between pragmatics, morphology and syntax. Maturation means that more tasks go to syntax. Languages vary in this respect, with PE, and Japanese or Proto-Indo-European at opposite ends of the scale.

Let us think about this with regard to PE. We cannot tell whether the proposition represented by a sentence is true or false without knowing the time suggested by the sentence. For a proposition to be truth-evaluable, tense specification is necessary. However, to know the time, we must look at the context, or the situation. For example, when John says ‘Yesterday I lost my wallet,’ yesterday refers to the day before the day of John’s utterance. Hence, to decide whether the proposition is true or false, we must know the time of John’s utterance. But this kind of meaning is context-dependent, not linguistically encoded meaning, and is not the task of syntax but the task of pragmatics, even though decoding of some grammatical information involved in tense is the task of syntax. So, even in PE, interpretation is only partly determined by syntax.
Introduction

It seems that in earlier stage of many languages, interpretation was much more dependent on pragmatics or morphology than in Present-day languages. Therefore, interpretation was possible in the absence of relevant functional categories. Likewise, Japanese is much more dependent on pragmatics than English. Child languages are also more dependent on pragmatics or context than on grammatical/syntactic decoding.

I assume that the total expressive power of any language is the same over time. Category maturation, or more precisely, the reallocation of duties starts when the existing balance between the three components, pragmatics, morphology, and syntax, is upset. For example, when the morphological realization of case features on nouns begins to deteriorate, or when features on verbs begin to decay, the reallocation starts. This imbalance is caused either by some potential inherent in languages, which we can call “drift”, or by some extra-linguistic factors, such as language contact. It is true that drift remains one of the hypotheses to explain language change that is not well established, but it has been referred to by a few linguists (Lakoff 1972, Vennemann 1975 among others) as a possible factor causing language change. They have shown how, while Sapir (1921) was thinking of language-specific changes, certain separate and isolated phenomena are really related and part of a larger change. Vennemann (1975) argues that English has been subject to a major drift, which has been shared with many other languages, causing a change from OV to VO order: that is, he has tried to establish causal relationships among individual changes.

In the case of English, the latter factor, language contact, might have had a strong influence on the development of the language system. As is well known,

3 Under pragmatics I include the elaborate inference system used in adult speech, including the reference to the immediate context, facial expressions, gestures, tones, etc.

4 I am using “component” in a pre-theoretical sense. I do not wish to claim that pragmatics is a component of the grammar.
Introduction

English is unusual in that it has more elaborately developed functional category systems, compared with other modern European languages.

I propose the following diagram to show the balance among the three components:

![Diagram]

If the dotted triangle represents the total resources - syntactic, morphological and pragmatic - that the languages of the world can jointly bring to a characterization of the language faculty, individual languages, varying over time and space, can move around in this universal quality space, such that language A will be more morphologically oriented, language B more syntactically oriented etc. That is, while I take it that all languages have equal expressive power (except perhaps for differences of vocabulary) the devices used to express the proposition we can entertain will vary from language to language.

Some balance among the three is held and when this existing balance is lost, a reallocation of duties starts. Thus, if morphology deteriorates, either syntax takes over the role of morphology, or pragmatics takes it over.

Various alternatives are shown in (25). The Language 1 is well-balanced between the three components, while Language 2 is pragmatics-oriented, Language 3 morphology oriented, and Language 4 syntax-oriented:

![Diagram]
For example, English, the diachronic development of which is my main concern in this thesis, was once a morphology-oriented language, i.e. a language of type 3. The demise of morphology in English triggered the emergence of functional categories, as I shall elaborate in subsequent chapters. PE is described as a language of type 4, that is, a syntax-prominent language. In first language acquisition terms, child English grammar, which starts as a language of type 2, is developing into a language of type 4.

In section 1, I kept open the options as to whether the exact content of maturation in the historical domain is the same as in the ontogenetic one. Here, I can decide this issue. The difference between child language development and diachronic development is a difference in the direction of the reallocation of duties. In the case of language acquisition, it is from pragmatics to syntax, while in the case of the historical development of English it is from morphology to syntax.

What I should point out here is that the triggering factor for this reallocation of duties does not always have to be the demise, or deterioration of morphology.
Introduction

don't deny the predominance of the demise of some morphology as the triggering factor in the reallocation, but, it need not be a unique factor and other determinants are conceivable. In principle, any reallocation of duties is possible, e.g. from syntax to morphology, or from syntax to pragmatics, etc. However, as I discuss in the next section more properly, I suggest that there may be a unidirectionality in the reallocation of duties, such that every reallocation targets syntax. Most diachronic changes can then be described in terms of functional category maturation or the emergence of functional categories, meaning that more tasks are encoded in syntax.

4 Unidirectionality

As I suggested in the previous section, my idea of the reallocation of duties suggests the unidirectionality of language development. The reallocation is systematically realized as the emergence of functional categories, that is, every reallocation targets syntax: a surprisingly strong hypothesis. Unlike first language acquisition, in which development is always unidirectional and there is no possibility of change in the opposite direction, there is the logical possibility of such change in the case of diachrony. If there existed some language in which the opposite direction of diachronic change took place, that is, some items started as purely grammatical functional categories without any intrinsic meaning, came to acquire concrete meaning gradually and ended up as substantive lexical categories, it would undermine my hypothesis. The hypothesis would then be limited to only a small group of languages like English or Japanese, and it could

5 The phenomenon of overgeneralization and subsequent "retreat" to a grammar without overgeneralization might look like an instance of the opposite directionality in child language. However, as argued in Osawa (1995), this is not in fact a counter-example.
Introduction

never be a universal principle.

However, as far as I know, there has been no such systematic linguistic change attested so far, though the possibility of change in the opposite direction can never be excluded. Possible counter-examples against the claim that every reallocation targets syntax may come from so-called “morphologization”: for instance, the development of the inflectional future tense formation from the earlier periphrastic ones in the Romance languages and the development of the dental tense suffixes from free morphemes in the Germanic languages. They appear to provide good examples of reallocation from syntax to morphology. Let me clarify that they can constitute true counterexamples, only if the task which was done syntactically before came to be taken care of morphologically, since reallocation means the reallocation of the task from one domain to another on my hypothesis. Hence, the morphologization, that is, the development of independent words into inflections need not always be counterexamples. In the case of the German dental suffix, if the binding of the E-role which was done by syntactic operation has become taken care of by morphological process, like affixation, then it is a true counter-example. However, the use of dental suffixes was an innovation which occurred in the Germanic languages, and while it is said that its ancestor may have something to do with the enclitic use of the preterit forms of the verb *do*, its origins remain uncertain. Concerning the Latin examples, if the future tense which was syntactically expressed came to be expressed morphologically, it would be a true blow to my argument. However, the brief history of the future tense in the Romance languages is explained as follows by Hopper and Traugott (1993: 9, 42, 44). In Latin, the future tense was originally expressed inflectionally. Then, the periphrastic form using *habere* ‘have’ appeared, but, we should take note that this *habere* was a transitive verb meaning ‘possess’ and took a nominal object. This form came to have a future meaning and competed with a morphological future form for some while, and finally replaced the older form. This *habere* was the source of inflections forming a future tense in various languages. The history of this development is
Introduction

illustrated below:

(26) a. cantabo
    sing-lsg:Future
    ‘I will sing’
   
   b. Haec habeo cantare
    these have-lsg:present sing-infinitive
    ‘I have these things to sing’

   c. (je) chant-e-r-ai
   
   d. (je) vais chanter (Hopper and Traugott 1993, 42)

(26b) acquired a meaning of obligation or future orientation. The infinitive became the complement of habeo and the adjacent form appeared. The process is sketched below.

(27) Classical Latin [[cantare habeo]] (B.C. 75 ~ A.D. 175)
  Late Latin [cantare habeo] (A.D. 175 ~600)
  French [chant-e-r-ai] (Hopper and Traugott 1993, 44)

Although the change from (26b) to (26c) appears to involve a reallocation from syntax to morphology, when put in a wider perspective, this is not necessarily the case, since coexistence of alternative forms precludes this as a natural explanation. Moreover, (26b) cannot be decisive in determining whether the binding of the E-position was done syntactically in Latin since other syntactic evidence of the presence of the T/I-position like subject requirement was not available in Latin.

It is useful to show how this issue of unidirectionality has been discussed by researchers. My notion of “maturation” corresponds in part to grammaticalization in the historical domain. The term “grammaticalization” goes back to Meillet (1912), but the idea had already been proposed by Humboldt in the nineteenth century. Some contemporary linguists like C. Lehmann (1982),
Introduction

Heine, Claudi, and Hünnemeyer (1991), Givón (1991) and most recently, Hopper and Traugott (1993) have provided detailed discussions of this topic, with grammaticalization from the diachronic perspective being hypothesized to be a unidirectional phenomenon. Although their idea of grammaticalization is not always identical to my idea of maturation, the notions overlap. Grammaticalization, by their definition, is the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and once grammaticalized, continue to develop new grammatical functions. In more familiar terms, content words or open class items tend to become grammatical function words. This tendency has been observed cross-linguistically. In the case of English, the so-called reanalysis of lexical verbs as auxiliaries, like modals, do, and have / be is a good example. “Be going to” is not yet established as an auxiliary but its lexical meaning has weakened and it serves a grammatical function in PE. Likewise, in French the lexical verb avoir (have) is used as an auxiliary to form the passé composé.

Hopper and Traugott (op.cit.) say that when a form undergoes grammaticalization from a lexical to a grammatical form, it loses the morphological and syntactic properties that would identify it as a full member of one of the major grammatical categories like noun or verb (our lexical categories). In its most extreme form such a change results in a cline of categoriality, statable as:

\[(28) \text{major category ( > adjectival / adverb) > minor category} \]

(Hopper and Traugott 1993, 104)

The minor categories are auxiliary verbs, conjunctions, demonstratives and perhaps others. In their theory adjectives and adverbs comprise an intermediate degree between the major and minor categories. Their minor categories are very close to our functional categories, although they do not treat tense as a category. Perhaps, their most important assertion is the following:
Introduction

(29) Given the theory of unidirectionality, it can be hypothesized that diachronically all minor categories have their origin in major categories.

(Hopper and Traugott 1993,104)

Although this is a very strong assertion, it matches my hypothesis that language started purely lexical-thematic and then gradually developed grammatical functional categories. However, the problem with their assertion is that it does not take into consideration the upgrading of features to syntactic elements such as tense. Moreover, many researchers presuppose that reanalysis is necessarily involved in grammaticalization, which I claim is not correct (See Osawa 1996 for discussion). That is, my idea of maturation is not entirely reduced to grammaticalization, but covers a wider range of phenomena, from the restructuring of content words as grammatical words to the syntactic realization of features. Therefore, some new theory specific to this phenomenon is necessary.

A vast number of attested examples show that this tendency, be it maturation or grammaticalization, is strongly supported, with counter-examples, if any, being very few. For example, the occasional lexicalization of grammatical items does not comprise a strong counter-example to this assertion. In German, the second person singular familiar pronoun *du* is lexicalized as the verb *duzen* ‘call each other by *du*’. This is enrichment of the lexicon, or rather word formation and has little to do with the process of degrammaticalization, the reverse of grammaticalization. In no examples of this kind is an affix upgraded to the status of verb or any other lexical category. However, no one knows what took place in the undocumented period of human languages, so some inference based on the available data is unavoidable for those periods for which there are no data. This means that my position is an easy target to attack, but, the available data are too vast to be ignored. It is sufficient to say that I do not deny the possibility of the opposite direction of language development, but, the evidence is so
overwhelming that my hypothesis is strongly supported. If apparent counterexamples do occur, they should hopefully be amenable to alternative explanation.

Assuming the truth of this assertion, language variation resides in differences in the syntactic development of functional categories.

5. Organization of this thesis

In chapter 2, I will take up first language acquisition. First, in section 1, I will give a brief outline of the maturation theory, which argues that functional categories emerge later in child grammars, and give reasons why I advocate this theory instead of other approaches. On my hypothesis this category maturation mechanism is supposed to be working in diachronic language change too. Next, to test my maturation hypothesis that functional categories are absent from child utterance from around the age of 20 to 24 months, I will examine the data uttered by young children acquiring English. Section 2 discusses the absence of a D-system, and section 3, the absence of a T/I-system. We will see that this is indeed the case with child speech: that is, child grammars lack a D-system and a T/I-system.

The important properties of early child grammars, which will have great implications for our later discussion are: (a) early child grammars consist of four lexical categories (N, V, A, P) and their projections (NP, VP, AP, PP). (b) early child grammars have no D-system, and hence, no acquisition of referential determiners such as *a/an, the* and the possessive determiners ‘s. (c) early child grammars have no T/I-system, and hence, children do not acquire finite verb forms, auxiliaries, and syntactic case marking.

Chapter 3 is devoted to the D-system in adult grammars. I will show that a syntactic D-system emerged at a certain stage of the diachronic development of English, due to the demise of morphological case. First, in section 2, I will introduce the DP analysis (Abney 1987), which I assume for PE nominals. In
section 3, I will show that there was no DP in OE, hence there were no determiners. In section 4, drawing on Higginbotham (1985), the task of a D-system, which is to determine the referential status of a noun, and turn an NP into a DP, is clarified. This task is done by either morphological case or a functional category D. Hence, the nominal system of languages of the world can be described in terms of the combinations of morphological case and a functional D-system. Some languages have only morphological case, but no D-system. Others have only a DP. I have examined some cross-linguistic data, and shown that this is in fact the case with most documented languages. In the case of OE, richer morphological case performed the task.

In section 5, I have answered the question what triggered the emergence of a DP in English. Since morphological case distinctions decayed, a functional category D was introduced to do the same task. Further evidence for this claim is provided by the absence of gerund constructions in OE, since gerunds are one instantiation of a D-system.

Chapter 4 is devoted to a discussion of the emergence of TP. I argue that the functional category TP/IP emerged in the development of the language. What triggered the emergence of T/I mainly is the development of hypotactic structure, which has reached the stage of embedding. In section 2, the treatment of tense as a referential argument in parallel with D in DP is introduced: verbs have the E(vent) position or E-role universally, and this position must be bound for semantic well-formedness. In section 3, we will see that not only T/I, but other elements such as aspect, temporal adverbials or temporal affixes can bind the E position.

In section 4, the relation between aspect and tense will be clarified. Against the standard Indo-Europeanist assumption that tense has developed from aspect, I claim that aspect and tense have developed independently, since tense is conceptually different from aspect, although they are interrelated. We will observe that aspect can bind the E position in earlier languages like ancient Greek and in early child speech. In subsequent sections 5 and 6, we will see that OE
had no syntactic T/I-system, while PE has a TP/IP. We will show that much of the syntactic evidence for this was lacking in OE: specifically the subject requirement, auxiliaries, and other syntactic effects.

In section 7, having looked at Enç’s (1987) Anchoring Conditions, we will see that the introduction of embedding in English triggered a functional category T/I. That is, in languages with embedding, a structural requirement is necessary for temporal interpretation. For semantic well-formedness, the E-role must be associated with speech time. Although finite main clauses have direct access to the speech time, embedded clauses do not. Accordingly, the embedded tense must be linked to the speech time and this linking can be effected only structurally, i.e. by the establishment of the functional projections CP and TP/IP. Assuming that earliest OE had no true embedding, no presence of a T-system in OE easily follows. The introduction of embedding in English triggered the establishment of a syntactic T/I-system.

Finally I will conclude the whole discussion in chapter 5.
1. **Introduction: the maturation hypothesis**

As mentioned in chapter 1, my hypothesis is that there might be the same mechanism working in two domains, first language acquisition, and historical change, and this mechanism is the rise of functional categories at certain stages of development. This category maturation was originally proposed to explain first language acquisition, but a number of alternative approaches which are at variance with this theory have been put forward. Accordingly, before looking at early child grammars in detail to test my hypothesis, it is desirable to give a brief outline of the maturation theory and to give reasons why I advocate this theory instead of other approaches.

The maturation theory, which dates back to Lebeaux (1988), Radford (1990) and Tsimpli (1991), argues that the structure of early child grammars around the age of 24 months (+/- 20%) at the two-word, or the three-word stage, is equivalent to that responsible for adult clause structure without functional projections. That is, early child grammars contain no functional projections and these categories emerge later in the target language. This theory is consistent with the traditional observation that early child utterance at the early multi-word stage is
First Language Acquisition

referred to as "telegraphic speech", which lacks so-called "closed-class" items such as determiners, auxiliaries, and tense inflections.

However, there is another approach to language acquisition advocated by many researchers. This asserts, in its strongest version, that all functional categories, or in its weaker version, that some of them are present and play a role from the very beginning of child grammars (cf. Weissenborn 1992, Déprez and Pierce 1993, Rizzi 1993/1994, Platzack 1994, Wexler 1994, etc.). I will review the main points of both approaches and show how the maturation theory fits in with early child data.

Assuming that UG, a set of universal notions and principles which do not vary across languages, determines the structural and grammatical properties of all languages of the world, there are nevertheless some language-specific properties which are not fully determined by UG. This language variation has to be accounted for, and there are basically two hypotheses to do it. On one hypothesis, parametric variation is assumed to be associated with the principles of UG (cf. Chomsky 1986), while on the other approach, developed by Borer (1984), cross-linguistic variation is associated with individual items in the lexicon, more specifically, functional categories. The latter approach exploits the distinction between lexical (substantives) and functional categories, a distinction which is probably deeply seated in the human mind. Lexical (substantive) categories such as verbs, nouns, and adjectives, which are defined in terms of the feature matrix [±N, ±V], are supposed to have fixed properties across language, up to Saussurean arbitrariness and hence are not subject to parametric variation. They are said to correspond to conceptual entries in the mental lexicon which is not a proper subpart of the language module, but belongs to the central cognitive systems. By contrast, functional categories, e.g. determiners, complementizers, and inflections, are assumed to have no such fixed properties across languages, and hence, are subject to variation. Although there are some who deny the existence of functional categories like Hudson (1997), and I admit the controversial nature of this issue since their theoretical status remains unresolved,
I argue that they are explanatory in a way no other construct in current theory is. As well as Thráinsson's discussion (1996), for example, Hockstra (1995) argued that the primary motivation for functional categories was the insufficient number of positions provided by a simple phrase structure configuration. Without introducing functional projections, N-movement within nominal phrases cannot be accounted for, and the occurrence of finite root verbs in a different position in V2 languages cannot be captured.

The set of functional categories constitutes a sub-module of the language system. Despite this bifurcation both lexical categories and functional categories are included in one lexicon which straddles the central system and the language faculty (cf. Chomsky 1993, 1995, Tsimpli 1996).

As I discussed in chapter 1, in the framework of the Minimalist Program, differences between languages are reduced to differences between the features of items belonging to the set of functional categories. Hence, it is no longer plausible to associate variation with principles of UG. In fact, one problem with the earlier hypothesis is that it predicts uniformity in behaviour among the elements which fall under the scope of a given parameter: for example, the Head-Parameter predicts a uniform pattern in the ordering of heads with respect to their complements regardless of the categorial status of the head involved. However, as is clear from a number of languages, this prediction is not born out. For example, in some languages like German and Dutch, verbs take their complements to the left, (i.e. OV), while adpositions take their complements to the right (i.e. PO). See Tsimpli (1996, 5) for more detail.

This has important implication for language acquisition research as well as for the phenomenon of language variation. As we will see in subsequent sections of this chapter, early child speech is remarkably similar from language to language as well as from child to child. If (parametric) variation is exclusively associated with functional categories, the total absence of the kind of (parametric) variation which is observed in adult speech is predicted if we assume that functional categories are lacking in child grammars.
First Language Acquisition

Even proponents of the continuity theory, who assert that the child’s learning device does not change over time, must answer the question why child language is less “structural” than its adult counterpart, and why functional categories are activated later, despite their presence from the beginning. No one can deny the “developmental aspect” of language acquisition: some constructions appear earlier than others, and some elements are not observed at all at a certain stage of acquisition, etc. There are two main theories to explain this: the maturational theory, which I am adopting; and the continuity hypothesis, to which I turn first.

The Continuity Hypothesis:
The Continuity Hypothesis says that all principles of UG and all parameter settings are available from the very beginning of language acquisition, that is, the grammatical constraints and parameter settings are said to be the same for child and adult language (Pinker 1984, 1987, Hyams 1986, 1987). Even in the initial stages of language acquisition, clause structure is similar to the clause structure of the adult grammar, in that both functional and substantive categories and their respective projections are accessible to the learner and not constrained by maturation. Parameters, however, are not yet fixed to their target value. Parameter-setting is dependent on the availability of an appropriate set of data referred to as “triggering” data. These data are distinct from input data in that it is only at a certain stage of language acquisition that their presence in the linguistic input leads to parameters being set to their target value (cf. Tsimpli 1996, 10).

Differences between adult and child speech are attributed to external factors, i.e. to developmental delays in domains other than grammatical competence (UG). Under this hypothesis, some or all functional categories are present in child’s grammars from the beginning, prompting the question: why aren’t they overtly realized? According to advocates of this hypothesis, it is, for instance, due to the child’s limited vocabulary, or limited memory. For example, contrary to the
First Language Acquisition

maturation theory, in Weissenborn (1990) and Boser, Lust, Santelmann and
Whitman (1992), the German child is said to have an IP and a CP already at the
two-word stage. The fact that the child does not use the full CP-structure is due
to the complexity of the morphological paradigm of German verbs. According
to Weissenborn’s (1992) analysis of early null subjects, young children leave out
many subjects that are required in the adult counterpart because they have not yet
acquired the appropriate pragmatic constraints that hold for null versus overt

The Maturation Hypothesis:
An alternative approach is the maturation hypothesis which argues that certain
grammatical properties are missing from early child grammars until the
appearance of the related principles or grammatical categories regulating those
properties. These categories and principles are subject to maturation. This
hypothesis is divided into two different positions: one assumes that maturation
affects the Principles of UG (Felix 1984, Borer and Wexler, 1987), i.e. “UG-
associated” maturation; while the second position assumes that maturation affects
functional categories (Radford 1990, Guilfoyle and Noonan 1988, Tsimpi 1991),
which is sometimes called the “Structure-building” account. The first of these,
i.e. UG-associated maturation, has been further divided in two potentially
different ways: first by Felix (1984) who, unlike the continuity theorists, implies
that UG is not available at the initial stage; second by Borer and Wexler (1987,
1988) who assume that maturation affects certain notions or categories associated
with UG. I will introduce each of these approaches, drawing on Tsimpli (1996),
Clahsen (1996), Sorace et. al. (1998) among others.

1: UG-associated maturation
a. UG-unconstrained maturation:
This theory assumes that child grammars are fundamentally different from their
First Language Acquisition

adult counterparts, because early child grammars are not regulated by syntactic principles, since UG principles are not available at this early stage. Early child grammars can be “wild”.

There are several theoretical problems with this approach, which assumes that early child grammars are inconsistent with UG. Above all, Felix asserts that sentence structure in the early stages is regulated by semantic properties of lexical elements in the absence of X'-theory, a part of UG. He claims that only when X'-theory matures, are the possible sentence structures, i.e. the possible word—order patterns allowed in the target language. That is, according to him, semantic structure provides an alternative representation in the absence of X'-theory, and a child abandons this semantic representation only on the maturation of the relevant UG principle. This is a transition from one stage A to a qualitatively different stage B. But crucially he gives no principled explanation for this kind of change. Moreover, early child sentence structure, which he describes in terms of the representation of semantic properties, can be explained in terms of theta-role assignment, which is standardly taken to be part of syntax. Hence, his “semantic structure” can be reinterpreted in syntactic terms.

b. UG-constrained maturation:
According to this theory, principles of UG are present from the beginning, but specific elements of linguistic knowledge are scheduled to be operative at a later stage. In particular, the absence of verbal passives in child grammars is ascribed to the non-availability of the notion of A-chains to children (Borer and Wexler 1987, 1992). In a standard assumption under the Government and Binding framework, passive movement is one instance of NP-movement, which creates an A-chain. The notion of A-chain is subject to maturation. Early child syntax is more restrictive than adult syntax because it is affected by developmental learning constraints that uniquely characterise child grammars and generate a subset of the representations that are possible in adult grammars. Those constraints, which restrict the availability of grammatical categories or notions to the child are
First Language Acquisition

successively lost due to maturation.

More recent developments of this theory have concentrated on what is called the “Optional Infinitive” stage (cf. Wexler, 1994, 1998, Hoekstra and Hyams 1998). In some languages, like French, children go through a stage of alternating between finite and non-finite verb forms in root (main) clauses; that is, they optionally produce Root Infinitives. The existence of this stage is alleged to provide support for the presence of a functional projection, TenseP/InflP, at the earliest stage. I will take up this phenomenon and show how this analysis is problematic.

According to observations by Pierce (1989), French children from around 20 months to 30 months produced both finite and non-finite forms of lexical verbs in main clauses and these forms had systematically different distributions with respect to the negative morpheme pas. Finite verb forms preceded pas, but if the verb was non-finite, it followed pas. Some examples of children’s utterances from Pierce (1989) are given below:

(1) [-finite] verbs
   a. pas manger la poupée
      not eat the doll
   b. pas tomber bébé
      not fall baby

(2) [+finite] verbs
   a. marche pas
      walks not
   b. est pas mort
      is not dead

(Cited from Wexler 1994,309-310)

Wexler argues that these examples clearly indicate that French speaking children at this stage know the finite and non-finite distinction and know that [+finite]
verb forms must move to an appropriate functional projection above *pas*, i.e. to Tense/Infl. As in adult French grammars, Tense must be bound to a verb in early child French. By contrast, a non-finite verb form does not have to move since a non-finite inflection does not have to be bound. On the basis of the French data, Wexler concludes (op.cit. 311-312):

(3) There is an early optional infinitive stage in which
a. finite and non-finite forms are in free variation, and
b. the finite forms have moved to their correct position

In terms of the child’s grammar he concludes:

(4) There is an early (“optional infinitive”) stage in which the child
a. knows the possibility of head (in particular V) movement
b. knows that head movement is forced in the finite case (i.e. knows the stray morpheme filter\(^1\) and its application to Tense)
c. knows the Principle of Economy which implies that infinitival verbs do not move, and yet
d. does not know that non-finite verbs cannot appear as main verbs

As Wexler admits, the optional infinitive stage is a surprising state of affairs. The child knows quite abstract principles such as (4a-c), yet does not know that non-finite verbs are disallowed as main verbs. There is no plausible answer given to the question, however: why do children who know the \([+/-\text{finite}]\) distinction since their grammars have Tense/Infl projection, not know the rule which disallows non-finite verbs as main verbs. The fact is, children use more non-inflected forms in contexts where adults use finite verbs. This fact is

\(^1\) The stray morpheme filter means that Tense must be bound to a verb, since it has the lexical feature of a bound morpheme. A non-finite inflection does not have to be bound.
analyzed differently under the functional category maturation hypothesis, as we will see later. However, Wexler exploits the data as evidence for the presence of Tense/Inf in early child grammars.

Secondly, Wexler’s UG-constrained maturation assumes in general that early child syntax is more restrictive than adult syntax. However, this “optional infinitive” stage, if it is assumed to exist, means that child syntax is less restrictive since this “optional infinitive” stage is not accepted in adult syntax. This situation underlies the more general problem of optionality. Given Economy of Derivation (Chomsky 1991, 1992), UG does not allow optional processes. Hence, the optionality of children’s verbal forms, which are not accepted in adult grammars, is a real problem. Accordingly, Wexler tries to find an explanation; for example, that T(ense) is optional for the child. If T exists in the derivation of a phrase marker, the verb raises; if T does not exist, then the sentence will be treated like an infinitival sentence. However, it is not clear why optional T is possible in UG. More recently, Wexler (1998) has sought other solutions, but he admits that none of them seems satisfactory.

In addition to those problems, there are doubts concerning the “quality” of the data, and some problems regarding the handling of the numbers. For discussion, see Atkinson (1996).

2 The Structure-building account
Maturation affects functional categories rather than principles of UG. Functional categories are absent in early child grammars from the age of 18 to 24 months because they appear after the two-word stage, i.e. in the third year of life by a process of maturation. This hypothesis is not inconsistent with the continuity hypothesis in that UG principles are available to a child from the onset of language acquisition and constrain possible grammars throughout the language acquisition process.
First Language Acquisition

There are several reasons why I advocate this functional category maturation hypothesis. First, the functional category maturation hypothesis can best account for the cross-linguistic similarities observed in early child grammars. For example, the phenomenon of missing arguments, particularly, missing subjects, characterises child speech across languages, regardless of whether the corresponding adult speech allows null subjects or not. Missing subject constructions are observed in English speaking children, while they are not observed in the target language, i.e. adult English. Further, variation in word order beyond what is possible in the adult languages is exhibited in much early child speech: subjects may appear in pre-verbal or post-verbal position in English, Greek, Spanish, French and so on.

As touched upon before, if parametric variation is exclusively associated with functional categories, the total absence of the kind of parametric variation which is observed in adult speech is predicted if we assume that functional categories are lacking in child grammars.

By contrast, in the continuity framework, the absence of parametric variation is not so straightforwardly explained. Within this framework, the absence of parametric variation from early child grammars is taken to be the result of "default" feature specification or "underspecification" of features associated with functional categories. That is, parameter setting at the early stages of acquisition assumes a default value. For a parameter to be fixed to its target value, children need to go through a "learning process" which amounts to matching syntactic features with the appropriate functional category (see Tsimpli 1996, 12-13). For this learning process "triggering data" are necessary. I will turn to the problem of triggering data later.

Let us see how this "default" parameter-setting is used to account for the missing or null subjects mentioned above. Hyams (1996) tries to provide a unified account of optional infinitives and null subjects in early child English by claiming that the I constituent can remain "underspecified" in early child grammars. According to her, there is a pragmatic rule which determines the
range of indices compatible with a functional head I. However, young children do not have the pragmatic principle of Tense/(Definiteness) interpretation which would disallow them from using infinitives in those contexts in which adults would use finite verbs. Child grammars contain an I with the full range of indexical features available for I, and indeed an I may be co-indexed with a temporal operator, yielding present time interpretations, contra-indexed, yielding past time interpretations, or I may be “underspecified” in which case I bears a zero index. In the last case, I has no tense features, and this accounts for the presence of early root infinitives. The same analysis is extended to early DPs.

Thus the differences between child and adult speech are explained in terms of an underdeveloped pragmatic element in early child grammars. She can still maintain that early child grammar is identical to its adult counterpart, in that both contain I. Later, thanks to the development of the pragmatic component, a child stops using null subjects. Hyams says: “on this view, the shift to the adult grammar, and hence away from root infinitives, null subjects, and determinerless nominals, involves a restructuring not of the syntax proper, but rather of the mapping between grammar and pragmatics. We see in the child’s development of nominal and temporal specificity, as with other developmental phenomena, an interaction of distinct modules - pragmatics, semantics, syntax, morphology...” (op.cit.115).

Leaving aside the question of the plausibility of the pragmatic rule that Hyams posits, it is mysterious why the inaccessibility of this pragmatic rule gives children a further interpretive option “co-indexation, contra-indexation, or zero-indexation”.

Tsimpli (1996, 13) also suggests that there is a problem with the notion of “default” feature specification. Examining Pierce’s (1989) claim that early child grammars have an Infl head to assign Nominative case to the subject inside VP, Tsimpli points out that on Pierce’s suggestion it is not the case that all parameters are supposed to assume a default value at the early stages of acquisition. The Infl-parameter is instantiated in its default value, while the VP-internal parameter
is set to the target value right from the start. However, there is no plausible reason given by the proponents of the continuity theory why only some parameters have default values, while others appear already set. Moreover, as pointed out by Atkinson (1996, fn.15) and Tsimpli (1996, 36, fn.7) the word “underspecification” or “default” is used differently and ambiguously by researchers, and it is not always clear what empirical data or learnability considerations would distinguish the two. For further discussion, see Atkinson (op.cit.) and Tsimpli (op.cit.).

I have already discussed a few problems involved in Wexler’s analysis of the Optional Infinitive stage above. I wish now to raise further important problems associated with hypotheses other than the theory of functional category maturation. The first problem concerns “triggering” data in the process of parameter-setting on the continuity hypothesis. In this approach, the transition from one stage to the next in the acquisition process is determined by the recognition on the part of the child of a set of “triggering data”. As mentioned above, in this framework parameters in early child speech are not yet fixed to their target value and parameter-setting is dependent on the availability of an appropriate set of data referred to as “triggering data” (Tsimpli 1996, 13).

The nature of the “triggering data” is not specified, however. Hence, a few more questions follow: why do certain elements but not others serve as triggering data? Triggering data are assumed to act as such only at a certain stage of language acquisition in the continuity framework. Hence, the second question is: why should the elements serving as triggering data serve as triggers at a certain stage but not at another, given that they are available to the child throughout all stages of development? It is not clear how this problem can be solved in the framework of the continuity hypothesis, according to which children are required to be sensitive to triggering data at only a certain stage.

In the maturation theory, this problem does not arise since the transition from one stage to the next is determined by inherent maturational factors, i.e. the
First Language Acquisition

emergence of new functional categories.

Finally, the maturation theory fits in naturally with the architecture of the human mind adopted by Fodor (1983) and with the account of the central system developed by Relevance Theory (Sperber and Wilson 1986). As mentioned above, substantives like nouns, verbs and adjectives are linked to a conceptual slot in the mental lexicon which is assumed to be part of the central cognitive system. This conceptual lexicon corresponds to the vocabulary used in the language of thought, in logical inferencing and indirectly in real (truth-conditional) semantics. Assuming that this vocabulary reflects mental properties which are not purely linguistic, and further that it does not need to refer to language-specific differences in the syntax proper, this mental lexicon is not contained in the language module. The mapping of concepts onto a linguistic/morphological representation can be assumed to take place at an interface level between the language faculty and the central cognitive system. The morphological component constitutes an interface in that it is accessible to both grammatical categories, i.e. functional categories and substantives, i.e. lexical categories. Substantive elements such as nouns, or verbs have conceptual entries in the mental lexicon (see Smith and Tsimpli 1995, Tsimpli 1996).

On the other hand, it is not equally clear that functional categories like agreement, or complementizers have a conceptual counterpart in the mental lexicon. There is a systematic correspondence between categories and concepts in the case of substantives, while functional categories lack such a correspondence. This does not mean, however, that functional categories lack semantic content altogether. Although they play a role in the interpretation, the correlation between, for example, the concept of time and the syntactic functional category Tense does not involve a one-to-one correspondence. As we will see in chapter 4, the concept of time can be expressed in a variety of ways both within languages and across languages (Tsimpli 1996, 28).

The distinction between substantive and functional categories is supported by
First Language Acquisition

the Relevance-theoretic notions of concepts. In Relevance Theory concepts are triples of entries: logical, encyclopaedic and lexical (Sperber and Wilson 1986, 85-93). The logical entry for a concept consists of a set of deductive rules. The encyclopaedic entry contains information about the extension and/or denotation of the concept, i.e. about the objects, events, properties which instantiate it. The lexical entry contains linguistic information of a syntactic, morphological and phonological kind. Occasionally, one entry for a particular concept may be empty or lacking. Auxiliaries may have no associated encyclopaedic information, although they have a lexical entry. Meanwhile, substantives have both encyclopaedic and lexical entries.

On the basis of these differences, it is quite plausible to distinguish functional categories from substantive ones with respect to their distinct status in the human mind. This, in turn, supports the claim of the maturation hypothesis that functional categories are exclusively responsible for cross-linguistic differences. The distinction is not without difficulties: in some cases the difference between substantive and functional categories is unclear. For example, auxiliaries are supposed to be functional categories, but they share a lot of properties with verbs, which are lexical categories. Moreover, it is not obvious whether there are any differences between functional categories which are full words like auxiliaries or determiners and those which are not, like Agr or Tense. Although I admit the controversial aspect of the distinction, this dichotomy is still plausible because of the light it casts on the problems I am addressing here.

Given these theoretical and empirical reasons why the maturation theory is to be favoured, I will go to the next step to show the empirical support for the predictions made by the theory of maturation, giving examples from child data in the following sections. Before that, I will give the clause structure of early child speech at the prefunctional stage (i.e. the stage prior to the rise of functional categories in Tsimpli’s term). It consists of projections of substantive (lexical) categories only and on my hypothesis it is a projection of V, that is, a verb and its arguments, as shown below:
(5) The clause structure of early child grammars around the age of 24 months:

```
VP
  (NP) V' (NP)
  subject subject
  (NP) V (NP)
  object object
```

The structure of VP allows for base-generation of subjects and objects on either side of the verb. Hence, this predicts the four word orders: SVO, OVS, SOV, VOS, and these are all observed in early child speech. The parentheses mean that the element can be omitted.

2 Absence of a D-system in early child grammars

In the previous section, we have put forward the maturation hypothesis that functional categories are absent from child utterances from around the age of 20 to 24 months since they are "programmed" to appear after this. Accordingly we expect child grammars to lack a D-system and a T/I system. In this and the next sections, we will see that this is indeed the case with child speech by examining the data uttered by young children acquiring English. We turn to nominal structures first, and then move on to clause structures.

2.1 Absence of a D-system in early child English

Assuming that children have not developed a mechanism which could project NP into DP, it follows that early child nominals are simply lexical projections of a head Noun, an NP, while its adult counterpart is a DP. This means that there is no evidence of the acquisition of the morphosyntax of referential determiners
First Language Acquisition

such as, *a, the, this, that*, etc., of the possessive determiner *-s*, or of case-marked
pronominal determiners such as *I/me/my*. This claim is supported by the fact
that children do not use determiners in contexts where adults are required to use
them:

(6) a. Where helicopter? / Here helicopter./ Where bee? (Stefan 17months)
b. Open door. / Want ball./ Want car (Stefan 19)
c. Open can./Open box./ Eat cookie (Allison 22)
(Radford 1990, 83-84)

In the above examples, a singular count noun is required to be headed by
premodifiers in adult speech.

There are many possible counterexamples to the claim that child grammars
lack a D-system. Specifically, there are examples which show that children at
this stage use the demonstrative *this* and *that*, as Radford (1990, 100) points out:

(7) Want that. / Want this (Daniel 19)

How the above examples are analyzed may differ from researcher to researcher. *That*
and *this* might be analyzed as pronominal DPs (e.g. DPs headed by a head
pronominal D). If this were so, it would follow that Daniel had acquired a D-
system at the age of 19 months. However, the child who uttered (7) at this stage
never combined demonstratives with nominals. One of the defining properties
of functional categories is that they take a specific type of complement; for
example I takes a VP, etc. according to Abney (1987, 64-5). Therefore, there is
no plausible reason to say that *this* and *that* are determiners taking NP
complements. *That/this* is most plausibly analyzed as having the status of NP.
This NP analysis for *this/that* might be extended to other types of pronouns which
occur in child utterances such as *it, what*, etc. They are not case-marked
pronominal DPs, but caseless pronominal NPs. The most important thing is that
First Language Acquisition

children use *that* and *this* frequently at this stage, but there are no data recording the use of the articles *a/the*, compared with ample data showing the use of *that, this* and *it*:

(8) a. What’s this? Spoon (Paula 18)
    b. What do you want? Want cup (Daniel 23)

(Radford 1990, 84-85)

(The first part of each utterance is a question asked by an adult.)

Therefore, it appears that there is some difference in status between *a/the* and *this/that* in early child grammars.

Giusti (1997) argues for the different syntactic status of different determiners in adult grammars. Although I do not go into details here, some relevant points are useful for our discussion. She has examined those elements which have often been treated as determiners: articles, demonstratives and quantifiers. If they are all determiners, they are supposed to occupy the head D position. However, as she points out, they behave differently. Articles are close to the prototypical functional element in terms of the functional properties proposed by Abney (1987, 64f.). They are phonologically and morphologically dependent on the head noun; they are strictly inseparable from their complement; and although functional categories or articles play some role in interpretation, their semantic contribution is minuscule, compared with that of lexical categories.

On the other hand, demonstratives have a semantic value. Although they lack descriptive content like articles, they are crucial for the interpretation of the referential index of the noun phrase. Moreover, even if they constitute a closed class, they belong to the broad semantic field of deixis which includes adverbials and pronominals; and they are neither phonologically nor morphologically dependent. Belonging to a closed class, therefore, is not conclusive evidence for the functional status of demonstratives (Giusti op.cit. 111-112). It is true that the differentiation of demonstratives and articles is hard to draw in some cases.
However, the distinction is clear in cases where the reading of a sentence which is given by an empty D by default is overruled by the presence of demonstratives as discussed in section 4.2 of chapter three. Further, there are languages like KiSwahili which have demonstratives and lack articles. The obvious conclusion to draw from the above facts is that demonstratives should be differentiated from articles. In the literature, in fact, there is no agreement on the status of bare demonstratives, and Giusti (op.cit.) leaves open the question of what kind of category they are. Hence, I tentatively assume that demonstratives are not D-heads. Accordingly, it is not implausible to conclude that *that/this* in early child utterances is a NP. Hence, a better criterion for judging the acquisition of a D-system would be a child’s mastery of the articles *a/the*.

This conclusion fits in with the analysis of OE demonstratives in chapter 3. The OE demonstratives (*se* and *hes*) are analyzed not as determiners, but as having the status of N, and they were used as pronouns without the company of nominal complements, i.e. they were used independently.

In line with the above discussion, it follows that the sporadic occurrence of ‘*s in child utterances doesn’t entail that it is functioning as a genitive determiner as in adult speech, but rather as an NP. This sheds interesting light on the existence of potential counterexamples to the claim that children have not acquired the morphosyntax of genitive ‘*s. Typical examples are given in (9a, b):

(9)  
   a. Mommy’s / Mommy key  
       (Gia 20, holding mother’s key)  
       (Bloom 1970, 93)  
   b. It Daddy’s  
      (It’s Daddy’s)  
   c. Daddy one  
      (Daddy’s one)  
      (Smith 1973, 68)

Interestingly, according to the observation in Cazden (1968), some children at this stage use genitive ‘*s in pronominal possessives (i.e. possessives like Daddy’s
First Language Acquisition

where there is no overt nominal following the -'s) but systematically omit -'s in prenominal possessives (i.e. structures like Daddy's new car where the possessed nominal is overtly specified).

There is much debate about their grammatical status (cf. Radford 1990, 107). Constructions such as Mommy key or Daddy one pose no problem, since Mommy and Daddy function as the specifier of the following N-bar key/one. How should we analyze Mommy's and Daddy's? One possibility is that possessive -'s might have the status of a pro-N-bar constituent: this would mean that in the elliptic utterance Mommy's/Daddy's, the NP Mommy/Daddy would function as the specifier of the pronominal N-bar -'s. If this were right, (9b) and (9c) would have the following structures, respectively:

(10)   a. [NP [NP daddy][N' -'s ]]
       b. [NP[NP daddy][N' one]]

In (10) one and 's have the same categorial status: that is, children have (mis)analyzed possessives 's as an N-bar proform. However, a problem with this analysis is that we do not find structures such as *Want blue's' or Want 's'.

A second possibility would be to analyze 's as a derivational suffix which has the function of converting a noun into a predicative possessive adjective. Both analyses have drawbacks. This 's might be an "impostor" (i.e. a morpheme with much the same phonological forms as, but a different grammatical function from, its immediate adult counterpart). The sequence Daddy 's might be better analyzed as an inseparable nominal NP as a whole. If this is so, then, the presence of 's poses no threat to our claim.

2.2 Absence of Case-marking in Early Child Grammars

Radford (1990, ch7) says that because of the lack of a D-system, noun phrases in early child grammars are caseless. Case is a property of the DP, although case
straddles both the D-system and the I system. For example, nominative case is a functional property assigned to a functional category (=DP) by a functional category (an agreement-marked I).

Accordingly, the absence of functional categories and functional properties leads us to predict that there is no (syntactic) case system at all operating in early child English (cf. Kazman 1988, Guilfoyle and Noonan 1988). This view is based on the idea that (syntactic) case is functional.

This prediction is borne out in early child grammars. There is no nominative /objective contrast in pronouns and children use objective pronouns in both object position and subject position (Radford 1990, 175-176):

(11) a. Cuddle me  ‘Please cuddle me.’  (Jem 21)
    b. Me do it.  ‘I’ll do it.’  (Bethan 21)

However, the claim that child grammars at this stage lack a case system does not imply that no examples of nominative forms are found at all in their utterances. Neither does it assert that children at this stage have not acquired the morphosyntax of nominatives, that is, they do not know that nominative case is assigned to a DP which functions as the specifier of an agreement-marked I. Thus, we can find the following utterance:

(12) I’m busy now  (Kathryn 21) (Bloom 1970, 76)

The speaker of (12) does not know the conditions under which *I* is used, although she has uttered the word *I*. In fact, according to Bloom, Kathryn uttered the structure only once. Furthermore, Kathryn uses not only nominative pronouns like *I*, but also the objective form *me*, and even the genitive form *my*:

(13) a. Me like coffee
    b. No, my have ♦ this  (Bloom 1970, 49, 153, 159)
Thus, a sentence like (12) does not indicate that the speaker has acquired the syntax of nominative case marking. (See section 2.2. in chapter 1 for discussion of the relation between morphology and syntax.) Children use caseless NPs in contexts where adults require case-marked DPs, as is confirmed by a considerable body of evidence (Radford 1990, 185):

(14) a. Mummy car/ Cup tea (Stefan 17)
    b. Picture Gia (Gia 20)

Since nouns are not direct case assigners, it follows that *Mummy, tea* and *picture* are all located in caseless positions. If these structures occurred in adult speech, they would be ungrammatical. So adult grammars need the case-assigning determiner *s* and the case assigning “dummy” preposition *of* in the above examples. The occurrence of the above example provides us with further evidence that early child nominals are caseless NPs. The following example gives additional evidence in support of this assertion:

(15) Wayne go river (Radford 1990, 186)

Since the verb *go* is an intransitive and does not case-mark its complement, adult grammars would need a preposition *to* which case-marks its complement NP. The absence of *to* in (15), taken together with the absence of *of* in (14) provides us with strong evidence that children have not yet mastered the case-marking function of prepositions. However, again, this does not mean that children never use prepositions. In fact, there are a number of examples in which prepositional phrases are used by children, even though they are not aware of the requirement for a case-marking preposition to be used in prepositional contexts.
3 Absence of a T/I-system in early child grammars

3.1 Lack of inflected features

Since early child grammars have no TP/IP, children show no evidence for the acquisition of the morphosyntax of features associated with the T/I-system. In adult PE speech, tensed clauses have the status of TPs/IPs, maximal projections of a functional head T/I, which carries tense and agreement features, which must be discharged or realized onto a verbal stem. If the modal auxiliaries are base-generated under T/I, these features are realized on the modal in T/I. If T/I can be underlyingly empty, and a nonmodal auxiliary verb (perfective have, progressive be) is in the head V of VP, this nonmodal auxiliary verb moves out of VP into an empty head T/I position in TP/IP, where it can acquire the tense/agreement features. If T/I can be underlyingly empty, and there is no nonmodal auxiliary verb in VP, T/I-features are discharged onto the head (nonauxiliary) V of VP.

However, if the negative particle not occurs, this becomes a barrier preventing the T/I-features from being discharged onto the head V. Therefore, the following sentence is ungrammatical:

(16) *John not wrote it.

Accordingly, the dummy auxiliary do is inserted in T/I in order to provide a verbal stem for the tense/agreement features to be discharged onto. This is referred to as do-support.

If early child grammars lack a T/I-system, it follows that they also lack the associated grammatical features. First, if T/I is the locus of the tense/agreement properties of finite verbs, child utterances lack inflected verb forms such as +s, indicating a third person singular present tense form, or +d indicating a past tense form. This is indeed the case in child utterances. The verbs produced by young children are either uninflected base forms, or +ing forms, or participial
forms with +en:

(17) a. Hayley draw it. / Me talk. / Him gone
    b. Baby do it. / Daddy coming  (Radford 1990, 148)

Thus the child clauses have the status of VP:

(18) [VP [NP Baby] [v do] it]

As will be discussed in chapter 4, I treat tense as a referential argument. A VP has an E(vent)-role universally, and this E-role must be bound for semantic well-formedness. In the case of adult PE, the binder of the E-role is a syntactic functional category T. I propose that, in the case of child grammars, the binder is aspect. Specifically, +ing forms, or participial forms +en are aspectual elements denoting the imperfective progressive and the perfective respectively. There are much literature supporting the aspectual status of ~ing, and ~en. See, for instance, Comrie (1976), Dahl (1985), Smith (1991). These morphemes occur not as the result of a syntactic operation, but as the result of lexical affixation. Further, verbs in their base forms have an aspectual reading, in particular, imperfective; and crucially, aspect does not project in the clause structure as a functional category. The relation between aspect and tense, especially their grammatical status will be discussed in detail in chapter 4.

Potential counterexamples to the claim that child grammars have no I-system, and hence no inflected features are provided by apparently inflected forms which are observed sporadically in child utterances. As we have already argued in

2 There is an objection to the claim that the binder of the E-role in early child grammars is aspect, since aspect has no access to utterance time. However, the binding of the E-role is syntactic, so the fact that aspect has no access to utterance time is only indirectly relevant.
First Language Acquisation

Section 2 of Chapter 1, morphology reflects only indirectly the availability of functional heads. However, unlike Greek, for instance, where verbs cannot surface in their root forms, that is, Greek verbs cannot appear bare, present tense forms in English are basically identical to the bare form except in the third person singular. Careful investigation of the examples, however, will show that they are not counterexamples at all.

"Agreement" errors, or rather the absence of subject-verb agreement, are observed in early child English as well as in early Greek:

(19)  a. Where's helicopter? (Stefan 17)
     b. There's boots (Domenico 24)
     (Radford 1990, 165)

Moreover, children do not attach -'s to other lexical verbs, that is, they do not produce forms such as wants, goes, etc. The examples are almost entirely limited to the -'s form, and there is no productive use of other forms like is/am/are/was/were. What is more, the -'s-less forms are used alongside the -'s forms by the same children:

(20)  a. Where's helicopter./Where helicopter (Stefan 17)
     b. What's that./What that (Hayley 20)
     (Radford 1990, 166)

'S attachment is limited to a restricted set of lexical items, i.e. the locative pronouns and inanimate pronouns. They may be analyzed as semiformalic utterances, as Radford (op.cit.) suggests. Hence, the sporadic occurrence of "inflected" forms in early child English cannot constitute evidence for the presence of an I-system in early child grammars.
First Language Acquisition

3.2 Lack of auxiliaries

If early child clauses lack a T/I-system, we expect young children not to have mastered the morphosyntax of auxiliaries, whose essential function is to receive the tense/agreement features of T/I, (although the primary auxiliary do, which is only an empty carrier of the above features, may be different from other auxiliaries). Some auxiliaries do have intrinsic semantic content, but they must be distinguished from lexical verbs, in that verbs like begin, have additional lexical content: that is, aspectual verbs like begin have an encyclopaedic entry as well as a lexical entry, while modals do not. (See the discussion of the Relevance-theoretic notion of concepts above). If there is no T/I-system, it is predicted that there are no T/I-features which should be discharged onto the V stem. This is indeed the case. Neither the use of modal auxiliaries nor do-support is observed in early child speech: a child negative clause contains no auxiliary do, giving rise to examples which are ungrammatical in the adult language:

(21)  a. Man no go in there (Kathryn 22)
      b. Wayne not eat it (Daniel 23)
(Radford 1990, 152)

The above examples suggest that an early child clause is typically negated by positioning an invariable negative particle not or no before the predicate phrase.

Given that children have not acquired the use of do as a dummy auxiliary, we expect child grammars to lack the copula be as a dummy auxiliary, too. In adult grammars, be which is base-generated in VP should be raised to I to carry T/I-features, but children typically use a verbless construction where be is required in adult speech:
First Language Acquisition

(22)  a. Geraint naughty  
       (Bethan 20)  
       b. Hand cold  
       (Elen 20)  
       (Radford 1990, 156)

In addition to its use as a copula, *be* in English is said to have a second use as a progressive auxiliary. This progressive *be* also lacks real intrinsic semantic content and carries tense/agreement features of T/I. Early child speech lacks this progressive *be* too.

(23)  a. Baby talking  
       (Hayley 20)  
       b. Daddy coming  
       (Helen 21)  
       (Radford 1990, 159)

If early child grammars at this stage lack the progressive auxiliary *be*, we might expect that they have likewise not acquired the perfective auxiliary *have*. Although in adult speech, *have* is raised out of the VP in which it is base-generated into T/I to bear T/I-features, there is no need of V movement since child speech has no T/I-features. So *have* has no obvious functions syntactically or semantically in child grammars even as a marker of perfective aspect, since this is marked by the +en inflection. Moreover the perfective auxiliary is nonthematic since it can have a non-thematic pleonastic pronoun as its subject as in *There has been very little progress*. At this stage, however, child English allows only thematic constituents. Hence, the perfective *have* is not observed among young children:

(24)  a. Biscuit gone  
       (Angharad 22)  
       b. Tractor broken  
       (Daniel 23)  
       (Radford 1990, 149)

This analysis is further supported by the fact that children at this stage make use
First Language Acquisition

of lexical *have* meaning *possess, acquire* as shown in the examples below:

(25) a. Have money (Daniel 19)  
    b. Me have biscuit (Angharad 22)  
    (Radford 1990, 162)

This is consistent with the analysis of *have* in earlier English, to the effect that *have* in OE was a full lexical verb, meaning *possess*, and, was grammaticalized as an auxiliary *have* later. Although it is possible to argue that *have* acted as something like an auxiliary in OE as Anderson (p.c.) suggested, or, as Brinton (1988, 105) suggests, and it is controversial to argue that OE *habban* was grammaticalized later, not a few people are arguing for this grammaticalization analysis of *habban*. See Warner (1993, 92ff), for example.

4 Aspect in early child grammars

In this section, I argue that aspect rather than tense is involved in a number of examples that have been taken to show the existence of functional categories in early child language; and that aspect is not ‘functional’ in the relevant sense. As touched upon above, I argue that an E(vent)-role, which is present universally in the VP, is bound by aspect in early child grammars (cf. the discussion about the relation between aspect and tense in chapter 4, where I claim that aspect acted as a binder in much earlier languages like ancient Greek). Furthermore, in conformity with my analysis of early child grammars, I claim that aspect does not project in the clause structure as a functional category in either PE or earlier languages.

The claim that aspect does not constitute a syntactic functional projection in adult PE is supported by evidence from language acquisition. Data from several languages show that child grammars contain aspectual information at this
prefunctional stage. In the traditional literature early verbal forms at the prefunctional stage are said to exhibit distinctions between aspeucal categories in a consistent way (cf. Tsimpi 1996, 50). Brown (1973) points out that the -ing form in early child English is consistently used with non-stative verbs from the very beginning. According to Antinucci and Miller (1976), the distinction between stative and non-stative verbs is one of the earliest to appear in early child Italian, where the stative/non-stative distinction is a manifestation of situation type aspect according to Smith (1991). (See section 4 of chapter 4 for more details). This suggests that aspect is not a functional category. Accordingly, my discussion will henceforth presuppose that child grammars do not have functional categories: one of the main claims of Tsimpi (1996), on whose work my argument is built.

Stephany (1986, 379), examining data from Greek children, claims that perfective and imperfective verb stems are already formally distinguished at the prefunctional stage, as shown in the examples below:

\[(26)\]

\begin{align*}
\text{a. } & \text{zos} \text{o} & \text{kat} \text{ali} & \text{(1 year and 7 months)} \\
& \text{give-perfective-1s} & \text{spoon} \\
\text{b. } & \text{val} \text{ume} & \text{mus} \text{i} \text{ki} & \text{(1 year and 8 months)} \\
& \text{put-Perf.-lp} & \text{music} \\
\text{c. } & \text{kope} \text{les} & \text{ho} \text{e} \text{v} \text{une} & \text{(1 year and 9 months)} \\
& \text{girls} & \text{dance-imperfective-3p}
\end{align*}

(These examples are cited from Tsimpi 1996, 55)

The examples in (26a&b) are marked for perfective aspect while the past tense prefix is not present. In the corresponding adult Greek speech, a modal/tense marker must be realised syntactically as the head of TP/IP. The example (26c) has imperfective aspectual specification. Examples like (26a&b) are abundantly observed in the corpus of Greek child data. It is concluded that overt tense marking is absent from early child Greek grammars.
Tsimpli (1996) has also examined the crosslinguistic data from Modern Greek, German, French, Irish, Spanish and English, and has concluded that tense marking is absent in general from early child grammars. For example, children utter verbs in the infinitival form in matrix clauses. Data from French children have already been given in section 1. Some examples from child German are given below:

(27) a. papa suchen
daddy look for
b. mama sitzen
mummy sit (Tsimpli 1996, 58)

In both the French and the German data, finite tense marking is lacking. As pointed out by Lightbown (1977) and by Atkinson (1996, 460), one problem with identifying the French examples as "infinitival" is that -er endings in French are orally indistinguishable from participial forms. Therefore, it is not impossible to analyze these examples as participles. A better example for deciding on the finite or non-finite status of verbs is provided by irregular verbs like venir, or voir, the past participles of which are phonologically different from infinitival forms. One example found in Pierce (1989) and cited by Wexler (1994, 311) is shown below:

(28) voir l'auto papa
see the car of daddy

Wexler (op.cit.) also cites eight "infinitival" examples of -ir verbs whose past participle forms are different from non-finite forms. However, none of those examples co-occur with the negative particle pas, and hence are irrelevant to the issue of the presence of a T/I-node. As I have discussed in section 1 of this chapter, the simple occurrence of a form such as voir does not provide evidence
for the presence (or absence) of a T/I-node. The difference in position of the verb with respect to *pas* can provide evidence for T/I since the verb moves around *pas* to T/I, a possible landing site. Wexler rejects the option that the relevant forms be regarded as participles, relying on Lightbown’s (op.cit.) interpretation that they refer to ongoing activity rather than a completed action. However, as Tsimpli (1996, 60) points out, completion vs non-completion of an event should be interpreted as an aspectual rather than a tense distinction.

Early child French and German exhibit verbal forms with finite endings as well as non-finite forms, although children use more non-inflected forms in contexts where adults use finite verbs:

(29) a. das auch passt
   this also fits
   b. oma kommt
   granny comes

(30) a. lit maman
   reads mummy
   b. fait du bruit la voiture
   make the noise the car
   c. papa travaille
   daddy works

(31) est tombé moi
    is fallen me

It would appear that child grammars already have tense forms as well as compound past forms. However, the “compound forms” appear rarely and are frequently used without the auxiliary verb (Gregoire 1947, Clark 1985). Many researchers point out that children treat the past participle as an adjective: it describes a state of the object (Antinucci and Miller 1976, 172, Meisel 1985). Therefore, there is not sufficient evidence to argue for the presence of the alleged
First Language Acquisition

“compound forms”. The question of how to analyze est, which looks functional, remains as a future task.

In adult French the marking of aspect and tense is morphologically merged in the same inflectional affixes. Hence, it is not clear whether the sporadic appearance of inflectional affixation like (30) expresses tense or aspect. However, judging from the examples in (30), it can safely be said that these forms refer to ongoing activities, and hence that they encode an aspectual meaning. If both forms, i.e. apparent finite and non-finite forms can be used to refer to ongoing activities, the presence of these two different forms cannot be supporting evidence that children use these forms in terms of a [+/- finite] distinction.

As far as the German data are concerned, as in French, verbs with the -t ending in (29), which are argued to predominate over infinitival ones (cf. Clahsen 1991a, 1991b), may be analyzed as participial forms in some cases rather than as having a third person singular ending (Jordens 1990). Tracy (1991) has also suggested that the -t ending is used to denote the completion of an event or action (see Tsimpli 1996, 63). If this is correct, they are assumed to denote an aspectual meaning.

All in all, the sporadic use of different inflectional affixes in early child grammars encodes aspectual rather than tense distinctions. Hence, we can conclude that aspectual distinctions are operative at the prefunctional stage, while tense distinctions are missing. Aspect morphemes attached to the verb stem are not the result of syntactic affixation, but of a morphological rule such as lexical affixation and aspect binds the E-role at the prefunctional stage.

Behind this there lies a basic difference between aspect and tense: tense is a functional category, while aspect perhaps belongs to a substantive category, although further detailed discussion would be necessary to confirm this conclusion. However, it is necessary to make it clear that tense and aspect are systematically different and that the latter is not functional in the way the former is.
5 Missing arguments in early child grammars

One of the striking characteristics of early child grammars is that certain obligatory constituents of the adult clause are missing from the child’s counterpart. In particular, the phenomenon of missing subjects characterises child speech across languages, regardless of whether the corresponding adult speech allows null subjects or not:

(32)  

a. I want candy (adult)  
b. Want candy (child)

The child utterance (32b) lacks a subject argument in the subject position of the verb want. A number of linguists have discussed missing arguments in child speech. There are four theoretical possibilities regarding the exact nature of the missing arguments:

(33)  

a. Missing arguments are traces.  
b. Missing arguments are pro.  
c. Missing arguments are PRO.  
d. Missing arguments are null NP.

The first possibility, that the missing arguments are traces, is rejected because no movement is involved in the derivation of the sentences. Hyams (1986, 1987a, 1987b, 1988, 1989), although she has changed her analysis in her more recent work to which I will turn below, asserts that missing arguments should be analysed as a pro, a non-overt pronominal which is also observed in adult Italian. Pro is licensed by AgrS under Spec-Head agreement. That is, pro is licensed by a functional category. Hence, if pro occurs in early child English, it follows that child grammar has an established I-system, a functional category.

There are many problems with this account, however. Languages such as
First Language Acquisition

Chinese, Japanese and Korean allow null subjects, in spite of the fact that they lack Agr entirely. Huang (1984) proposes that pro is possible either in languages with rich agreement or no agreement at all. However, there are languages that lack overt Agr and still cannot be pro-drop languages (see Platzack, 1987).

Furthermore, Hyams fails to give any explanation of how the content of pro is recovered. Rizzi (1986) proposes that the content of pro is recovered through rich agreement specification. However Tsimpli (1992) proves that this is not tenable. In the null-subject examples spoken by Greek children there is a lack of agreement between the agreement features on the verb and null subjects. This would be a violation of the identification requirement mentioned above. Hence she concludes that null subjects cannot be pro and that an Agr element should be assumed to be attached to the verb instead of projecting its own X-bar structure.

Tsimpli (1992) claims that null subjects in early child speech can only be PRO. Because the clause structure of early child language consists simply of the maximal projection of the verb and its arguments, the Spec position of VP is an ungoverned position and PRO can occur in that position. However, as she admits, this conclusion raises a problem. If PRO is not controlled, i.e. it has no antecedent, it has an arbitrary interpretation in adult speech. In child speech, however, null subjects have a referential interpretation, although they do not have antecedents, as the content of PRO can easily be recovered from the context.

She tries to solve this problem by assuming that obligatory PRO also has a governing category, since it is subject to Binding Principle A. What determines the governing category is Agr, a functional category. Because child language lacks functional categories, PRO does not have a governing category. In this situation, a child tries to find an antecedent in a discourse context.

The fourth possibility is that missing arguments are null NPs which are phonologically null, as Radford (1990) discusses. According to him, the null NP analysis would be consistent with the assertion that all nominals in early child English have the status of simple lexical NPs, unlike the status of functional DPs of their adult counterparts. Then, null NPs as well as overt NPs would be free to
First Language Acquisition

occur in any argument position in any sentence, because there are no functional licensing conditions (e.g. I-conditions). The content of this null NP is pragmatically determined.

One might object that this analysis is rather unnatural because it allows the free use of empty nominals. It violates principles of UG which constrain the distribution of empty categories. However, there are a few precedents in adult grammars for the free use of null nominals: viz. Chinese and Japanese. As observed in chapter 1, Fukui (1995) argues that Japanese lacks DP and IP. It has no determiners and nominals are never inflected for case. Moreover, there are no agreement inflections, either. Japanese is also a pro-drop language. Hence, if the missing arguments in Japanese are null nominals, it follows that they are free of functional constraints on their licensing and identification in adult language. This is indeed the case in Japanese. In Japanese we can find precisely the same free use of null nominals as in early child English. This null NP analysis is accordingly not unnatural. Although this null NP analysis seems promising, Radford says that it might be rejected because it violates fundamental principles of UG. It might be suggested that UG only permits functional categories (DP or CP) to be null arguments, not lexical categories like NP, and always requires them to be subject to functional licensing/identification conditions.

As mentioned above, Hyams (1996) proposes a new analysis of null subjects in early child English: the null subject phenomenon is directly related to the root infinitive phenomenon. Assuming that null subjects in early child English do not occur with finite verbs, Hyams asserts (Hyams 1996, 93ff.) that the null subjects are the effect of the underspecification of I, which also gives rise to root infinitives, as discussed in section 1. In this new analysis the missing element is PRO, which bears null Case. While nominative case is a realization of Spec-

3 He suggests that Japanese has a defective I which contains no agreement features.
Head agreement between a lexical subject and a finite I, null Case is the realization of the same relation where I lacks tense and agreement features, i.e. a non-finite I. On her hypothesis, I in early child grammars may be underspecified, where, as explained in section 1, an underspecified I contains no tense or agreement features. Thus, this underspecified I checks null Case, and hence PRO can occur. We have already seen how problematic this underspecification analysis is in section 1.

All the proposals analyzing null subjects as constituents syntactically projected in the form of an empty category of some sort are potentially problematic. On the contrary, on my hypothesis that child grammars have no T/I-system, and, assuming that the subject requirement is due to the functional category T/I, (see chapter 4), the missing arguments phenomenon in child English is easily explained. There is no subject requirement either in early child grammars, or in early languages. An objection to this claim is that the EPP is a universal requirement, as discussed in chapter one (p.17). Subjects are required because of the condition on predication.

As I argued there, the term “subject” expresses at least three different notions: a grammatical one, a logical one and a semantic one. When I argue that there is no EPP for early child language, I am referring to the grammatical one, which is required syntactically. The claim that there is no EPP for early child language follows directly from Chomsky’s argument (1995: 232) that: “the subject requirement is reduced to the effect of the strong D-feature of I(T)”. Then, if early child languages have no T/I-system, the EPP does not follow, as the subject is an element which occupies the position that is structurally required by a functional projection TP/IP.

One difference between early English and early child English is that the apparently “missing” element in the early impersonal constructions is not an argument required by the predicate verb of a clause, while in child grammars it is the required argument of a predicate verb that may be missing. This difference can be understood if we take into consideration the fact that child utterances in
most cases refer to ongoing activities in the immediate situation, so the contents of missing elements are easily recovered from the context. Children’s utterances may be supplemented by gestures like pointing. That is, the reference of missing elements is pragmatically determined. Some contextual information is taken for granted by children and remains unexpressed. Children’s dependence on pragmatics is compatible with my proposal about the nature of maturation in chapter 1. Similar claims have been made by other researchers such as Miller (1979, 75) and Greenfield et al. (1985, 251).

Accordingly, the status of the missing elements in early child grammars is assumed to be a sort of implicit argument. This hypothesis is tenable, if we invoke the lexical saturation of theta roles proposed by Rizzi (1986, 508-509). According to him there are two ways in which the theta roles assigned by a predicate can be saturated; (i) syntactically, or (ii) lexically. If a certain theta role is syntactically saturated, it is projected into the syntactic structure as an explicit argument, and then it may take the form of an empty category which is subject to syntactic constraints. On the other hand, if a given theta role is lexically saturated, it remains implicit, without being projected into the syntax. There are complex idiosyncratic restrictions on which verbs have theta roles susceptible to only syntactic saturation. Some verbs can allow both types of saturation, and for others only syntactic saturation is possible. Thus children will overgeneralize both mechanisms, allowing theta roles to be freely saturated either lexically, or syntactically. Hence, arguments can be either explicit or implicit, that is, “missing”.

This approach can easily explain why missing arguments are not subject to syntactic constraints. Since they are never projected into the syntax, it follows that they cannot in principle be subject to syntactic constraints. This approach is compatible with the assertion that early child grammars are purely lexical in nature. Moreover, it is consistent with UG. Since UG specifies that explicit null arguments are universally functional categories, languages which are purely lexical in nature cannot in principle have explicit null arguments. The
First Language Acquisition

conclusion is that missing arguments are lexically saturated unprojected (i.e. syntactically unrepresented) implicit arguments. One corollary of this is that early child grammars have no syntactically projected empty nominals (e.g. no null (pro)nominals, and no variables). This analysis suggests that in the earliest multiword speech produced by children (typically between 20-23 months of age), only syntactically projected arguments surface overtly. Although there remains one problem with this analysis: implicit arguments are conventionally assumed to have arbitrary reference, while children’s missing arguments almost always have definite reference, this analysis is very plausible in comparison with the others.

I conclude that the “missing arguments” phenomenon in early child grammars is the effect of the non-presence of a functional category which is responsible for the subject-requirement plus the pragmatic-dependent nature of child language.

6. The nature of early child language

In the preceding sections we have observed that early child English around 20 months of age (+/-20%) lacks functional categories and their associated features. The important properties of early child English are summarized below:

(34) a. Early child grammars show the evidence of the acquisition of four lexical categories (N, V, A, P) and their projections (NP, VP, AP, PP).
    b. Early child grammars have no D-system, and hence, there is no evidence of the acquisition of the morphosyntax of referential determiners such as a/an, the and the possessive determiners ’s.
    c. Early child grammars have no T/I-system, and hence, children do not acquire the morphosyntactic properties associated with T/I:
       i.  do-support
       ii. modal auxiliaries
       iii. finite verb forms
First Language Acquisition

iv. copula be
v. progressive be
vi. have
vii. syntactic case-marking

The overall structure of early child grammars of English is lexical in nature. All structures produced by young children aged 20-24 months are thematic in that every constituent except VPs theta-marks or is theta-marked by a sister constituent.
Chapter Three

The Historical Emergence of DP

1 INTRODUCTION

In this chapter I turn to the earlier period and claim that in parallel with child language, there is no functional projection, DP in earlier stages of some languages such as OE. At a certain stage a syntactic D-system was introduced in English. That is, a functional category emerged within the nominal projection and the whole structure NP changed into DP. Two questions will follow from this main claim:

Question 1: how can a language lack determiners?

We propose the answer that morphological case can perform the same task as D.

Question 2: what triggers the introduction of determiners?

The proposed partial answer to this question is that it is triggered by the demise of morphological case. That is, the task of turning an NP into an argument is done by either morphological case or a syntactic D system. Given these two possibilities, the languages of the world might be described in terms of the following combinations:
Although the co-occurrence of a DP and morphological case might appear to go against the main claim, this is not problematic, as we will see later. Some languages have only morphological case, but no D system. Others have only a D system. The asterisk above means that there is no language in which neither morphological case nor a syntactic D system is operative, whereas morphological case can co-occur with a syntactic D system. I return in section 4.3 to the apparent counterexample of Modern Chinese, which has neither morphological case nor determiners.

Behind this distribution is a more general tendency towards the grammaticalization of semantic features into syntactic functional categories. In parallel with the case of TP/IP, where some of the deictic temporal features on verbs are upgraded to constitute a functional category T, some of the nominal features on nouns are upgraded to give a syntactic projection DP. The nominal features in question are referentiality, or referential features, such as definiteness, indefiniteness, individuality, etc. In earlier stages of OE, morphological case marking helped to identify the referential status of nouns: i.e. the task of identifying the referential status was taken care of by (case) morphology. The demise of morphological case marking necessitated some compensatory device. Hence, a syntactic D system emerged in the English language.

Apparently some languages including Chinese constitute a counterexample to this assertion. However, as I argue later, they are not problematic for my claim, once I elaborate a more comprehensive framework for the reallocation of duties between morphology, syntax, and pragmatics to characterize the precise nature of category maturation.
The emergence of DP

The chapter is organized as follows: before discussing the questions in detail, I look at the structure of DP in Present day languages especially English in section 2. In the next section we turn to the OE period and support the main claim that there is no D system in OE by examining historical data. In section 4, invoking Higginbotham's (1985) theory of theta-binding, we see that either a functional head D or morphological case binds the R(eferential) role of a noun. Since there was no DP in OE, morphological case bound the R-role. Besides OE, I will examine some examples cross-linguistically, and show that this is in fact the case with many documented languages. In section 5, we will see that when morphological case disappeared, a syntactic D system was introduced to bind the R-role. Since gerunds are one instantiation of a D system, further evidence for this assertion is provided by the absence of gerund constructions in OE. This will be discussed in section 6.

2 The structure of DP

In Present-day adult English nominals are assumed to be projections of a head D, according to the now standard DP analysis (Abney 1987, Longobardi 1994). The structure of nominals is the following:

(1) DP
       \---
       |  \
D    NP
      \   /
    the/a/my.. book

A head D takes an NP complement. Neither the D position nor the nominal head position is necessarily occupied by lexical items, although both cannot be empty. The bare noun milk, for example, is a DP headed by a null determiner:
The emergence of DP

(2) \[
\begin{array}{c}
\text{DP} \\
\hline
\text{D} & \text{NP} \\
\emptyset & \text{milk}
\end{array}
\]

Nouns like milk, water, or wine are mass nouns and have an indefinite existential interpretation. Plural count nouns which can occur without overt determiners are also understood as belonging to this category. This reading comes from the principle stating that an empty determiner is subject to the universal constraint that it has an existential interpretation by default:\(^1\):

(3) \[ [\text{D} \ e] = \text{default existential interpretation} \]

(Longobardi 1994, 641)

---

\(^1\) Another piece of syntactic evidence for the presence of the empty determiner in mass noun phrases is that the distribution of such bare nouns in Italian or in other Romance languages is subject to the lexical government constraint, similar to that constraining empty categories. They occur only in lexically governed positions (like internal argument positions) and are excluded from preverbal subject positions (Longobardi 1994, 616). This licensing condition for an empty D is relaxed in English because of the following examples:

(1) a. Water comes down from the hills.
    b. Beavers build dams. (generic interpretation)

Longobardi explains this as the consequence of a parametric difference between English and Italian. In Italian two principles (default interpretation and lexical government) are applied as early as possible, while in English they may be delayed until LF. However, modern French does not seem to accept bare nouns at all.
The emergence of DP

Since it is a default, this interpretation may be overruled by the presence of other elements like quantifiers or adjectives.

Pronouns are assumed to be determiners used without a complement:

(4) \[ \begin{array}{c}
\text{DP} \\
\text{D} & \text{NP} \\
\text{we/you} & \phi
\end{array} \]

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

According to Abney (op.cit.), genitive -'s in English is supposed to be a head determiner which takes a D projection as its specifier, and an N projection as its complement:

(5) \[ \begin{array}{c}
\text{DP} \\
\text{DP} & \text{D'} \\
\text{John} & \text{D} \quad \text{N} \\
\text{'s} & \text{car}
\end{array} \]

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

As Longobardi points out, common nouns are usually used to refer to a kind, and therefore need a binder like D, which depends on a range provided by a noun. Pronouns need not refer to a kind, and therefore, need no determiners.

Basically I assume the above DP analysis for PE nominal phrases, although some important examples are left unexplained, and I assume that there may be an empty D in nominals. However, there is a contrast between DP and TP. The
The emergence of DP

task of D in DP is affected by the properties of N, specifically, the intrinsic meanings of a head nominal, whereas the task of T in TP is not affected by the properties of V. In the case of TP, tense (past, present and indirectly future) is not affected by the intrinsic meanings inherent in verbs, although aspect is closely related to the meanings of verbs. Because of semantic restrictions, some verbs cannot take the progressive form: ‘*I am knowing him.’ But both, or all three tenses are available for all verbs. DP is different from TP/IP in this respect.

In the following sections I will argue that such a syntactic D system was lacking in earlier stages of English and other languages. For the discussion below, a better knowledge of the nature of functional categories is necessary. Abney (1987, 64f.) proposes that there are a number of properties that characterize functional elements:

(6) 1. Functional elements constitute closed lexical classes.

2. Functional elements are generally phonologically and morphologically dependent. They are stressless, often clitics or affixes, and sometimes even phonologically null.

3. Functional elements permit only one complement, which is in general not an argument. (They select IP, VP, NP, but not CP, PP, and DP.)

4. Functional elements are usually inseparable from their complements.

5. Functional elements lack "descriptive content". Their semantic contribution is second-order, regulating or contributing to the interpretation of their complement. They mark grammatical or relational features, rather than picking out a class of objects.

None of these properties are criterial in deciding whether an element is lexical (thematic) or functional, although Abney says that the final characteristic is in some sense the crucial one. But, each of these properties constitutes a tendency. Not all of these properties need to be shared by all functional categories.

As discussed in the beginning of chapter two, although the theoretical status of
The emergence of DP functional categories is still problematic, a wide range of phenomena such as cross-linguistic variation, the locus of possible parameter setting in first language acquisition, etc. must be explained, and all of these may stem from the notion of functional categories. Hence, the role of functional categories in the diachronic domain should be seriously addressed.

3 Absence of a D-system in early English

In this section we turn to the Old English period and support the main claim that there is no D system in OE by examining historical data. Although OE had two demonstratives, se(seo/pæt), and pes(pis/peos), there were no articles (definite or indefinite) with the properties they have in PE. It is widely accepted not only in traditional works such as Quirk and Wrenn (1955, 69-72), Mitchell and Robinson (1992, 106), and Pyles and Algeo (1993, 114,128) but also in the more recent literature like Abraham (1997, 29-61), Philippi (1997, 62-93) and Giusti (1995,77-93), that these demonstratives are not determiners, although the treatment of the issue varies from researcher to researcher. Traugott (1972, 85-87) already states that one of the most striking things about the NP in OE is the almost complete absence of anything directly corresponding to a and the. More recently, Philippi (ibid.) states that the emergence of articles is a relatively recent development; languages like Gothic, Old High German, Old Saxon and Old English do not have a definite or an indefinite article. This position is based on the assumption that articles and demonstratives do not constitute a homogeneous category (see Giusti (1997, 95-123)). I argue that demonstratives have the status of N.

First, look at the following OE paradigm, which shows nouns inflected for case, gender and number:
The emergence of DP

(7) OLD ENGLISH NOUN DECLENSION

<table>
<thead>
<tr>
<th>Strong</th>
<th>Masculine</th>
<th>Neuter</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative</td>
<td>ston</td>
<td>deor</td>
<td>lufu</td>
</tr>
<tr>
<td>Accusative</td>
<td>stan</td>
<td>deor</td>
<td>lufe</td>
</tr>
<tr>
<td>Genitive</td>
<td>stanes</td>
<td>deores</td>
<td>lufe</td>
</tr>
<tr>
<td>Dative</td>
<td>stane</td>
<td>deore</td>
<td>lufe</td>
</tr>
</tbody>
</table>

| Plural   |           |        |          |
| Nominative | stanas   | deor   | lufa     |
| Accusative | stanas   | deor   | lufa     |
| Genitive  | stana     | deora  | lufa     |
| Dative    | stanum    | deorum | lufum    |

<table>
<thead>
<tr>
<th>Weak</th>
<th>Masculine</th>
<th>Neuter</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative</td>
<td>nama</td>
<td>eage</td>
<td>sunne</td>
</tr>
<tr>
<td>Accusative</td>
<td>naman</td>
<td>eage</td>
<td>sunnan</td>
</tr>
<tr>
<td>Genitive</td>
<td>naman</td>
<td>eagan</td>
<td>sunnan</td>
</tr>
<tr>
<td>Dative</td>
<td>naman</td>
<td>eagan</td>
<td>sunnan</td>
</tr>
</tbody>
</table>

| **Plural** |               |        |          |
| Nominative | naman        | eagan  | sunnan   |
| Accusative | naman        | eagan  | sunnan   |
| Genitive  | namena      | eagen  | sunnena  |
| Dative    | namum       | eagum  | sunnum   |

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

(8) **PARADIGM of *se* DEMONSTRATIVE**

<table>
<thead>
<tr>
<th></th>
<th>Masculine</th>
<th>Neuter</th>
<th>Feminine</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom.</td>
<td>Se</td>
<td>þæt</td>
<td>seo</td>
<td>þa</td>
</tr>
<tr>
<td>Acc.</td>
<td>þone</td>
<td>þæt</td>
<td>þa</td>
<td>þa</td>
</tr>
<tr>
<td>Gen.</td>
<td>þæs</td>
<td>þæs</td>
<td>þære</td>
<td>þara</td>
</tr>
<tr>
<td>Dat.</td>
<td>þæm</td>
<td>þæm</td>
<td>þære</td>
<td>þæm</td>
</tr>
<tr>
<td>Ins.</td>
<td>þy, þe</td>
<td>þy</td>
<td>þære</td>
<td>þæm</td>
</tr>
</tbody>
</table>

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

(9) *wælstowe*  *gewald*

battlefield (fem. Gen.) command

‘command of the battlefield’

(10) *fram beaduwe*

from battle (mas. Dat.)

‘from the battle’

(11) *Oddan*  *bearn*

(Gen. Sg.) son (neut. Nom. Pl.)

‘the sons of Odda’

(12) *Eall eorðe ys min*  *(Ælfric Exodus xix 5 (OED))*

all earth is mine

‘all the earth is mine’

(13) *be suðan*  *Temese*  *(CP 3, 18)*

by south Thames

‘the south of the Thames’
The emergence of DP

(14) holtes on ende
   wood (neut. Gen.sg.) on end (mas.)
   ‘at the edge of a wood’

(15) on beorg
   onto mountain (mas. Acc.)
   ‘onto a mountain’

(cf. Mitchell and Robinson 1992, 107, Pyles and Algeo 1993, 128. The examples from (9) to (11) and (14) (15) are from Mitchell and Robinson.)

In (12) or (13) the definite article the is necessary in PE because they refer to something of which there is only one in the world².

Later, the form pe replaced the masculine nominative se: at first in the Northern dialect around 950. The nominative masculine and feminine (seo) had become pe almost everywhere by 1300. This new form pe came to be used as an invariable definite article the (after 1400). The neuter form pæt and the plural form pa(tho) were left for the demonstrative function. From the other OE demonstrative pes(pis/peos), the singular nominative-accusative neuter this came to be used for all singular functions, and a new plural form, thise or these appeared, the ending -e as in the plural of adjectives.

As Abney (1987) points out, one of the defining features of functional elements is that they lack descriptive content. Their semantic contribution is subsidiary. However, the demonstratives mentioned above made an important semantic contribution of their own. These demonstratives were used to denote a person or a thing pointed out or present deictically, and attention was directed on to them. Furthermore, although the use of an or sum is rare, when they are used, they mean something more than just ‘one’(cf. Mitchell and Robinson, op.cit.):

---

² In some cases, in OE river names take a demonstrative like ‘seo Wisle = the Vistula’.
The emergence of DP

(16) an mægð 'a certain tribe'
(17) sum mon 'a certain man'

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

(18) þæt wæs an cyning ‘that was a peerless King’

where the meaning ‘peerless’ came from the numeral *an*.

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

where the meaning ‘particular’ is ascribed to *sum*.

Secondly, Abney says that articles are strictly inseparable from their complement, and cannot occur without them as exemplified in (20).

(20) a. Ho visto il/un *(ragazzo).
   b. I saw the/a *(boy).
   c. *The is a great king.

However, demonstratives in OE were not dependent on the noun or nominal elements, but they were independent lexical elements. The evidence to show this comes from the fact that they were used as demonstrative pronouns without the company of nominals as is shown in (21), or as an antecedent to a relative, meaning the (man), *he that* etc. as in (22):

(21) a. *þæt eart ðu (K. Ælfred Boeth. Xxxxiii. §5)
   that are you
   ‘you are that’
The emergence of DP

b. 7 se swiðe gewundad wæs
    and he very badly wounded was

(A.Chronicle Parker MS.48, 10 (755))

‘and he was very badly wounded’

c. Se wæs feorða eac fiftegum from Augusto
    He was forth also fifty from Augustus

(Bede 54, 22-4)

‘He was the fifty-fourth from Augustus.

(22) þe ðêt bǐð mid þen halia gast itend
    that he is with the holy ghost enclosed

‘he/that man that is with the holy ghost(spirit) enclosed’

The demonstrative se/seo/pæt was used as a relative pronoun, which inflected for gender, number and case:

(23) Æþelswiþ cuen, sio wæs Ælfredes sweoster cyninges
    Æthelswith queen who was Alfred’s sister King’s
    forþ ferde
    away passed

(A. Chronicle Parker MS 82,1 (888))

‘Queen A., who was King Alfred’s sister, passed away

All the above examples suggest that demonstratives in OE have the status of N, not D, unlike their counterparts in PE.

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

(24) Soðlice an of þam þe ðær embe-uton stodon his swurd abraed

‘And/truly one of them that stood by drew his sword’
The emergence of DP

(25) 7 an þe wæs þære æ-ys lærow axode hyne  (Matt 22, 35)

‘And one who was a lawyer, asked him’

(26) oð þæt an ongan fyrene fremman feond on helle  (Beowulf 100)

‘until one began to compass deeds of malice’

There is an alternative view of the situation, however. That is, se/seo/pœt and an could have functioned as both article and demonstrative/numeral, while PE has formerly separate articles. Hence, there is not much difference between OE and PE. Indeed, as John Anderson points out (p.c.), examples in which those demonstratives are used like articles are found in the OE texts. Look at the following example:

(27) Wið þa blegene, genim nigonægra and seoð hig fæste,

‘With the ulcer, take nine eggs and boil them hard
and nim þa geolcan and do þæt hwie aweg and
and take the yolks and make the white away and
‘With the ulcer, take nine eggs and boil them hard, and take the yolks and take the white away’  

(Medicinal recipes from Sweet 1953)

In this example, þa is used in a way similar to the article of PE.

However, as Phillippi (1997, 62-93) argues, “occasionally we find in Germanic languages demonstratives used in a way similar to the article of the modern Germanic languages. In much the same way, there are indefinite pronouns and numerals used in an article-like manner. However, it will be shown that the use of these pronouns is so restricted that we cannot label them as articles, the latter acting as obligatory definiteness markers in the modern Germanic languages.”

At worst, my claims must be relativized to yet earlier stages of the language. Still, the main claim that the obligatory determiner system emerged in the history of the languages is sustainable.

We should note that we are dealing with a change from one stage to the next,
The emergence of DP

so that, at the linking stage, the residue from the previous grammars is not excluded from the data. Likewise, the earliest examples produced by new grammars may coexist with the examples from the older grammars. However, the presence of such mixed data does not invalidate the claim that there is a transition from stage A to B. Traugott, (1972, 86) says that we do indeed find a few instances of OE an which are difficult to interpret as the numeral, nevertheless, it was many centuries before it came to be used as in NE (i.e. PE).

At this point, we should also draw attention to the dates of the texts cited. The medicinal recipe example (27) is from the 11th century. As Quirk and Wrenn (1955, 70-71) suggest, there is a difference in the use of se across the time: it occurred mainly in late OE prose.

In the example below, an was placed after the nominal to mean alone, only, although an could also be placed prenominally. In this case, there was often no agreement between an and the antecedent noun. That is, it might be being used as an adverb:

(28) he ana wæs on lande  
(Mark 6, 47)  
‘he alone was on the land’

(29) ôone naman anne we lufodon  
(CP 5, 7)  
‘we loved the name only’

Likewise, I argue that OE personal pronouns occupy the N position. Although the genitive form of personal pronouns could occur in prenominal position, as in his fœder ‘his father’, it often appeared in postnominal position, as in fœder min ‘my father’. This is probably best treated as an example of apposition “N + N”. Furthermore, like other substantives, the genitive form of personal pronouns served as an argument of a predicate verb:
The emergence of DP

(30) Nu þu his [i.e. þæs leohes] hrinan meaht
    Now you it (the light) (neuter, genitive) touch can
    (Cædmon’s Genesis 616(gr.))

‘Now you can touch it.’

Returning to the Present-day languages, there is a theoretical problem with the standard treatment in the current framework: all prenominal elements like articles, demonstratives and quantifiers in PE are assumed to belong to the category determiner and hence occupy the head D position, the top position of the functional projection. Empirical evidence in favour of this assumption comes from the fact that, in English at least, articles, demonstratives and possessives are in complementary distribution:

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

Although some multiple determiner sequences might be ruled out on semantic grounds such as compatibility between definiteness and indefiniteness, this is not possible with some of the other examples, whose paraphrases are perfectly grammatical:

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

Thus, the ill-formedness of (31) must be based on syntactic reasons. Moreover, this constraint on multiple determiners found in English is not universal. As is well known, many Romance languages have grammatical counterparts of (31):

(33) a. un mio libro ‘a my book’ (Italian)
    la mia amica ‘the my friend’ (Italian)
The emergence of DP

b. baiatul acesta frumos (Rumanian)
   boy-the this nice ‘this nice boy’

(Giusti 1997,100)

Even in English some quantifiers may cooccur with articles and demonstratives, though their behaviours differ idiosyncratically:

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

The possible cooccurrence of demonstratives, possessives and definite articles suggests that they cannot occupy the same position.

Turning to OE and ME, the genitive pronoun co-occurred with se/seo/pæt (example (c) is from early Modern English):

(35) a. ôas mine word ‘these words of mine’
    (WESGosp Matt. 7.24)
   b. this my pour letter (Paston Letters II 144/2 15th century)
   c. this my sudden choice (Shakespeare Titus 1.1.318)

As the above examples show, this type of nominal phrase survived through the ME period into the beginning of the 18th century. The ‘this word of mine’ type phrase was attested from the 15th century. This fact also suggests that OE se/seo/pæt were not articles.

Concerning the genitive, as we shall see below (example (72)), the genitive noun in OE served as a complement or rather an argument of a verb and had its

3 In Rumanian a phrase initial demonstrative is in complementary distribution with an article. In (33b) the initial noun is inflected with the enclitic definite article.
The emergence of DP

own meaning: cause of the action. It was totally different from the modern 's form.

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

4 John Anderson (p.c.) points out that it is unclear what D-status means and that there is not much evidence for suggesting that demonstratives and articles belong to separate categories. As I discussed earlier (p.92), although there are number of properties which characterize functional categories, each of these properties constitutes only a tendency. It is difficult to give a perfect definition of a D. However, we can say that what is obligatorily required is a syntactic system to identify the referential status of nouns.

Concerning the status of demonstratives in current languages, there is no agreement about this among the researchers. For example, Giusti (1997, 110) only suggests that the demonstrative is base-generated in a specifier which is lower than D. In fact, there are a few possibilities, which may be correct for different languages: Spec-DP, D, or adjuncts to DP/NP. It is beyond the scope of this thesis to decide which is the proper option.
The emergence of DP

4. THE FUNCTION OF CASE

4.1 Higginbotham's theory

Assuming that a language can lack determiners as a functional category, and that case can perform the same task as D, as mentioned above, it is necessary to examine what task a functional D-system covers and how it is related to case. The most relevant theory here is that of theta-binding proposed by Higginbotham (1985). A functional head theta-binds a particular position in the argument structure of its lexical complement. This pertains to both DP and VP/IP. It is rather widely accepted that verbs have open positions in them. This is the position E (event) of the thematic grid of the verb. The position E corresponds to the "hidden" argument place for events or situations. For example, the thematic grid of the verb see is shown by < 1, 2, E>. The position 1 and 2 will be the thematic positions filled by John or Mary, that is, usual thematic roles like Agent or Theme. For a proposition to be interpretable at LF, the position E must be bound somehow, as a tense specification is necessary for a proposition to be true or false. In the case of VPs, the binder of this position is Infl or Tense. The structure of John sees Mary is the following:
I discharges the event position $E$ by theta-binding.

By analogy, a simple noun like *dog* has an open place in it and so denotes each of the various dogs. This open place is a referential argument in the thematic grid (or argument structure) of the word *dog*. The referential argument is very different from thematic arguments, which correspond to theta roles such as Agent, Theme, Goal, Experiencer, etc. The referential argument corresponds to the "reference" (or referentiality) of that category (cf. Zwarts 1992). We call it R(eferential) role. This position can be discharged either by theta-marking or by theta-binding, which is necessary for a NP to be an argument. That is, a nominal must be specified, for example, as either definite or indefinite for interpretation at LF, although this does not exhaust the referential properties of nouns. This [+/- def] feature is responsible for the referential property of a nominal phrase. For an element to be an argument, it must be specified for [+/- def]. Then, the grammaticalisation of definiteness (indefiniteness) is the task of a functional head D. Grammaticalization of definiteness is taken care of either by morphological features of nouns in some languages or by functional categories (D) in languages like PE. I will return to this issue later. This difference between NP and DP is exemplified in the following sentences:
The emergence of DP

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

Bare nouns can occur in non-argument positions like predicatives, but not in argument positions. As is claimed in Stowell (1991) and Longobardi (1994), NPs are inherently predicative and not referential. Only DP can occur in argument positions.

If case morphology theta-marks a position (decides the referential status of a noun), that is, assigns (or discharges) a theta role, that position is discharged. If this option is not available, that is, there is no overt case morphology in a language, a syntactic operation becomes necessary, that is, the position must be bound by a determiner D. Consider (38) in this light:

(38)  \[
[\text{DP} \text{[D\text{-}D \text{NP}]}} \\
\text{DP <1\*>} \\
\quad \text{D' <1\*>} \\
\text{D NP <1>} \\
\text{the} \\
\quad \text{N' <1>} \\
\text{N <1>} \\
\text{dog}
\]

Theta-grids shown in angle brackets are projected from lexical items and are carried over by every node in the tree. The R(eferential) argument position 1 is theta-bound by D, that is discharged by theta-binding. The asterisk indicates
The emergence of DP

that the position closes or is discharged. When every theta role in an associated theta grid is discharged, we can say that a constituent is saturated. The complete phrase DP is saturated, i.e. all positions are discharged and the phrase is thematically complete (cf. Higginbotham 1985, 561).

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

(39) \[x \quad \text{A B}\]

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

(40) a.

\[\begin{array}{c}
\text{Spec} \\
\text{X'} \\
\text{X}
\end{array}\]

b.

\[\begin{array}{c}
\text{X'} \\
\text{Adjunct} \\
\text{X'} \quad \text{X'}
\end{array}\]

Accordingly, the task of D is to theta-bind a position in nouns or noun phrases, i.e. to decide the referential status of nouns and change them into arguments. D
The emergence of DP

semantically binds a variable. D is a binder and there cannot be two binders. Chomsky (1982) notes that the impossibility of iterating determiners (*every the dog) may be related to a prohibition against vacuous quantification: in the present terms, one determiner would have to be vacuous, since each is a binder. This explains the constraint on double determiners (Higginbotham 1985, 560).

This idea of theta-binding nicely explains the relationship between functional heads and their lexical complements. In present-day languages functional heads select lexical projections: \([\text{IP} \{ \text{I} \ \text{VP} \}], \ [\text{DP} \{ \text{D} \ \text{NP} \}].\) But, what relation do they have to their complements? It is not the case that functional heads assign thematic roles like Agent, or Theme, to their complements. In theta-binding theory, functional heads theta-bind an open position in the argument structure of their lexical complements. There is no need to say that this type of binding must be distinguished from syntactic binding such as anaphor-binding, or trace-binding. Arguments bound by theta-binding are something like referential notions or individuals. In other words, D gives an interpretation of definiteness or indefiniteness to its complement NP, but does it syntactically. This also highlights the difference between a DP and a clause. DP is specified for 

### 4.2 Binding of referential arguments in the history of English

In the previous section we observed how functional heads theta-bind referential argument positions. Turning to the earlier period, we concluded on the basis of a considerable amount of evidence that the development of the determiner system was less advanced in a language like OE. In this section, we will see how referential argument positions could be bound by morphological case in "pre-functional languages", i.e. languages before the emergence of functional categories in the diachronic domain as opposed to its language acquisition usage, and will examine nominal phrases in pre-functional languages in detail. What follows directly from theta-binding is that when morphological case distinctions
The emergence of DP

were present in a language, the position was discharged by theta-marking. There was no need for syntactic theta-binding. Therefore, no D-system was necessary. As a result of the demise of morphological case distinctions and the change in the case system from being morpho-semantically-based to being structurally based, as we discuss in the next section, theta-binding has become necessary. One thing I should make clear is that theta-binding is effected only by an element attached directly to a nominal projection. Therefore, the following is not possible:

(41) 

\[
\begin{array}{c}
\ast \ N \\
\downarrow \\
X \\
\downarrow \\
X \\
\downarrow \\
\text{case}
\end{array}
\]

The foregoing discussion correctly predicts possible structures and impossible structures not only for English but universally. The following table summarises this prediction.

(42)

<table>
<thead>
<tr>
<th>Possible Structures</th>
<th>Impossible structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Determiner + NP</td>
<td>g. [Demonstrative + Case affix] + NP</td>
</tr>
<tr>
<td>c. [Determiner + Case Affix] + NP</td>
<td>h. Det. + [Noun + Case Affix]</td>
</tr>
<tr>
<td>d. Det. + [Adjective + Case Affix] + NP</td>
<td></td>
</tr>
<tr>
<td>e. Det. + [Dem. + Case Affix] + NP</td>
<td></td>
</tr>
</tbody>
</table>

This prediction matches well with the historical facts. I look at all the cases in this table one by one and show whether these configurations are exploited by real languages.
The emergence of DP

First, the following is possible:

(43) \[
\begin{array}{c}
\text{NP} <1^*> \\
\text{N} <1^*> \\
\text{N} <1> \quad \text{Affix}
\end{array}
\]

This is an instantiation of configuration (42a). "Affix" is assumed here to denote case inflections. This position is discharged by theta-marking. This process is exploited by languages such as OE in which morphological case distinctions on nouns are present and there is no D-system. Look at the structure of one form of the OE word *stan* ‘stone’:

(44) OE \[stanum \quad \text{NP} <1^*> \]

\[
\begin{array}{c}
\text{N} <1^*> \\
\text{N}<1> \quad \text{case affix} \\
\text{stan} \quad \text{um (dative, plural)}
\end{array}
\]

The structure (42b) is described by the following tree:

(45) \[
\begin{array}{c}
\text{DP} <1^*> \\
\text{D} \quad \text{NP}<1> \\
\Rightarrow \quad \text{N} <1> \\
\text{binding}
\end{array}
\]
The emergence of DP

In (45) D binds the position in NP, because it is attached directly to NP. This process is exploited by languages where there are no case realizations on nouns and there is a D-system, like PE:

(46) \[ \text{DP} \rightarrow \begin{array}{c} \text{D' } \rightarrow \text{D} \rightarrow \text{NP} \\ \text{the} \rightarrow \text{N'} \rightarrow \text{N} \rightarrow \text{stone} \end{array} \]

A further possibility is provided by (47):

(47) \[ \text{DP} \rightarrow \begin{array}{c} \text{D+Affix} \rightarrow \text{NP} \end{array} \]

This corresponds to (42c) above. Here, affix denotes the case endings attached to D, and D binds the NP position. This configuration is exploited by languages that have inflected forms for articles, and the overt case distinction on nouns has deteriorated, so that case distinctions are carried mainly by articles. Modern German might be an example: *Das Kind ist für sein Alter groß* 'The child is big for his age'. Modern German is said to preserve morphological case distinctions on nouns. However, the fact is that it preserves case distinctions only in most genitive singular masculine nouns *des Vaters*, in all dative plural nouns *den Vätern* and in a few nouns like *Junge, des Jungen, die Jungen*. Thus, even in
The emergence of DP

German, overt case distinctions are not fully up to the task of theta-binding.

In contrast to (47), the following is impossible:

(48) * NP <1>
    ┌─────┐
    │     │
    │ AP  │ NP <1>
    └─────┘

adjective + case N <1>

binding

(48) reflects the situation where morphological case distinctions on nouns have been lost, and case affixes are attached to adjective, not to NP. See the table (42f). It follows that the case on adjectives cannot bind the N position. That is, case on adjectives cannot identify the referential status of a noun:

(49) * gute Mann 'good man' (Modern German)

*NP<1>
    ┌─────┐
    │     │
    │ AP  │ NP<1>
    └─────┘

adjective case N<1>

gute e(Nom.) Mann<1>

*Gute Mann is not possible in Modern German. Accordingly, D became necessary to bind this position. Hence, D was introduced and the whole structure is:
The emergence of DP

(50)  DP <1*>
     /   \
    D    NP<1>
     /   \
    AP   NP<1>
     /     \
   Adj. + case N <1>

This explains the “determiner + adjective with case + NP” sequence (42d). The sequence is instantiated by the German phrase using the weak declension of adjectives: “determiner(definite/demonstratives) + weak adjective + NP” der gute Mann, dem guten Manne. The weak declension of adjectives is used when the adjective is preceded by definite articles or demonstratives.

In the sequence “adjective with case + noun with case”, case realizations on nouns, not on adjectives bind the position in N, since case on adjectives cannot bind the position as discussed above. Modern Greek is a good example of this pattern:

(51)  Simpathitica koritsia
       nice-neut-Nom girls-neut-Nom (Mouma 1991, 86)

Case morphemes on adjectives may be an instance of the percolation of case features. Case is first realized on head nominals and percolates onto other elements in the phrase.

An apparent counterexample to the assertion that case realizations on adjectives cannot bind the position in N is provided by the strong declension of adjectives in Modern German. The strong declension is used when the adjective occurs with a noun, without being preceded by a determiner. In this case, adjectives display an inflectional pattern equivalent to that of definite articles except for the genitive form of the masculine/neuter singular (-en ending) such as
The emergence of DP

guter Wein (masculine nominative), guten Weines (masculine genitive), gutem Weine (masculine dative), guten Wein (masculine accusative). It appears here that contrary to the prediction made above case realizations on adjectives can bind the position.

However, we should take notice of the fact that strong inflected adjectives are used mainly with mass nouns like Milch, Wasser, Wein. This means that the nominal head lacks the feature [individuated] and if the context doesn’t require [definiteness] for a nominal head, then, overt D is not necessary semantically. Remember that according to our assumption in section 1.1, mass nouns in PE without overt determiners have an empty D. This empty D has a reading of indefinite existential interpretation by default. Therefore, these mass nouns can occur alone without any modification. If the context requires the definite reading, the definite article is necessary:

(52) The water there is contaminated by germs.

In a parallel way, if we assume that there is an empty D in Modern German, a similar situation is observed. Compare (53) and (54):

(53) Milch ist billig in der Stadt.
    ‘Milk is cheap in the city.’
(54) Die kalte Milch ist auf dem Tisch.
    ‘The cold milk is on the table.’

The only occasions on which a countable noun is used with a strong inflected adjective, is when the noun is in the plural form and usually modified by quantifiers with indefinite meaning like wenig, viel, etc. As in PE, such examples have an indefinite existential reading.

Why, then, are there case realizations on adjectives in Modern German, while there are none in PE? Modern German is a little different from PE in this point.
The emergence of DP

I argue that, because of the presence of residual case morphology in Modern German, an empty D in Modern German is not yet established as such, compared with that of PE. My position is that the development of semantic features as functional syntactic categories is subject to differences in the degree to which these categories are established. Remember that category maturation means the grammaticalization of semantic features into a syntactic functional category. Functional categories may vary in the extent to which they are fully established. This is fully compatible with the view of the functional elements taken by Abney (1987, 64f.) mentioned in section 1.1. He says that there are a number of properties that characterize functional elements, such as the lack of a selectional frame of complements, or phonological nullity, or dependence on their complements, and so on. Although he proposes that the most important property is the lack of descriptive content, none of these properties are criterial in deciding whether an element is lexical (thematic) or functional. Not all of these properties need to be shared by all the functional categories: functional categories are subject to gradability, and language variation is partly due to this gradability.

Given this gradability, it is not implausible to assert that the Modern German D system is different from that of PE. Furthermore, remember that the sources of functional categories are semantic features which are sometimes morphologically realized. Although it has almost decayed, the residual case morphology of Modern German affects the syntactic D system. Because there is residual morphological case in German, an empty D is very weak compared with that of PE, and is not strong enough to license the nominal phrase. Accordingly, adjectives need to carry case forms for some morphological reason.

The following is also impossible:

\footnote{The notion 'strong/weak' I have used here is different from that used by Chomsky in that the former means gradability, while the latter is a binary concept.}
The emergence of DP

(55) *NP <1>

Demonstrative NP <1>

Dem. + case N <1>

binding ⇒

In this configuration (42g), case realizations on nouns have been lost, too, and case on demonstratives cannot bind the position. The introduction of the D-system solves this. Consider (56), which corresponds to (42e):

(56) DP <1*>

D NP <1>

Dem. NP <1>

Dem case N <1>

This tree shows a sequence of "Determiner + Dem. with case + NP". This accounts for the languages in which determiners can cooccur with demonstratives, like Rumanian, or Modern Greek where demonstratives are systematically accompanied by articles⁶:

---

⁶ Since the word order in the examples is different from the model configuration, a certain movement operation is assumed to have occurred.
The emergence of DP

(57) a. afto to oreo to vivlio
    this the good the book
b. to oreo afto to vivlio
    the good this the book
c. to oreo to vivlio afto
    the good the book this (Giusti 1997, 109)

An apparent counterexample to the assertion that case on demonstratives cannot bind the position in N is again provided by Modern German phrases consisting of "demonstrative with case + noun". Like the strong adjective examples, cases on demonstratives cannot bind the position. A weak empty D is there, but the reading is overruled by the presence of demonstratives.

Apparent counterexamples to (42f) and (42g) come from Basque: but detailed examination will show that the Basque examples do not contradict my analysis. Consider the following examples:

(58) a. Belhar gizenez hazten dire gainetan
    grass lush-Inst. feeding they are height(s)-Loc.

    ‘They are feeding with lush grass at the heights.’

---

7 Ianthi Tsimpli (p.c.) has pointed out that the word order in (57) is wrong. The examples are directly cited from Giusti (1997). I have left them as they are.

8 The argument that modern German has an empty D is implicitly mentioned in Longobardi (1994). He takes up Italian and English mainly there, but he suggests that the analysis can be extended to Romance and Germanic languages. Giusti (1995, 88) also suggests a non-overt FP (my DP) in German.

9 These examples are from John Anderson (p.c.). The word hanietan should perhaps be haietan.
The emergence of DP

b. Toki hanietan bada ainitz suge
   place these-pl-Loc. there-are many serpents

‘There are many serpents in these places.’

Apparently, the sequence “toki + hanietan” seems to be made up from “NP + (demonstrative + case)”, that is, this is a counterexample to the impossible construction (42g) and the sequence “belhar gizenez” seems to be “NP + (adjective + case affix), that is, the instantiation of the impossible (42f), but these analyses are not correct. In Basque, the case affix always come at the very end of the DP/NP, i.e. the case ending is added to the very last element of the noun phrase. Moreover, as a rule, a nominal phrase always takes a determiner of some kind, such as articles, demonstratives, quantifiers, numerals. They are placed at the end of the noun phrases in combination with case. The Basque articles -a (single), -ak (plural) are automatically added to most noun phrases that have no other determiners. Hence, in (58a, b) the case affixes are not added to the demonstrative or adjective, but they are added to the whole NP/DP. These facts suggests that the case suffix in Basque is an independent functional head. Since my theory allows this functional head to bind the R-role of the noun, the Basque language does not contradict my theory. The structure of a Basque nominal phrase is something like (59):

(59) Case P
    /   \
   DP   Case
     /   \  
    NP   D   \
     /   \   
    N    AP

Apparently, the case ending needs to attach to something to its left. This
The emergence of DP affixation is presumably phonological, and hence, no problems of lowering arises.

Finally, consider the example (60), corresponding to (42h):

(60) * DP <1>

```
  *   
 /   
D   NP <1>

 N <1>  Case Affix
```

Having a determiner with no case is incompatible with having case affixes on nouns. So, this structure is impossible.

However, if we interpret maturation theory as a reallocation of duties, then the co-occurrence of a morphological case system and a syntactic D system might be possible at an intermediate stage of development. That is, although in principle residual case morphology on nouns and a not-yet-established D system can overlap at a certain stage, there is no language in which both a syntactic D system and a morphological case system are developing together. Such an intermediate stage has been mentioned in Giusti (1995, 77).

Unlike the configuration in (60), the sequence "article with case affix + (adjectives with case affix) + noun with case affix" as in Modern Greek is not excluded. This phrase structure is explained as follows; case morphemes on articles and adjectives may be an instance of the percolation of case features. Case is first realized on head nominals and percolates onto other elements in the phrase.

4.3 Modern Chinese: an apparent counterexample

As mentioned above, the most serious problem for this analysis appears to be Modern Chinese. On my analysis either a D system or morphological case does the task of theta-binding. Chinese has no morphological case and no determiner
The emergence of DP system. This is also true for language like Japanese. But unlike Japanese, which has case particles to signal theta roles, Chinese has no case particles. How is it possible to decide the referential status of nouns in such a language? Indefiniteness can be expressed by quantifiers modifying nouns; definiteness might be expressed by demonstratives modifying nouns. However, in Chinese, bare nouns can appear as arguments in a sentence as well. Is it possible to assume an empty D system in Chinese? Although some researchers like Li (1999) assert that there is an empty DP in Mandarin Chinese, I argue that given my assumptions the answer must be "no". First, there is no morphological evidence for the presence of empty determiners. Second, it is implausible to assert that a language has a certain invisible category, which has no visible counterpart at all.

If we reexamine this problem in the framework of category maturation, it is no longer problematic. Category maturation involves the emergence of functional categories heading their own projections. However, in historical terms, maturation is better described as the reallocation of duties either from pragmatics to syntax, or from morphology to syntax. The historical development of language consists in the change in some domain of the trading relation between pragmatics, morphology and syntax. Then, the main effect of the demise of morphological case and the emergence of the D system described in this chapter is the reallocation of the duty of identifying referentiality from morphology to syntax. In the case of Chinese there is no such trading relation between morphological case and syntax.

If we examine Chinese carefully, in fact, it turns out to provide supporting evidence for our assertion rather than a counterexample to it. First, since Chinese lacks grammatical morphology and any syntactic D system, pragmatic and semantic factors must play a crucial part in the interpretation, although it is not directly related to our main concern here to discuss pragmatics. This is compatible with our general thesis that the total of linguistic force (syntax, morphology, pragmatics) is the same across languages. We have already
The emergence of DP explained this in diachronic terms, but it is also true synchronically. Historically, if a change in some domain occurs, this triggers the reallocation of duties between the domains: that is, the trading relation between the three domains applies to languages synchronically. As Li and Thompson (1978) state, the lack of grammatical morphology has a number of far-reaching consequences for the grammar of Chinese.

Apart from the pragmatic contribution, a few other devices are available in order to identify the referential status of NPs in Chinese. One device is word order. Bare nouns in Mandarin Chinese and Cantonese can have more than one interpretation. In postverbal position, Mandarin bare nouns may be interpreted as indefinite-existential (i.e., non-specific) as in (61a), as definite as in (61b), or as generic as in (61c) (Cheng and Sybesma 1998, 1):

(61) a. hufei mai shu qu le
    Hufei buy book go perfective particle
    'Hufei went to buy a book/books'
b. hufei he-wan-le tang
    Hufei drink-finished soup
    'Hufei finished the soup'
c. wo xihuan gou
    I like dog
    'I like dogs.'

In preverbal positions, Mandarin does not allow bare nouns to be interpreted as indefinite, although a generic reading is possible (op. cit):

(62) a. gou yao guo malu
dog want cross road
    'The dog wants to cross the road.' NOT: 'A dog wants to cross the road.'
The emergence of DP

b. gou jintian tebie tinghua
dog today very obedient
‘The dog/dogs was/were very obedient today.’
c. gou ai chi rou
dog love eat meat
‘Dogs love to eat meat.’

Although (61b) has a definite reading (which is supposed to be due to the aspect particle le), the post verbal position in Chinese is generally a signal for indefinite and the preverbal position is for definiteness (see Li and Thompson 1975; 1976a; 1976b). Accordingly, an indefinite noun cannot occur in a sentence subject position:

(63) *Yen lai le (Mandarin)
    a person (indefinite) come asp.
    ‘A person came.’

To solve the expressive problem this raises, a kind of auxiliary verb with the literal meaning of have, which functions as an existential marker like English there is placed in sentence initial position:

(64) you yen lai le
    Have/there a person come asp.
    ‘There came a person.’

In similar vein, bare postverbal NPs inside VPs, i.e. arguments, have an indefinite reading. There are two ways of giving a definite reading to such nouns; putting demonstratives like that before them, or preposing the nouns into a sentence initial position, i.e. topicalization:
The emergence of DP

(65) a. ngo seung maai syu (Cantonese)
    I want buy book
    'I want to buy a book.' (indefinite reading)

b. syu ngo seung maai
    the book I want buy
    'I want to buy the book.' (definite reading)

(66) ngo mai le neiben syu
    I buy asp. that book
    'I bought that book.' (Li and Thompson 1978, 228)

(The examples in (65) are from a talk by Lisa Cheng at SOAS on 5th May 1998.)

From this it can be seen that their position in a sentence is very important in deciding the interpretation of nouns in Chinese.

A further important property of Chinese that should be addressed here is the presence of a number of classifiers. According to Cheng and Sybesma (1998), Chinese nouns are like mass nouns in the sense that, in order for them to be countable, a measure phrase or classifier is necessary: that is, one main function of classifiers in Chinese is to make nouns countable. They argue that Chinese bare nouns have the status of CLP ("Classifier Phrase"), that is, a projection of a classifier with an empty CL head. Can we say that this CLP is identical with a DP? Although they argue that in Chinese the CL-head performs some of the functions performed by a D-head, they do not assert that CLP is DP, a functional category. Unlike a D-head in PE, for example, a CL-head in Chinese does not assign definiteness to a noun, since assuming Chierchia's (1995) account, the default interpretation of a singular plural in Chinese is that it is definite in its denotational extension. (Cheng and Sybesma 1998, 9, 10, 20). So what is the role of the classifier projection? The role of CLP is deictic: it is the discoursal link between the denotation of NP (even if this is a definite set) and whatever element or set in the real world it refers to (Cheng and Sybesma 1995, 12). The head of CLP must be filled to enable it to perform this deictic function: a function
The emergence of DP

which is shared cross-linguistically by a D-system. Although the presence of CLP does not affect the definiteness of nouns, CL turns an NP into a possible argument.

Further, Cheng and Sybesma (1998) argue that bare nouns in Chinese must involve one more structure besides a CLP. Specifically, an “overt CLP + noun” phrase which has an indefinite reading, involves a Numeral Phrase in its structure. That is, an indefinite [CL + N] is in fact a Numeral P with an empty Numeral head. This in turn gives rise to the generalization that a noun in a language like Chinese can only be indefinite in case there is a numeral. The indefinite interpretation of nominals in Chinese is linked to the presence of a Numeral P (the head of which may be overt or non-overt). Accordingly, the structure of bare nouns with an indefinite reading is as given in (67):

(67) Numeral P
     /        \
    /          \       
 Numeral   CLP 
 /   \ 
 CL    NP
  / \ 
 /   \ 
 N   0

The structure of bare nouns with a definite reading (Mandarin only) is shown in (68):

(68) CLP
    /       \
   /         \       
 CL     NP 
    /   \ 
   /     \ 
 N   0
The emergence of DP

which has only a definite interpretation, because there is no NumeralP present.

A surface string of the form \([CL + N]\) has two different structural representations: \([CL + N]\) with an indefinite reading is a NumeralP, as in (69a), while \([CL + N]\) with a definite reading is a CLP, as in (69b):

\[
\begin{align*}
(69) & \quad a. \quad \text{Numeral P (indefinite reading)} \\
& \quad \quad \text{Numeral} \quad \text{CLP} \\
& \quad \quad \quad \text{CL} \quad \text{NP} \\
& \quad \quad \quad \quad \text{(overt)} \\
& \quad \quad \quad \quad \quad \text{N} \\
& \quad \quad \quad \quad \quad \quad \text{(Numeral P can be either overt or non-overt.)}
\end{align*}
\]

\[
\begin{align*}
& \quad b. \quad \text{CLP (definite reading)} \\
& \quad \quad \text{CL} \quad \text{NP} \\
& \quad \quad \quad \text{(overt)} \\
& \quad \quad \quad \quad \text{N}
\end{align*}
\]

It is beyond the scope of this thesis to judge the validity of Cheng and Sybesma's analysis that numeral constitutes one more projection on top of the CLP, that only this NumP can give an indefinite reading to a noun, and their assertion (depending on Chierchia's (1995) proposal) that nouns in Chinese are inherently definite, while English nouns are inherently indefinite. To summarise, however, in their framework, the role of a D system or a functional category in English is to assign definiteness to a noun; the role of “Numeral” in Chinese, on the contrary, is to “undo” the definiteness of a noun and give an indefinite interpretation to it. Many problems - like the difference between Mandarin and Cantonese - are yet to be solved, however.

What the analysis and facts about Chinese grammar observed above imply is
The emergence of DP

that even if Modern Chinese has no functional category D, it has alternative
devices to identify the referential status of a noun, instead. Even if Cheng and
Sybesma's analysis of Chinese may need greater substantiation, it has
successfully demonstrated the possibility and the plausibility of data which are in
conformity with my position. Hence, Chinese, rather than being a
counterexample, provides supporting evidence for our assertion that a syntactic
D-system is not universally present for all languages, and that the “reallocation of
duties” is actually working.10

In summary, first, I argue that there is no functional category D in Chinese.
Second, the reallocation of duties can work synchronically. Not only syntactic
functional categories, but other devices can take care of the same task. CLP,
although it is not yet established as a functional D, is in the process of becoming a
D, suggesting a further example of grammaticalization from lexical items, as
classifiers are etymologically lexical nouns.

5. THE INTRODUCTION OF DETERMINERS

5.1 Introduction

In the previous section, we have observed how referential argument positions can
be bound by morphological case. The morphological case distinctions decayed

10. Chan (1999) suggests that CL and D may be instantiations of a
   single category. Where this leads to is not clear: I propose tentatively
   that the classifier may be related to the process of grammaticalization.
   As far as I can tell from the examples Cheng and Sybesma (1998) have
given, all classifiers are etymologically lexical content words with
   concrete meaning. Hence, the appearance of CLP is another instance
   of the grammaticalization.
The emergence of DP

in many languages and syntactic theta-binding by a D-system became necessary. I propose that a change in the case system from a semantic-based to a structural based one also played an important role in the emergence of a D system. We will look at this in more detail and show that there is a close relationship between the referential status of nouns and morphological case to corroborate the hypothesis in the previous section that morphological case can bind the R role.

5.2 Absence of a syntactic case system in OE

In PE there are two kinds of abstract syntactic cases: structural cases and inherent cases\(^\text{11}\). Structural cases, nominative and accusative, are not associated, or need not be associated with thematic roles. They are dependent on structural relations: "government" in the Government and Binding framework. In the Minimalist Program this notion of government (the relation between a head and its complement) is abandoned. Instead, case is checked under specifier-head agreement. Structural cases may be blind to thematic roles or there may be a many-to-many relationship between structural cases and thematic roles. Nominative can be assigned to the subject whatever its thematic role is:

(70) a. She hit John.
    b. She was hit.

In (70a) *she*, the agent of the action expressed by the predicate, is assigned nominative, while in (70b) although *she* is the patient, not the agent, it is also

\(^{11}\) Following Baker (1988), I assume that cases can be classified a tripartite way; structural case, inherent case and semantic case. Semantic case is assigned on the basis of thematic information only. No structural requirement is needed. I will refer to this tripartition again later.
assigned nominative case. The semantic agent of the action can even be assigned accusative:

(71) I believe him to have killed John.

The structure of (71) is an exceptional case-marking (ECM) structure and him is assigned accusative case by the main verb believe while it receives a thematic role from the lower clause predicate.

Inherent case as exemplified by the English genitive, and the German dative and genitive, is sensitive both to thematic relations and to the structural condition of government. It is assigned under two conditions: government and theta-role assignment.

It is well known that OE had a richer case system, compared with PE. OE nouns, pronouns, and adjectives had four case forms. There was a correlation between verbs and the morphological case of the arguments which the verbs took. Verbs such as andswarian ‘answer’, asecgan ‘say’, atywan ‘show’, genealecan ‘approach’, togepeodan ‘be faithful’ took dative nouns as their internal arguments. Verbs like ofslean ‘kill’, drincan ‘drink’ took accusative marked arguments. Verbs such as bidan ‘await’, blissian ‘rejoice’, hyrstan ‘crave’ took genitive marked NPs. These facts suggest that in OE there was a motivated correlation between morphological case and semantic roles. I propose that all the cases in OE were sensitive to thematic roles, that is, there is no distinction between inherent case and structural case. No syntactic case assignment (case feature checking) was operative in earlier English. What I want to argue is that in OE morphological case was not assigned to a thematically unrelated NP. For example, the thematic role of the subject of the verb undergo when it means ‘to bear, to suffer, to subject or to be subjected’ is not Agent, but Patient in PE, yet it is still assigned nominative case. At the earlier period, this was impossible. This meaning of the verb undergo dates from the 14th century and before that, it meant ‘to work under, to undermine’. At that time, the nominative subject of
The emergence of DP

undergo had an Agentive theta role. Other evidence for this proposal comes from impersonal constructions, which will be examination in section 6 of chapter 4. Claims along roughly the same lines are made by Fischer and Van der Leek (1983), Allen (1986) and Brody (1989). Later in the ME period, around the 13th century, structural case assignment became activated.

An objection to the above claim is that it lacks support in that impersonal constructions are marginal in OE syntax. Impersonal verbs can generally be used personally, without any easily identified semantic-relational difference, and for most of them the personal variants are more common: so hit sniwð, for instance, with expletive subject, is much more common than sniwde used impersonally. Moreover, the overwhelming majority of finite clauses in OE have a nominative subject. (John Anderson, p.c.).

It is true that I have argued that this claim is supported by the existence of impersonal constructions in OE, but I do not assert that the impersonals play a major role in OE syntax. It is not crucial to my position whether impersonal constructions are marginal or not in OE syntax. In fact, I do not think that the impersonals are particularly marginal in OE, although it is not obvious by what criterion any construction is decided to be major or marginal. Anyway, at least forty impersonal verbs, other than derived and compound ones, are attested in OE (van der Gaaf, 1904), a number that cannot be ignored. The important thing is the implication of the fact that OE verbs had the potential of apparent "subject-less" constructions.

As for the personal use of the OE impersonals, I will give a different explanation in chapter 4.

As regards expletive construction with impersonal verbs, I do not say that there are no examples of such it-constructions attested in OE texts, but that they are rather few. According to Elmer (1981, 34), there are no sentences of the putative it-construction with OE rue-type verbs such as hreowan ‘rue’, sceamian ‘shame’, eglian ‘pain, grieve’, offyncan ‘sorrow’, etc. in his material. The earliest example is from the 12th century Apolonius of Tyre. Although he says
The emergence of DP

that the syntactic form "it-V-NP-that-clause" was available already in OE, the personal variant never became productive in the syntactic paradigm of rue verbs, and the it-construction, like the personal type, was clearly not productive in OE.

Similarly, with please type verbs such as lician ‘please’, lystan ‘cause pleasure’, langian, ‘desire’, the personal construction is extremely rare (Elmer, 1981, 38-39). There is one single example of personal use with OE lystan, and none of the please type verbs occurs in the it-construction in OE.

The association of nominative, subject and agent for OE, as mentioned in footnote 12 below is problematic. Although I do not go into further details here, the nominative case is supposed to have been a neutral case which is not related to a particular thematic role. The agentive theta role is primarily realized by a different morphological case, e.g. instrumental in languages like Sanskrit. The fact that many OE finite clauses have a nominative subject with no agentive theta role is interpreted as the appearance of structural nominative case whatever the thematic role is. See section 6.4 in chapter 4 for more details about the question of morphological case and semantic roles, and the subject requirement.

However, as John Anderson has pointed out, my argument that in OE only semantic case was present is difficult to justify, since OE already had examples in which structural case was operative, even though the presence of the semantic case system is theoretically motivated as explained above.

My argument is that in pre-functional English, morphological case was closely related to the thematic roles of nouns, i.e., only semantic case was present. Here I follow the classification of Baker (1988, 105-119) who claims that verbal cases can be classified into three: structural, inherent and semantic, as touched upon above. Semantic case is assigned on the basis of thematic information only, and there is no structural requirement. The three cases are schematized as below:

(72)

a. semantic case: no structural requirement like "government" is needed.

There is a fixed correspondence between thematic role and morphological
The emergence of DP case. Examples: Sanskrit morphological case *vibhakti*, OE morphological case.

b. inherent case: a structural requirement like “government” is needed. Although there is no one-to-one correspondence, there is still a loose relation between theta role assignment and morphological case assignment. Example: Modern German verbally governed genitive case.

c. structural case: a structural requirement “government” is the only necessary condition for case assignment. Basically, there is no correspondence between theta role and morphological case. Hence, any theta role can be assigned. Examples: PE nominative and accusative case.

For example, in OE, although the instigator could stand as subject of the verb in the nominative case, the experiencer tended to function as the dative indirect object, rather than the nominative subject, as in (73) and (74). Note also that a genitive marked noun served as an argument of a verb in the same way as accusative or dative marked nouns, as in (75):

(73) þæ ofhreow ðam munece þæs hroflian
    then brought pity to the monk the leper’s
    mægenleast (ÆlfricHom I 23.336.10)
    feebleness (nominative)
    ‘the leper’s feebleness brought pity to the monk’

(Gloss from Denison 1993, 63)

(74) he Gode þæncode
    he God (dative) thanked
    ‘he gave thanks to God’

(75) him ofhreow þæs mannes (ÆlfricHom I 8.192, 16)
    him feel sorry the (Gen.) man’s (Gen.)
    ‘he was sorry for the man’
The emergence of DP

A similar situation is observed in Modern German:

(76) Das Bild gefällt mir gut

this painting please to me (dative) much

'This painting pleases me greatly.'

Plank (1981, 1983) also proposes that there are correlations between choice of case and semantic role. He has studied verbs which allow a choice of case in object NPs and asserts that the choice is motivated rather than arbitrary. For example, dative marking of object NPs tends to signal a relatively low degree of opposedness between the referents of object and subject NPs (i.e. the subject-object relationship is not adversative), accusative case marking signals relatively high opposedness (i.e. the subject-object relationship is not co-operative) correlated with patient function for the object, while genitive marking tends to encode circumstantial roles rather than full participants (cf., Denison 1993, 18-19). His assertion is well illustrated in the following examples:

(77) Him folgiað fugias scyne (Phoenix 591)

him (dative) follow birds (nominative) brilliant

'brilliant birds follow him'

In this example, there is no strong opposition between subject and object (dative NP). Rather the object is obedient to the subject.

(78) ond ða folgode feorhgeniðlan (Beowulf 2933)

and then pursued deadly-foes (accusative)

'and then he pursued deadly foes'

In (78) the subject and object are in a strong adverse relationship. Whether folgian means 'follow' or 'pursue' is signaled by the case of its object NP.
The emergence of DP

Similarly, "geefenlæcan + accusative NP" is said to mean 'imitate', but "geefenlæcan + dative NP" means 'resemble':

(79) and þa unandgytfullan hine geefenlæcen (BenR ii 11.16)
    and the unintelligent (Nom.) him (Acc.) imitates
    'and the unintelligent may imitate him'

In this example, there is an active involvement on the part of the subject. In that sense, there is an affected relationship between the subject and the object.

(80) Gif he geeuenlæcô gode (ÆlfricHom H . 13,129.71)
    if he resembles God (dative)
    'if he resembles God'

In (80) there is no action involved between the subject and the object unlike (79). The 'resemble' relationship is a passive relationship.

Likewise in Modern German, if the agent-patient relationship is co-operative rather than adversative, the patient may appear as a dative object rather than as the accusative object (cf. Taylor 1991, 218):

(81) a. Sie hilft ihm
    she helps him (dative)
    'she helps him'

b. Er antwortete mir
    he answered me (dative)
    'he answered me'

From the above data we can say that there were systematic correlations between morphological case and semantic role in OE. All NP arguments of a V must have one thematic role and carry a case related to its thematic role. At the
The emergence of DP

earliest stage of OE, in its ideal form ignoring other details, there existed the following hypothetical pairings:

<table>
<thead>
<tr>
<th>morphological case</th>
<th>syntactic function</th>
<th>thematic role</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>subject</td>
<td>agent$^{12}$</td>
</tr>
<tr>
<td>dative</td>
<td>object$^{13}$</td>
<td>patient (cooperative)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td>recipient</td>
</tr>
<tr>
<td>accusative</td>
<td>object$^{13}$</td>
<td>patient (adversative)</td>
</tr>
<tr>
<td>genitive</td>
<td>object$^{13}$</td>
<td>cause of the action or state</td>
</tr>
</tbody>
</table>

So, as mentioned above the genitive-marked noun, which cannot appear as the argument of a predicate verb in PE, was used as an object, denoting the cause of the state:

---

$^{12}$ I have posited the association of nominative, subject and agent for OE. However, as I discuss later, for some much earlier languages like Sanskrit this association does not work, since the notion subject came to languages later than morphological case and thematic roles. Even for the earliest stage of OE, I argue that it is difficult to posit the presence of subject. See the discussion in chapter 4, about the subject requirement.

$^{13}$ The term “object” is used here as a cover term in contrast with “subject”, even though this is not always an accurate way of characterising the internal arguments of verbs.
The emergence of DP

(82) Ic gefeah ðcæs weorces
   I rejoice that (genitive) deed (genitive)
   ‘I was glad because of that deed’

In OE, interrogative pronouns, adjectives and demonstratives had a fifth case, instrumental, signifying “means”, “manner”, “accompaniment or time”. Now these notions are expressed by means of prepositional phrases:

(83) Worhte Ælfred cyning lytle werede geworc
    Built Alfred king little troop work
    (Pyles and Algeo 1993, 109)

The literal translation of (83) is *Built Alfred King [with a] little troop [a] work*, that is ‘*King Alfred with a small troop built a fortification*’. *Lytel wered* is the nominative and the final -e marked the adjective as instrumental and the noun as dative, here functioning as an instrumental.

In fact, the situation in OE was much more complicated than this, since most of the texts available now are from the late stage of OE in which case distinctions have already decayed to a great extent. Accordingly, my hypothesis should be relativized to pre-OE stages of the language since the existence of a purely semantic-case stage is difficult to prove, even though it is theoretically motivated. However, we can safely say that overt morphological cases are closely related to thematic roles. All the cases in OE were semantic, and there is no distinction between structural, inherent and semantic case. Therefore the overall structure of earlier English can be said to be purely lexical in nature. All structures produced are thematic in that all the constituents of a clause except VPs carry thematic roles.

There is more supporting evidence that all cases in OE were lexical, in that first, the sequence “preposition + noun” was not yet as established as it is in PE (cf. Colman 1988), although the claim should be again moderated for OE, since
The emergence of DP

some examples of prepositional phrases are attested in OE. For example, the preposition to is redundant or is dispensed with, thanks to the morphologically overt case of nouns:

(84) hie tæcen sum gerad hiera geonglingum
     they teach some wisdom their children(Dat.)

     (Sweet, Anglo-Saxon primer 78/13-4)

     ‘they teach some wisdom to their children’

The dative case on geonglingum denotes that this noun phrase has a recipient role. If to is inserted, it signifies the special intention of the speaker to emphasize, say, the meaning of “destination”, “goal”, or “patient” (cf. Jespersen 1927, 290, OED). Later, in parallel with the decay of case distinctions, the insertion of prepositions became obligatory.

Further, although freedom of word order does not always entail the lack of a structural relationship like “government”, it suggests a looser relationship between elements in OE. It is then relevant to note that the order of “noun + preposition” such as him biforan ‘before him’ was frequent. This order was observed until early Modern English. Furthermore, there are examples in which other phrases intervened between a noun and a preposition:

(85) [he] him þær wiþ gefeaht
     [he] them(dative) there against fought

     (A.Chronicle Parker MS.70,12(871))

     ‘there [he] fought against them’

(86) se here him leah beforan
     the army him (dative) fled before

     (A.Chronicle Laud MS.151, 1 (1016))

     ‘the army fled before him’
The emergence of DP

(87) For ḫan ḫe se helende under-feng ḫa sinfullan and
Because the saviour accepted the sinful people and
ham mid imone hafede
them with moan had

(Sawles Warde I Cott. Hom.245. a1240 OED )
‘because the Saviour accepted the sinful people and moaned with them

(88) Submissive fall his princely feet before (Sh. Love’s Labour’s L 4.1.90)

Similarly, in verb phrases many phrases intervened between a noun and a verb, as is shown in (89). Sometimes, as in (90), noun phrases were used like adverbials without prepositions. Dative case was assigned depending on the semantic role which a noun phrase had:

(89) Thei threte so my men that I dar send non theder (Paston L 1 366/10)
‘They threaten my men so that I dare send none thither

(90) his agnum willan he com to rode gealgan (CP 32/20)
‘he came to the cross of his own free will’

Secondly, the ECM construction is very rare and is observed in very limited texts in OE. Brody (1989, 272) points out that the OE equivalents of the ECM constructions like (70) undermine the hypothesis that OE had no structural accusative since here accusative case seems to be assigned by the matrix verb to a thematically unrelated NP. However, this VOSI construction (=Verb + Object/Subject + Infinitive) in Visser’s term was less freely used in OE and was found mainly with causative verbs like lætan ‘let’, don ‘do’ (as a causative main verb), perception verbs like geseon ‘see’, gehieran ‘hear’, ongietan ‘perceive’, verbs of command like bebeodan ‘command’, beodan ‘bid’, biddan ‘ask’ (cf. Callaway (1913, 107-131), Visser (1963-1973, §2055-2081)). The VOSI construction with verbs other than those mentioned above was very rare in OE and was virtually confined to direct translations from Latin.
Brody (op. cit.) mentions one more problem that will arise if we assert that all cases in OE are lexical. This is the question of nominative assignment to nonthematic subjects in the OE equivalents of *It rains*, *It seems that Mary left*. If we assert that nominative is inherent in OE then we shall have to weaken our theory of case to account for the existence of these structures. He says that one possibility would be to say that inherent case is associated with a thematic role if possible, i.e. when the position receiving inherent case is thematic. However, this proposal will weaken the theory. Another hypothesis he mentions is that inherent nominative assignment is allowed in the structures headed by weather verbs because they are linked to the quasi-thematic role these verbs assign. However, this would leave *It seems that...* unexplained.

These examples are not problematic if we assume that all cases in OE are semantic rather than inherent. The whole nature of OE is lexical-thematic in that all the constituents of a clause except VP carry thematic roles. What follows from this is that expletives basically did not exist at the very earliest stage of OE. Accordingly, I assume that expletive *there* also was not yet established as such in OE. Concerning weather verbs like *rinan* ‘rain’, *sniwan* ‘snow’, the following clause without *it* was original:

(91) norþan     sniwdæ             (Seafarer 31)
    from the north snowed
    ‘snow came from the north’

This sentence is an impersonal “subjectless” construction. See section 6 of chapter 4 for further discussion. Except for weather verbs, the *it*-construction using other impersonal verbs was restricted to examples like *it hreoweb peet...* ‘it is regrettable for him that ...’, which occurred very rarely in OE. According to Elmer (1981, 107) no examples are listed with *lician* ‘please’ type verbs, and with *hreowan* ‘regret’ type verbs, only one example is recorded (see above p.129-30).

My hypothesis is that an expletive *it* was introduced in consequence of the
The emergence of DP

development of syntactic case assignment. Hence, case assignment gives nominative case to a position which is supposed to be case-marked syntactically. If the position is a Θ'-position, the insertion of a dummy *it* is possible in order to carry case. Therefore, the presence of expletive *it* presupposes the presence of syntactic case assignment and the presence of a Θ'-position. However, in OE only a Θ-position was available and syntactic case assignment was not operative. Syntactic nominative case is assigned by Tense/Inf. Then, the maturation of the T/I system makes syntactic nominative case assignment (case checking) possible. Therefore, the expletive *it* does not appear before the maturation of the T/I system.

This thematically motivated case system decayed and gave way to the thematically unmotivated case system in PE, as was mentioned at the beginning. We posit the onset of syntactic case assignment around the 13th century, which is consistent with the historical facts mentioned above. The new form *pe* came to be used as an invariable definite article *the* around 1400 as was also mentioned above. Thus, a thematically motivated case system, which we call a morpho-semantic case system, in which morphological case is closely related to theta role, made it possible for an NP to be an argument without the presence of a syntactic D system.

5.3 The demise of morphological case and the introduction of determiners

In the preceding sections we have observed that OE lacked a D system, and its case system was based on morpho-semantic properties, such that morphological case could theta-bind the R-roles in nouns. The overall structure of earlier English was lexical-thematic in nature, that is, the syntactic structure was completely lexically determined. Only arguments which are required by the meaning of a predicate had to be syntactically realized. A constituent was licensed to occur in a given A-position only if it was assigned an appropriate theta role, and only theta marking was a licensing condition for a nominal constituent.
The emergence of DP

In other words, nouns could become arguments by theta-role assignment only. Theta roles are expressed in the form of morphological case: morphological case marking is sufficient for a NP to be an argument.

By the early ME period, many OE inflectional distinctions were drastically reduced, a process which was accelerated by the Norman Conquest, although the leveling of inflectional endings had already begun in the late OE period. The changes were so extensive that most of the elements with person/number/case distinctions in OE were profoundly affected. In the adjective, which, like that in Latin, agreed with the noun it modified in gender, case, and number in OE, inflections were reduced to a contrast between $\emptyset$ and -$e$. Eventually, even this -$e$ ending ceased to be pronounced in the 15th century. OE demonstratives, $se$, $paet$, $seo$ and plural $pa$, were ultimately reduced to $the$, $that$, and plural $tho$.

In ME the OE weak nouns such as $nama$ ‘name’, $eage$ ‘eye’, and $sunne$ ‘sun’ became $name$, $eye$, and $sunne$. The strong feminine noun $lufu$ ‘love’ became $lufe$ as well in ME. All came to have the same -$e$ ending. The -$an$ ending of weak nouns became -$en$. The plural genitive -$ena$ ending became -$ene$. The dative plural -$um$ ending had become -$em$ and ultimately changed to -$en$.

The most important thing is that the genitive form no longer served as an argument of the verb or the complement of a preposition. The genitive singular ending -$es$ was extended to nouns that had belonged to declensions lacking this ending. The ME -$es$ ending, the reduced form of the OE -$as$ ending was also extended to serve as a general plural ending. Thus, the genitive singular and the general plural forms of most nouns fell together. The declension of OE $stan$ given above p. 94 became the following in ME:
The emergence of DP

(92) MIDDLE ENGLISH NOUN DECLENSION

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>ston[^14]</td>
<td>stones</td>
</tr>
<tr>
<td>Accusative</td>
<td>ston</td>
<td>stones</td>
</tr>
<tr>
<td>Genitive</td>
<td>stones</td>
<td>stones (stone)</td>
</tr>
<tr>
<td>Dative</td>
<td>ston(e)</td>
<td>stones (stonen)</td>
</tr>
</tbody>
</table>

The singular dative ending -e, the plural genitive -e, and the plural dative -en were sometimes confused with the weak endings and then replaced by the nominative/accusative form. This inflectional pattern of strong masculine nouns was extended to strong neuter nouns first, then to feminine nouns or weak nouns later. Now there are only two surface case forms in PE, the common case and the genitive case.

It follows that the task of identifying the referential property of nouns and turning them into arguments was no longer taken care of by morphological case. Because of the demise of the morpho-semantic case system, an NP cannot become an argument by appropriate theta-role assignment only. Thus, a syntactic D system was introduced in the English language.

6 INDEPENDENT EVIDENCE: THE DEVELOPMENT OF GERUND CONSTRUCTIONS IN ENGLISH

6.1 Gerund constructions in PE

Gerunds in PE have the distribution of a nominal phrase, but the internal structure of VP. Their nominal status is clear from the fact that they can occur in all

The emergence of DP

nominal positions, including the subject position in questions and the object position of prepositions, where a clause complement or an infinitival complement cannot appear:

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

(94) I told you about John’s leaving.
     *that John left.
     *for John to leave.

(Jackendoff 1977, 222)

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

(95) a. John’s destroying his career
    b. *John’s destruction his career

(96) a. John’s giving Mary a book
    b. * John’s gift Mary a book

(97) a. John’s appearing to be dead
    b. *John’s appearance to be dead

(98) a. John’s deliberately destroying his career
    b. *John’s deliberately destruction of his career

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

From the above examples we can say that gerunds in PE are nominals containing a VP. These conflicting properties are not easily expressed in a

142
The emergence of DP

single structure, although the point is clear. The structure must show that
gerunds have a clausal structure up to some point in the derivation and change
into a nominal. In a traditional analysis, gerund constructions are assigned a
structure such as (99) (cf. Chomsky, 1986):

(99) \[ \begin{array}{c}
\text{NP}_1 \\
\text{NP}_2 \\
\text{VP}
\end{array} \]

John's \[ \begin{array}{c}
\text{V} \\
\text{NP}
\end{array} \]

hitting the ball

However, the structure (99) is ruled out by X'-theory, if VP is supposed to be
analysed as the head of NP. That is, NP lacks a corresponding N' and N-head.
Besides, an exceptional mechanism is necessary to assign genitive case to the
subject in Poss-ing gerunds. A verb cannot assign genitive case.\(^\text{15}\).

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

\[ \begin{array}{c}
\text{NP}_1 \\
\text{NP}_2 \\
\text{VP}
\end{array} \]

John's \[ \begin{array}{c}
\text{V} \\
\text{NP}
\end{array} \]

hitting the ball

\(^{15}\) However, as we have discussed in section 5, an OE verb could
assign genitive to its argument.
The emergence of DP

(100)   
\[
\begin{array}{c}
\text{DP}_1 \\
\text{DP}_2 \quad \text{D}_1 \quad \text{D}_1' \\
\text{D}_1 \quad \text{XP} \\
\text{Agr}
\end{array}
\]

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

(101) a.   
\[
\begin{array}{c}
\text{DP}_1 \\
\text{DP}_2 \quad \text{D}_1' \\
\text{John} \\
\text{D}_1 \quad \text{VP} \\
\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad 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The emergence of DP
determiner co-occur in PE, if the genitive phrase and the determiner occupy
different positions? In fact, many other languages allow this co-occurrence. In
(101a) the complement of D is VP, but after the affixation, it is no longer a VP.
Moreover, a more detailed account is necessary for the derivation of the -ing form
from a predicate verb. We abandon this model (101a) to account for the
historical development of gerund constructions in English, although we maintain
the DP analysis for PE.

What is more relevant to this chapter is how this DP analysis could explain the
historical development of gerund constructions in English. Assuming the DP
analysis for PE, that is, the presence of a functional category within DP, and
assuming that noun phrases and clauses have similar structures, we will turn to
the OE period, leaving irrelevant details aside.

6.2 The historical development of gerund constructions in English

Since our main claim in this chapter is that earlier stages of English, like OE, lack
a syntactic D-system, we predict that gerund constructions which are one
instantiation of a D-system should be lacking in OE. The historical facts prove
that this prediction is true.

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

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

The derivation of these forms is a purely morphological process, with no syntactic implication. That is, -ung, -ing forms were pure nouns syntactically as well as morphologically in OE. Their functions are enumerated below:

(103) a. As subject:
    ḣa wæs gefylled Hieremias witegung (ÆlfricHom I, 80.18)
    then was fulfilled Jeremiah prophecy
    ‘Then was fulfilled the prophecy of Jeremiah’

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

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

d. As complement:
    Nis ðis nan wiglung, ac is gecyndelic ðincg
    is not this not any sorcery but is proper thing
    (ÆlfricHom I. 102.25.)
    ‘This is no charm, but is a natural thing’
The emergence of DP

e. Modification by adjectives:

\[
\begin{align*}
\text{æt} & \quad \text{is} \quad \text{call} \quad \text{for} \quad \text{urum} \quad \text{synnum} \quad \text{and} \quad \text{yfelum} \\
\text{that} & \quad \text{is} \quad \text{all} \quad \text{for} \quad \text{our} \quad \text{sins} \quad \text{and} \quad \text{evil} \quad \text{deserts}
\end{align*}
\]

(ÆlfricHom. I. 16.26)

(that is all for our sins and evil deserts)

f. Modification by demonstratives:

\[
\begin{align*}
\text{se} & \quad \text{sige} \quad 7 \quad \text{seo reafung} \\
\text{that} & \quad \text{victory} \quad \text{and} \quad \text{that} \quad \text{plunder} \\
\text{Persiscan} & \quad \text{feos}
\end{align*}
\]

(Orosius 84.21.)

(the victory and plunder of the Persian treasure)

Besides these functions, they admitted a plural, as is shown in (103e), although this was dependent on the meaning. Thus, the verbal properties mentioned in the previous section are unknown in OE and early ME until the 14th century. Even in the ME period the -ing form had the demonstrative in front of it, it had the genitive form of an object noun, or it needed a preposition of and was modified by adjectives:

(104) seo feding þara sceapa (OE) (CP 43/5)

that feeding of the sheep (genitive plural)

(105) for to be wise in byyngof vitaille (ME) (Ch CT A 569)

(to be wise in buying victuals)

(106) in vertuouse techynges of orisouns (ME) (Ch CT I 1038)

(in the virtuous teaching of prayers)

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

(107) 'Twill( =It will) weep for having wearied you (Sh Tp 3.1.9)

(108) I spake (=spoke) ...of being taken by the insolent foe (Sh Oth 1.3.134-7)
The emergence of DP

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

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

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

I assume the structure for the gerund construction in PE proposed by Jackendoff (1977). This derivation is described in the following trees. These different structures do not represent diachronic developmental stages, but illustrate the various synchronic possibilities:

(109) PE Model 1 DP <1*>
The emergence of DP

An instantiation of this model is a phrase like (the) killing.

(110) PE Model 2

```
(110) PE Model 2  DP <1*>
              /   \
             D     NP <1>
                  /   \
                 N' <1>
                      /   \
                     V' <1>  ing
                          /   \
                         V <1>  DP
```

This is exploited by a phrase like joining the club.

(111) PE Model 3

```
(111) PE Model 3  DP <1*>
              /   \
             D     NP <1>
                  /   \
                 N <1>
                      /   \
                     VP <1>  ing
                          /   \
                         DP  V'
                             /   \
                            (subject)  V  DP (object)
```

An instantiation of this tree is a phrase such as the men's joining the club.

A PE gerund cannot change into a NP argument until D theta-binds the position in it, because no overt case marking is available any more. Prior to this
The emergence of DP

all the properties of VPs were available, for instance, taking a subject argument or an object argument, being modified by adverbials and taking a passive voice, or taking a perfect form:

(112) a. He has a liking for solitude.
    b. English was still in the making.

(113) Reading aloud often sent him to sleep.

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

This is a process of a lexical category incorporating a phrasal projection. The event position which originated in VP percolates up to the nominal and is discharged there.

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

(115) stage 3
      \___________
       |       |
    N <1*>
      |       |
----
stage 2
      \___________
       |       |
    N <1> Case Affix
      |       |
----
stage 1
      \___________
       |       |
    V <1> ung/ing

Here each stage represents a synchronic derivational process in OE. At derivational stage 1, the suffix attaches to a verb, and the whole structure changes into a noun, where ung/ing is a head nominal. Stage 1 might be a possible input to a further operation, but after this stage no more operation on the verb is possible (at stage 2). This is the reason why verbal properties are not observed in OE derived nominals, as we have seen. That is, it cannot take an object
The emergence of DP

argument or a subject argument. The morphological case attached to a derived N can theta-mark the open position or the R-role of a noun. At derivational stage 3, the constituent is saturated. The derivation ends.

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

7. Conclusion

In this chapter, I have tried to show that a syntactic D-system emerged at a certain stage of the diachronic development of English, due to the demise of morphological case. First, I have demonstrated that the task of a D-system is to determine the referential status of a noun, and turn an NP into a DP. Since NPs are inherently predicative, it is necessary to turn them into DPs for them to be arguments. This task is done by either morphological case or a functional category D. That is, a noun has an open position, which is a referential argument. This R(eferential) argument or R-role position must be bound either by theta-marking (morphological case) or by syntactic theta-binding.

Second, I have argued that there was no DP in OE. OE had a richer morphological case system, compared with PE. Hence, the R-role in an OE noun was bound by a case affix which was attached to a verbal stem. The historical data from the OE period support this claim.

Third, I have shown that, given these two possibilities of binding referential positions in nouns, the languages of the world can be described in terms of the combinations of morphological case and a functional D-system. Some languages have only morphological case, but no D-system. Others have only a
The emergence of DP

DP. I have examined some cross-linguistic data, and shown that this is in fact the case with a few languages.

Fourth, I have answered the question what triggered the emergence of a DP in English. Since morphological case distinctions decayed, the task of identifying the referential property of nouns and turning them into arguments was no longer taken care of by morphological case. Hence, a functional category D was introduced. Further evidence for this claim is provided by the absence of gerund constructions in OE, since gerunds are one instantiation of a D-system.
Chapter Four

The Emergence of TP: Temporal Interpretation and Syntactic Phenomena

1. Introduction

In this chapter, I discuss the category of tense and claim that there was no functional projection, TP/IP in earlier languages like OE. I argue that tense, a grammatical functional category, which heads a phrasal projection in the clause structure was a new development in the English language. The functional category TP/IP emerged in the development of the language. Then, we must answer the two questions which will follow from this main claim:

Question1: how were semantic distinctions of time expressed, or how was the temporal interpretation performed in languages, if the languages are assumed to have had no TP/IP?

The proposed answer is that there are a few other devices to give the temporal interpretation available in languages: verbal morphology, i.e. affixes on verbs, aspect, or time adverbials, etc. This will be discussed in section 3.
The emergence of TP

Question 2: what triggered the emergence of TP/IP in English?

There are two main factors in this triggering. One of them is the development of hypotactic structure which has reached the stage of embedding. The other is the demise of verb morphology to express the subjunctive mood or agreement features such as person, number. This issue will be discussed in detail in section 7.

There is a strong objection to the claim that OE lacks embedding. It is true that apparent instances of subordination are available in OE texts. However, we can say that in the history of the English language from OE to PE there has been a marked change in the distribution of hypotactic as opposed to paratactic structures. Although structures of both types occur in all stages of the language, there is a steady increase in the number and variety of hypotactic structures, and a corresponding decrease in the number of paratactic structures.

We should note too that, when we try to analyze OE texts, it is difficult to know how far we can rely on the punctuation provided by scribes. The scribes have provided the punctuation they thought right to the manuscripts of OE. Modern editors have also given OE texts what they felt right. Mitchell (1988, 173) points out that “the worst enemy of those trying to appreciate OE prose and poetry is the unmodified use by editors of a system of punctuation designed for an entirely different language, either modern German (as in Klaeber’s Beowulf) or modern English (as in Dobbie’s Beowulf).” So, many symbols which are not present in original manuscripts are added: capitalization, comma, semi-colon, full stop, etc.

The danger arises when we try to draw grammatical boundaries based on the punctuation provided by the scribes and the editors. As cited in Mitchell (1988, 178), Robert Foster correctly argues that “many OE narrative passages are composed of strings of largely independent units marked and coordinated by ḫa, which is used here as an infinitely repeatable marker of temporal sequentiality and carries little or no information about the grammatical relations of clauses.”
The emergence of TP

This *hwa*, is often glossed by researchers as ‘when’, and hence as a subordinator as in PE. The fact, is however, as Mitchell says (op.cit., 179), that “in OE prose sentence boundaries in the strict sense are not always well defined.” One might defend the view that word order difference is a good piece of evidence for distinguishing main clauses from subordinate ones, instead. Again, a difficulty arises. Although it is said that SVO order is for main clauses, while SOV order is for subordinate ones, the order SOV can occur in main clauses and “hence the order SOV does not certify that a clause is subordinate (Mitchell and Robinson, 1992, 64).

This view of punctuation is not limited to Mitchell and Foster, but is shared by other researchers. For example, E.G. Stanley (1974) states that “it is obvious that editorial punctuation is not a reliable guide to the sentence structure of Beowulf, ... We can make assumptions about what forms a structural unit regardless of editorial punctuation. ... We may feel that a structure is interpreted ..., but we have no means of testing the validity of that feeling.” Mitchell (1988, 186) agrees with this and in particular would stress that ‘our impression’ can only be ‘based on what we should feel in similar cases in Modern English’ and that ‘we have no means of testing the validity of that feeling.

It therefore behoves us to avoid dogmatism.” If my hypothesis that OE lacks embedding is dubious, then - given the above mentioned situation, the assertion that earlier OE has embedding, i.e. a clause is embedded within another clause and there is a structural hierarchical relation between them, is equally dubious (op.cit. 186).

The point of my argument is that the need for a temporal interpretation is what triggered the structural i.e. syntactic realization of tense as a functional category. Besides, the demise of verb morphology played a part in this category maturation.

When we talk about tense, we should be sensitive to two different functions of TP in Present-day languages. For example, TP in PE has two different functions, one a device to give a temporal interpretation to VP, the other a syntactic function,
The emergence of TP for example, to underpin the subject requirement known as the Extended Projection Principle (EPP). Existing analyses cannot always accommodate these two different properties of tense. Some pay attention to only one of them. The former function of tense is to give a semantic temporal location to the event role in VP, and thereby to make possible the assignment of a truth-value to the proposition by specifying its truth conditions in this world. However, this function of TP/IP is not the whole story. Although tense is often defined as the grammaticalisation of temporal location (location in time) or distinctions of time (past, present), in a language like PE, tense plays a more important role as a grammatical functional category, rather than merely signifying the semantic distinctions of time. In fact, the tense system of PE is not restricted to indicating semantic distinctions of time location. For example, the “past tense form” of a verb does not always indicate “past time”; as witness, the examples in (1) and (2):

(1) Robyn lectured at 4 o’clock.

(2) a. If Robyn lectured now, I could sit back and relax.
    b. According to our original plans Robyn lectured next week.

(Smith 1989, 106)

Although in (1) the past tense form denotes past time, in (2) the clause with the past tense lectured seems to indicate the present or the immediate future. That is, the past tense form corresponds to the three different times. Thus, the interpretation signified by morphological tense may be overridden by the presence of some other stronger category, such as a temporal adverbial.

In addition to signifying location in time, an more important role of the category of tense concerns syntax. As was mentioned above, tense plays a crucial role in PE clause structure. Syntactic phenomena dependent on the category tense are the following: the subject requirement, nominative case assignment to the subject, do-support, etc. In the subsequent sections, I will examine the syntactic roles of the category tense in Present-day languages more
The emergence of TP

properly.

What follows from my main claim is that the function of temporal interpretation comes first, and the syntactic phenomena caused by the TP are secondary, i.e. come later, as a result of the establishment of a syntactic category TP/IP. Hence, those syntactic phenomena dependent on TP are not observed before the emergence of TP in English. This point will be discussed in section 6.

The chapter is organized as follows: first in section 2, it is shown that verbs have the E(vent) position universally, and this E position must be bound somehow. The nature of this E role is another argument, i.e. a temporal argument of a VP. In section 3 we will see that not only T/I, but other elements can bind the E-role in a VP. The task of giving a temporal interpretation is taken care of by a functional category T/I or alternative devices like aspect, temporal adverbials or temporal affixes. Binders of the E position are not limited to the functional TP/IP. Rather TP/IP is a new comer as a binder historically. With respect to the discussion in section 3, we will make the distinctions between tense and aspect clear and show how aspect played a role in earlier languages in section 4, where the relation between aspect and tense will be clarified. Against the standard Indo-Europeanist assumption that tense has developed from aspect, I claim that aspect and tense have developed independently, since tense is conceptually different from aspect, although they are interrelated.

Next, in section 5 and 6, we will pay attention to English and show that OE had no syntactic Tense projection, while PE has TP/IP. As the evidence for this, we will observe the syntactic effects of a category tense in PE clause structure, such as the subject requirement, or subject-auxiliary inversion, lacking in OE. In 7, having examined the theory of temporal interpretation, I will give a detailed discussion of what triggered the emergence of a syntactic tense category. We will see that the introduction of embedding in English triggered a functional category T/I. That is, in languages with embedding, a structural requirement is necessary for temporal interpretation. For semantic well-formedness, the E-role
The emergence of TP

must be associated with speech time. Unlike finite main clauses, embedded clauses do not have direct access to the speech time. Accordingly, the embedded tense must be linked to the speech time and this linking can be effected only structurally, i.e. by the establishment of the functional projections CP and TP/IP in both main and embedded clauses. Assuming that earliest OE had no true embedding, the absence of a T-system from OE easily follows.

Finally, I conclude this chapter in section 8.

2. Tense : A temporal Argument

Several analyses have been proposed to account for tense phenomena. Traditionally, tense has been treated as a sentential operator as in Stowell (1981, 1982), or as a referential expression (for example Enç 1987), and as a temporal predicate (see, for example, Zagona 1993 and Stowell 1994, 1995). I will adopt a theory of tense which treats tense on a par with nominals, following Higginbotham (1985) and Enç (1987). Rejecting the traditional treatment of tenses as sentential operators in semantic theories, which is based on the idea that the tense of a sentence affects the temporal interpretation of all expressions in the sentence, and this in turn rests on the assumption that all expressions are interpreted relative to times, Enç (1986, 1987) shows that in a tensed clause verbs are the only expressions whose interpretation is necessarily affected by the tense, and that this point is obscured if one insists on semantically analyzing tenses as sentential operators. She argues that all predicates have one more argument than previously assumed, e.g. she analyzes kiss as a three-place predicate, sleep and president as two-place predicates, etc., and requires one of the arguments to come from the temporal domain.

Drawing on Higginbotham (1985), we can restate the claim as follows: verbs as well as nominals have an open position in them. This is the position E(vent) of the thematic grid of the verb. The position E, or the E role corresponds to the
The emergence of TP

“hidden” argument place for events or situations. For example, the thematic grid of the verb see is shown as \(<1, 2, E>\). The position 1 and 2 will be the thematic positions filled e.g. by John and Mary, that is, the usual thematic roles like Agent or Theme. For a proposition to be interpretable at LF, this position E must be bound somehow, as a tense specification is necessary for a proposition to be truth-evaluable (Higginbotham 1985, 554ff.). We call it the temporal argument of VP. The phrase marker (4) of the sentence (3) is the following:

(3) John saw Mary.

(4) \[
\text{IP} \\
\text{NP} \\
\text{Inf’} \\
\text{Inf} \\
\text{V} \\
\text{NP}
\]

The sentence (3) is well-formed and true if and only if John saw Mary. In (4) \(+p\) denotes the past-tense formative. Thus, (4) together with (8) illuminates the character of the E-role and shows that every verb has an E-role which must be bound in some way in order to obtain a well-formed semantics.

The referential treatment of tense is not new. Partee (1973) argues that tenses behave like pronouns. They can have antecedents in the discourse as in (5):

(5) Sheila had a party last Friday, and Sam got drunk. (Partee 1973, 605)

The time is specified in one clause, and the tense of a subsequent clause refers to the same time. The antecedent may be a time-clause as in (6):
The emergence of TP

(6) When Susan walked in, Peter left. (Partee 1973, 605)

Or the antecedent may be sentence internal, i.e. with a time adverbial as in (7):

(7) We climbed Mt. Baker three weeks ago. (Partee 1973, 604)

As Partee (1973, 604) says, the tense seems to be redundant in this sentence, since the time specification is provided by the time adverbial.

Following Higginbotham (1985), I assume that tense is treated like another referential argument. The referential arguments must be bound for reasons of interpretation and semantic well-formedness. In the case of VPs in PE, the binder of this E position is a syntactic functional category Tense or Infl. The position E of the thematic grid of the verb is discharged at the point where VP meets Infl, where T(ense) is located as shown below:

(8)

```
  IP<1*, 2*, E*>
     /   \
    /     \ 
   /       \
  DP       I' <1, 2*, E*>  
     /   \               \   
    /     \           VP<1, 2*, E> 
       /     \       /  \ 
      /       \     /   \ 
     /         \   /     \ 
    /           \ /       \ 
   /             \|         \ 
  John I VP<1, 2*, E> V' <1, 2*, E>  
            |              |  \   
            |              |    \ 
            |              |     \ 
            |              |       \ 
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The asterisk in the angle brackets indicates that the position closes or is discharged. Note that Higginbotham admits that stative verbs as well as verbs of change or action will also have E-positions (Higginbotham 1985, 555).
The emergence of TP

Theta binding takes place only under government\(^1\), that is, in the following configuration, according to Higginbotham:

(9) \[ \[ A \ A B \]\]

A and B must be sisters. This is also stated in the conditions on theta binding of the E position (10) (cf. Zwarts 1992, 62):

(10) Theta binding

A functional head Infl theta-binds a lexical projection VP if and only if:

i. Infl and VP are sisters, and

ii. Infl is coindexed with the referential argument of VP.

Infl and VP must be sisters. A functional head cannot theta-bind a specifier or an adjunct.

Thus, I treat tense as a referential argument in parallel with D in DP. Tense is the temporal argument of a verb and is referential. This E-role can be bound syntactically (by a functional head T), or as we shall see immediately by alternative devices like aspect, time adverbials or verb morphology as in OE.

\(^1\) I assume the formal definition of government:

X governs Y if and only if

(i) X is either of the category A, N, V, P, I;

or

X and Y are coindexed;

(ii) X c-commands Y;

(iii) no barrier intervenes between X and Y;

(iv) minimality is respected.
3 Binders of the E-position in VP other than Tense

In the previous section, we have observed that VP has an E-role universally, and the E-role must be bound for semantic well-formedness. In the case of PE, the binder of the E position is a functional category Tense located in TP/IP. However, the binder of this E-role is not limited to the functional category Tense. There are many other devices to bind the E-role of a VP. In this section, we will observe that this is indeed the case with present-day languages as well as earlier languages.

Temporal adverbials can also bind the E-role in a VP. The role of temporal adverbials in temporal interpretation has been long recognized. For example, Kiparsky (1968) says that tenses in the Indo-European languages derive historically from adverbs. He argues that in the case of early Indo-European there are good reasons to regard tenses as adverbial constituents. Kiparsky (1968, 45) further points out that treating earlier Indo-European tenses as adverbs is “hardly a novel or very controversial” suggestion. There is syntactic evidence to show that temporal adverbials in both Indo-European languages and PE have some syntactic effect: for instance, in (11):

(11) a. * He came formerly earlier.  
     b. *He came some time ago previously.  
     (Kiparsky 1968, 47)

There is a restriction on the co-occurrence of more than one general adverb of past time.

He further observes that “the augment e-, which denotes past tense in some Indo-European languages, quite transparently originates as an adverb or a particle” and the “suffix -i, which characterizes the primary non past tenses” has been widely regarded since the latter half of the 19th century as having originated as an adverbial element (op.cit. 45).

Assuming Kiparsky’s analysis, temporal adverbials or temporal particles which
The emergence of TP

were realized as prefixes or suffixes to a verb stem, could bind the E role, since those affixes were directly attached to a verb stem, meeting the structural requirement of theta-binding:

(12) a. VP<1*,E*>  
    \  /
   /  
  NP  V<1,E*>  
  \ /
  affix  V<1,E>

b. VP<1*,E*>  
    \  /
   /  
  NP  V<1,E*>  
  \ /
  V<1,E>  affix

However, the question of how to explain cases in which temporal adverbials which are not realized as affixes can bind the E-role remains to be answered. Besides, we must explain why TP appeared despite the presence of temporal adverbials in ME, as we will see in section 6. I will return to these questions later.

Kiparsky’s suggestion is instantiated in current theories of tense such as Hornstein’s. Hornstein (1990, ch5) argues that tense is neither an operator nor a pronominal-like element (cf. Partee, 1973). Tense is an adverbial. Why is tense an adverbial? First, tenses typically mark verbs and are modified by adverbs, and second, tenses are derived from adverbials changing from free morpheme to bound morphemes. Hornstein further asserts that adverbs do not bind, and do not have scope, and hence tenses do not enter into relations with other tenses or other elements in terms of binding or scope. However, as we have observed above, temporal adverbials or temporal particles realized as
prefixes or suffixes to a verb stem, can bind the E role. Hence, I dissociate myself from Hornstein's proposal.

The sentence (7) above given in Partee (1973, 604) is a good example of the fact that temporal adverbials can give a time specification. Enç (1987, f.n. 646) also points out that if the governing category contains a temporal adverb, a temporal adverb can also bind Comp or tense, with no undesirable consequences. Even in PE, the presence of temporal adverbials may override the interpretation signified by morphological tense, as is shown in (2) above.

A second binder of the E-role is provided by Aspect. Since the relation between aspect and tense is discussed in the next section in more detail, it is sufficient here to say that when aspect has a morphological realization in a clause structure, the aspect can bind the E position as well. Indeed, earlier languages like Proto-Indo-European, or ancient Greek, are assumed to have had formal realization of aspects only, and had no grammatical category to express tense originally. As is well known, modern Chinese lacks a tense system, but has an aspect system.

The third alternative binder of the E-role is provided by temporal affixes attached to verbal stems. As we shall see later in more detail in the discussion of OE, the tense morpheme on the verb, which does not constitute a syntactic functional projection, can give a temporal interpretation, although defectively.

The availability of these elements to give a temporal interpretation, i.e. to bind the temporal argument is not limited to the historical domain. It is also implicit in PE sentences. Indeed the aspectual properties (lexical aspect) of the predicate verbs play an important role in the interpretation. As is well known, a simple present tense in a PE matrix clause is problematic. For example, (13) with a simple present tense is infelicitous except when it denotes a generic or habitual reading:

(13) The king sings.
The emergence of TP

If a clause with a present tense event verb has a generic or habitual reading, it means that the action or event is not punctual, so, there is no need to anchor tense in the stream of time. Hence, this sentence is possible on that reading.

However, a sentence with the same simple present tense but with a stative verb is generally acceptable:

(14) John knows Greek. (Kamp 1991, 57)

In the case of the verb know, the generic-habitual reading is awkward. As Kamp (1991, 57) points out, a stative verb such as know has inherently the aspecual meaning [+Progressive] when it has a present tense form, while an event verb such as sing has the aspecual value [-Progressive] in its present tense form. The speech time of (14) is included within the time span denoted by the verb know. Hence, although the time point is not rigidly specified, the sentence (14) is truth-evaluable. Thus, the aspecual meaning, which the predicate verb has inherently, makes a sentence interpretable.

We can point out other examples in which aspecual meaning can save sentences which are disallowed otherwise. Let us take the complements of

2 The original example in Kamp (1991, 57) is ‘John thrives’. However, the generic-habitual reading in this example is not impossible, although it is awkward. Hence, I have used a different sentence. I admit that Kamp’s assertion, i.e. the aspecual value [+/- Progressive] of a verb affects the acceptability of a sentence with a present tense, obtains in a default situation, and if appropriate contexts, or adverbials are given, the default interpretation will be overridden and alternative interpretations are available. In fact, identical syntactic structures may receive different semantic interpretations due to “event structure” or “conceptual structure” (Jackendoff’s (1997) term)/ “coercion” (in Pustejovsky’s (1993) term) contributed by contexts or adverbials.
The emergence of TP

*believe*-type verbs which assign or check accusative case on the objective subject, known as Exceptional case-marking verbs, and the raising complements of verbs of saying. Only stative verbs can occur in the infinitival complements embedded in these matrix verbs:

(15) a. *I remember [John to buy the book]
    b. (*) I believe [John to wash the car]
    c. (*) Mary is said [ t to bring the wine]

Although (15b) and (15c) are grammatical on a habitual reading, (15a) is unacceptable even on a generic reading. Infinitival complements which contain eventive verbs are ungrammatical, since they appear to be assigned no temporal interpretation. According to Enç (1985), eventive verbs differ from stative verbs in that they are associated with a temporal argument which is generated within the projection of the verb and must be bound. However, I dissociate myself from this assertion since I assume that stative verbs as well as verbs of change or action also have temporal arguments, following Higginbotham (1985, 555).

Anyway, the temporal arguments are not bound in those sentences. However, if there is some cue in the complements which makes it possible to interpret them temporally, eventive verbs are allowed. This might be a compound form (aspectual auxiliary + past participle/infinitive) which forces the event denoted by the complement to be interpreted as simultaneous, past or future with respect to the matrix event as shown below:

(16) a. I remember [John to have bought some books]
    b. I believe [John to have washed the car]
    c. Mary is said [ t to have brought the wine]

There is a suggestion from Anderson (p.c.) that (15) and (16) are not very persuasive examples, given that one can make a case for the
The emergence of TP

Or, they might be a quantificational or adverbial expression which forces a generic/habitual interpretation (for example, all, every etc.) and, (b) and (c) are grammatical, although (a) is still problematic:

(17) a. ?? I remember [John to always buy wine in the same wineshop]
    b. I believe [John to wash the car every Saturday]
    c. Mary is said [ t to bring a bottle of wine to every party she goes to]

These examples show that an aspectual, quantificational or adverbial expression can act as a binder for the temporal argument of the predicate, or can give a temporal interpretation.

4 Aspect

4.1 Aspect versus Tense

Before discussing how aspect bound the E-role in earlier languages, it is helpful to make the differences between tense and aspect clear by explaining some basic terms which we will refer to later, since there has been terminological and conceptual confusion between aspect and tense. As discussed in section 3, against the standard Indo-Europeanist assumption that tense has developed from aspect, I claim that aspect and tense developed independently although interrelated.

Tense is "deictic" while aspect is not deictic. In order to judge whether the proposition represented by a sentence such as (18) is true or false, you need to perfect involving a "secondary tense" rather than aspect. However, the notion "secondary tense" is also non-deictic and non-referential, the introduction of this new term does not make a difference.
The emergence of TP

know who the speaker is, where it is uttered, and when it is uttered:

(18) I was in the garden last Thursday.

Person time and place are deictic elements, sensitive to the context of utterance, but aspect is not deictic. The truth of a proposition is not affected by whether you express it as in (19) or (20):

(19) Thatcher treats her Cabinet colleagues like children.

(20) Thatcher is treating her Cabinet colleagues like children.

(Smith 1989,108)

Aspect, defined as different ways of viewing the internal temporal constituency of a situation (Comrie 1976, 3) is traditionally divided into two subgroups: grammatical aspect and lexical aspect. Grammatical aspect concerns fundamentally the distinction between imperfective and perfective. Lexical aspect concerns the classification of verbs or verb phrases depending on their inherent aspeuctual properties such as stative versus active, or telic versus atelic. These two correspond to C. Smith's (1991) classification: “viewpoint aspect” and “situation aspect.” She views aspect as “the semantic domain of the temporal structure of situations (event and states) and their presentation” (1991, 3). Viewpoint aspect (perfective or imperfective) refers to the way situations are grammatically presented, while the situation type refers to the internal structure of the situation (i.e. stative versus active). Situation aspect is indicated by a composite of a verb, its arguments and adverbials. Viewpoint aspect is morphologically indicated by affixes or special forms. From the above discussion, it is clear that tense and aspect are different things. So, in the following examples, (21a) and (21b) signify the same tense (past), but they differ in aspect:
The emergence of TP

(21)  a. John and Mary built a rock garden last summer.
    b. John and Mary were building a rock garden last summer.

    (C. Smith 1991, xvi)

In (a) a rock garden was built to completion (perfective). In contrast, (b) conveys only that a building event was in progress (imperfective). There is no information about whether it was completed.

Thus, we can conclude that, although they are interrelated, aspect and tense are different.

4.2 Aspect in history

I claim that aspect bound the E-position in earlier languages. It is rather widely accepted that the Indo-European languages had no grammatical category to express tense originally (cf. Kuryłowicz 1964, Taraporewala 1967, and W.P. Lehmann 1974). Proto-Indo-European’s verbal system was originally based on aspect, with a basic contrast between imperfective and perfective. This contrast was indicated by means of endings \( m, s, t \), versus \( x, th, o \). Use of the perfective indicates that the action is assumed to be completed and, as a consequence, imperfective commonly indicates incomplete action; yet it is more precise to state that, with an imperfective expression, there is no implication that the action is completed. This contrast in aspect by means of affixes on verbs is clearly reflected in the following Vedic example (Lehmann 1974, 107):

(22) kuvid asya védat (Rigveda 2.35.2)
    certainly it he-will-understand
    ‘Gewiß wird er es verstehen’ (Geldner 1951-1957:I, 321)
    ‘he will certainly understand it’

In contrast with the perfective form \textit{veda}, ‘I know’, which denotes a state
The emergence of TP

resulting from completed action, this form *vedat* by means of its affix -t clearly indicates the imperfective meaning. The affix was directly attached to a verb stem and met the structural requirement of theta binding. Hence, this affix could bind the E-position.

As well as aspect, so-called temporal particles also functioned as the binder of the E-position in such languages. Sanskrit and Ancient Greek have preserved patterns in which particles indicate the time of the action of the verb as in the example (23).

(23) ὁσ' εἰδε τά t' εόντα τά t' εσσόμενα pró t' εόντα

who knew those Ptc. being those Ptc. will-be before Ptc. being

‘Who knew the things happening now, those that will happen and those that have happened.’

(Iliad I.70. from Lehmann1974, 139)

In (23) the past time was indicated by a particle *pró*, which means ‘before’, or ‘earlier’, while the verb *eόnta* is a non-finite form and does not give deictic information. Alternatively temporal specification can be expressed by temporal adverbials as was shown in the example (7).

As I mentioned above, I argue, against the standard assumption, that tense has not developed from the Proto-Indo-European aspect system. Indo-Europeanists like Lehmann (op.cit. 146, 187, 190, etc.) claim that the inherited Proto-Indo-European aspectual forms were adapted for a tense system in descendent languages. However, we have observed in section 1 that tense and aspect are conceptually different. Furthermore, assuming that tense has developed from aspect, means that there is a transition from A to B, which is qualitatively different from A. No principled explanation for this transition has been provided.
The emergence of TP

4.3 Aspect: its grammatical status

As mentioned in the previous section, I claim that aspect can bind the E position, and did so in earlier languages (and in early child languages). Does this claim mean that aspect constitutes a syntactic category and serves as a functional category in the clause structure? Or, doesn’t the fact suggest the presence of a tense category, rather than aspect? We have already answered the second question. Aspect is distinct from tense, although they are interrelated. Hence, the presence of aspect does not suggest the presence of the category tense.

The first question remains: whether aspect in Proto-Indo-European constituted a syntactic category, projecting in the clause structure or not. There are also debates about the grammatical status of aspect for present-day languages. There is not much disagreement with the claim that tense in PE constitutes a functional category, whether TP is an independent category separated from AgrP or a fused IP category as Thráinsson (1996) asserts. However, concerning aspect, there is much divergence of view. Tenny (1987) proposes that aspect is an independent syntactic functional category and should be separated from Infl. Ouhalla (1991) also asserts that aspect has its own projection in the structure. Giving evidence from Bantu languages like Chichewa, he argues that aspect should be located immediately above VP, which reflects the closeness between aspect and verb:

```
(24) AgrP
     \   / \
    /   \  \Agr TP
   /     \  \  AspP
  /       \  \Asp VP
```

171
The emergence of TP

By contrast, I argue that aspect does not project in the structure as a functional category in PE, but is basically carried by semantic features. Supportive evidence for this assertion comes from first language acquisition. Data from there show that children acquire aspect earlier than the functional category, tense. According to maturation theory, early child grammars lack functional categories including tense (Radford 1990, Tsimpli 1992). For example, child utterances (around 20 months) lack inflected verb forms such as +s, indicating a third person singular present tense form, or +d indicating a past tense form. However, data from several languages show that child grammars contain aspectual information at this prefunctional stage. This suggests that aspect is not a functional category. Tsimpli (1996), examining early child acquisition data cross-linguistically (Modern Greek, German, French, Irish, Spanish and English), concludes that aspectual distinctions are operative at the prefunctional stage, while tense distinctions are missing. Aspect morphemes attached to the verb stem are not the result of syntactic affixation, but of a morphological rule. I assume that aspect is one of the semantic features which the verb has.

Second, I would like to point out the lack of independent evidence for the presence of an aspect projection in current adult languages. Given the assumption that functional projections and features dissociate, the only reliable evidence for the presence of an aspectual projection is the syntactic effects caused by it. As far as my knowledge is concerned, there is no independent syntactic evidence for the presence of an aspect projection, compared with a number of pieces of syntactic evidence for the presence of TP. According to recent work by Borer and Schmitt (cited by Ouhalla, personal communication), evidence for AgrO can count as evidence for AspP, since AspP and AgrO are the same category. However, this suggests that there is no strong evidence for the independent projection of AspP.

The only syntactic evidence given by Gelderen (1993, 181) is, where the quantifier all may be left in Spec AspP positions in some cases:
The emergence of TP

(25) They may not all have been reading a book.
(26) They may not have all been reading a book.
(27) They may not have been all reading a book.

In (25) all is supposed to be in [Spec, PerfP]; in (26) it is in [Spec, AspP] (if been is assumed to be in AspP) and in (27), it is in [Spec, VP]. However, in both (25) and (26) the position of all might be explained without positing a perfective or aspectual projection (cf. Radford 1997 ch 10). For example, in (25) the subject or the Quantifier Phrase, all they can be generated in [Spec, vp] and the QP raises to [Spec, TP] and all is left behind there while they raises further to [Spec, AgrSP].

\[4\] It is not that I am supporting the split Infl analysis for PE: that is a separate issue. I want to point out the theoretical possibility of an analysis without aspect projection.
The emergence of TP

(28) AgrSP

D AgrS' they

AgrS NegP may

not TP

QP T'

all t have

QP vp

(irrelevant details omitted)

(26) is derived in essentially the same way, except that the all is left behind in [Spec, vp]:

174
The emergence of TP

As Ouhalla (p.c.) suggests, there is an analysis available that denies the standard assumption that the aspectual auxiliaries *have*/*be* originate inside VP and raise to TP/IP. Rather they are generated under T/I. However, this position cannot explain where *have* and *be* originate when they appear together with a modal as in *it may have been V-ed*. Moreover, assuming the presence of an Aspect Projection in PE is not widely accepted. I follow the standard assumption here. Hence the claim that there are enough functional projections to accommodate adverbs such as *all* without positing an aspectual projection is plausible.

A question arises here: what is the categorial status of aspectual affixes in PE, like *~ing*, or *~en*? Following the discussion in Tsimpi(op.cit. 66, 79), I assume that the *~ing* affix or *~en* affix gets attached to the verbal stem by a process of lexical rather than syntactic affixation. Aspectual affixation involves a lexical
The emergence of TP

derivation and is subsumed under the class of morphological processes which take place prior to any syntactic level of representation. The verbal head together with the aspectual morpheme behaves as a morphological unit, as is shown below in (30):

(30)

Hence, in earlier languages, I argue that neither aspect nor temporal location or time distinctions, i.e. past/present distinctions, were embodied in functional categories. Both of them were carried by different but interrelated semantic features. They did not constitute a projection in the clause structure.

5 TP as a syntactic category in PE

5.1 Introduction

In this section and the next one, I show that OE had no syntactic tense projection whereas PE has TP. For this purpose, I first summarize the syntactic effects of the category Tense in PE clause structure, since the only reliable evidence of the non-presence of TP should be syntactic. Next, I will observe that all those syntactic phenomena dependent on TP were lacking in OE. Hence, I derive the conclusion that there was no TP in OE: more accurately, that there is no evidence
The emergence of TP for a TP in OE.

5.2 PE clause structure

As mentioned above, in languages like PE, tense plays an important role as a grammatical functional category and is responsible for many syntactic effects. In this section, attention is paid to this role of a tense category.

Tense or Infl is a key element in the development of a language’s syntactic structure. For example, the establishment of Tense/Infl as a syntactic functional category has given rise to the subject requirement in the English clause, and this is perhaps true of many, if not all, other languages. In Osawa (1996) tensed clauses in adult grammars were assumed to have the status of IPs or AgrPs, that is, a maximal projection of a functional head I or Agr. However, in the Minimalist Program, Agr has been abandoned as a functional category, although the idea is still under reformulation.

Following Thráinsson (1996), my position is that some languages have fused AgrSP and TP, while others have a TP separate from AgrSP. It is beyond the scope of this thesis to decide whether PE has a fused AgrSP or not. I leave this issue open, and use the term “TP”. For my purposes what is important is that there be at least a projection TP. PE clause structure is assumed to be a projection of Tense, TP, provisionally given as in (31):
The emergence of TP

(31) PE clause structure

Syntactic phenomena associated with the category tense in PE are enumerated below:

1) nominative case assignment to the subject
2) do-support
3) other auxiliaries
4) separation of Tense: In PE TP is separated from VP.
5) subject requirement

In the subsequent sections, these topics will be examined one by one. In section 6, the non-presence of these syntactic effects in OE will be likewise discussed one by one.

5.3 Tense and case

In the Government and Binding theory, nominative case was assumed to be
The emergence of TP

assigned by the functional head I to an appropriate constituent projected into the syntactic structure of the clause. This is the subject requirement. If there is no argument to receive those discharged features, expletives are necessary to receive them. In the Minimalist Program, tense is also responsible for nominative case on the subject. T has a nominative case assigning (checking) feature and this case feature is uninterpretable. This strong feature is also checked and deleted by a categorial feature of the raised subject DP, because a strong feature of a nonsubstantive or rather functional category such as T or C must be checked by a feature of a lexical category.

I use the term "strong" feature in the sense of Chomsky (1995, 232-234):

Feature strength is one element of language variation: a formal feature may or may not be strong, forcing overt movement that violates procrastinate. ...If F is strong, then F is a feature of a nonsubstantive category and F is checked by a categorial feature. ...If so, nouns and verbs do not have strong features, and a strong feature always calls for a certain category in its checking domain. ...Thus, the EPP plausibly reduces to a strong D-feature of I, and overt wh-raising to a strong D-feature of C.

Hence, if a language has no TP, there is no landing site for a moved element. This was the case with earlier English.

According to Chomsky (1995, 284), case features are [-interpretable] so that they must be checked and deleted for the derivation to converge. If they are not strong, features are covertly raised to T and checked after Spell-Out. But, these features are strong, so the subject DP moves into [Spec, TP] overtly, i.e. before Spell-Out. But, why doesn’t only the feature raise, leaving the rest of the DP

---

5 For a contrary view, see Cormack (1995) in which it is argued that case has lexical reflexes in both lexical and compositional semantics.
The emergence of TP

unaffected? Chomsky (1995, 262-263) says:

(32) F carries along just enough material for convergence.

That is, the operation involves pied-piping of the subject DP for Phonological Form (PF) convergence.

A second function of T is to check the tense of the verb (Chomsky 1995, 197).

5.4 *Do-support and other associated effects*

In adult PE, tensed clauses have the status of TPs, maximal projection of a functional head T, which carries tense (and agreement features, if I take the position of a fused IP for PE). It (or They) must actually be discharged or realized onto a verbal stem. If the modal auxiliaries are base-generated under T, these features are realized on the modal in T. If T/I can be underlyingly empty and a nonmodal auxiliary verb (perfective *have*, progressive *be*\(^6\)) is in the head V of VP, this nonmodal auxiliary verb moves out of VP into an empty head T position in TP. It can acquire the tense/(agreement) features of TP there. If I can be underlyingly empty and there is no nonmodal auxiliary verb in VP, T features are discharged onto the head of (nonauxiliary) V of VP.

However, if the negative particle *not* occurs, for instance, this becomes a barrier preventing the T/I-features from being discharged onto the head V. Therefore, the following sentence is ungrammatical:

---

\(^6\) I have not included the main verb *be* here. Although the main verb *be* behaves syntactically in the same way, its status has not yet been clarified in the literature. This concerns also the issue of the nature of the predication relation in a sentence where *be* is used. It may be different from the ordinary verbal projection, or it may be the same.
The emergence of TP

(33) *John not wrote it.

In such a case, the dummy auxiliary *do is inserted in T in order to provide a verbal stem for the tense/agreement features to be discharged onto. This is referred to as *do-support.

Likewise, an interrogative or emphatic sentence which contains no auxiliary requires the use of the dummy auxiliary *do.

The auxiliaries *will, shall, can, may or must, the so-called modal auxiliaries, are assumed to be base-generated under the T/I node in PE, and have formal syntactic properties (the "nice" properties cf. Huddleston 1976, 333[7]) which distinguish them from lexical verbs. The modal auxiliaries as well as the dummy *do can undergo inversion in questions. They are directly negated by a following *not; they occur in tags, etc.

There is then no need to stipulate that lexical verbs do not permit inversion as in (34), and cannot be directly negated by inserted *not, as (33) shows:

(34) *Want you to come?

Rather, these facts fall out from the interaction of independently motivated elements of clause structure and T.

5.5 Other auxiliaries in PE

This topic will be discussed in the historical domain more properly later. In PE, the modal auxiliaries *will, shall, may, can and must are base-generated under T.

---

7 In Huddleston (1976) NICE is an acronym for Negation, Inversion, Code and Emphasis. The last two elements in "NICE" can alternatively be interpreted as Contracted/Clitic, and Ellipsis. See Warner (1993, 41, 82, 240).
The emergence of TP

In PE, adult grammars, have/be is raised out of the VP in which it is base-generated into the TP overtly. According to Chomsky (1995, 198), raising of auxiliaries reflects their semantic vacuity; they are placeholders for certain constructions, at most "very light" verbs. Such elements, lacking semantically relevant features, are not visible to LF rules and must be raised overtly before LF.  

English T has a strong feature [AUX], which must be checked and deleted before Spell Out. Then, auxiliary verbs having [AUX] are raised to T.

Later, we will see that the OE congeners of the PE modals are re-analyzed as auxiliaries as the consequence of the emergence of a T-node.

5.6 Other Syntactic evidence for the presence of TP in PE: separation of T from VP

In PE, there are a few more pieces of evidence that TP has its own projection independent of VP: for example, it is impossible to front VP together with tense:


If TP is separated from VP, then VP fronting or VP deletion is possible:

(36) a. I thought John would kill Bob and in fact kill him John did.
    b. Poirot hoped that Marple would find the letter, but find it she could not.
(37) a. John studied linguistics and Mary did, too.
    b. Poirot will come to the party but Marple won’t.
    c. Mary has reported this incident to the police, and Nancy has, too.

In the above examples auxiliaries denoting tense, did, could, will, and has could

---

8 As is well-known, only the first of a sequence of auxiliaries is raised. However, I follow Chomsky (1995).
The emergence of TP occur in a separated position from VP, although do in (37a) is a pro-verb, not an auxiliary. A larger unit including VP and TP cannot move. VP alone can be moved or deleted. This is strong syntactic evidence for the presence of TP separated from VP in PE. TP is present outside of VP in PE.

5.7 Subject requirement

The subject has been a linguistic universal in many theoretical frameworks (see Greenberg 1966), although its treatment varies from researcher to researcher. In classical transformational grammar the subject was defined configurationally, that is, the subject was the NP immediately dominated by S(entence). In subsequent theories such as Government and Binding Theory, the notion subject was prominent mainly because of the requirement that all clauses must have subjects. This requirement, known as the EPP, is due to the presence of a functional category I and this principle applies at all levels of syntactic representation: [Spec, IP] positions must exist at all syntactic levels. The EPP is derived from a deep-seated principle which requires the syntactic saturation (or discharge) of obligatory functional features (see Radford 1990, 236). For example, the case features assigned by a case assigner must be syntactically discharged onto an appropriate constituent syntactically projected into the clause structure. Nominative case is assigned by finite Infl with the feature composition of [+Tense, +Agr]. Infl case-marks [Spec, IP] under government. The subject requirement is, in fact, a nominative case requirement which is assigned by a functional category I.

In the Minimalist Program, where case checking rather than case assignment always involves a Spec-head relation, the EPP is reduced to the effect of the strong D-feature of T. According to Chomsky (1995, 233):

(38) A strong feature has two properties. First, it triggers an overt operation, before Spell-Out. Second, it induces cyclicity.
The emergence of TP

T has a strong uninterpretable D-feature that does not enter into interpretation at LF and must be deleted. Some category must be raised to check this feature. So, the subject DP is raised into the [Spec, TP] position and both D-features of T and the subject are checked and deleted. In this operation, the Minimal Link Condition that a constituent should move the shortest distance is at work. Therefore, the subject DP, not the object DP is raised. The presence of a functional category T is thus also responsible for the subject requirement in the Minimalist Program.

6. The emergence of TP in the history of English

6.1 Introduction

In this section, I concentrate on the development of the English verb system and argue that OE had no syntactic tense projection by showing the lack of any related syntactic effects of TP in OE, as observed in the previous section. If my hypothesis in section 7 - that is, the development of hypotactic structure which has further developed into embedded structure - triggered the syntactic realization of tense as a functional category is along the right lines, it follows that without functional categories TP/IP, CP, there is no syntactic subordination in a particular

---

9 Anderson (p.c.) observes that the evidence that has been surveyed is not particularly supportive of T rather than I (except in relation to the E-role). It is true that some of the evidence is neutral as between T and I. However, as mentioned in section 5.2, following Thráinsson (1996), I assume that some languages have a fused IP, while others have a separate TP. It is beyond the scope of this thesis to decide whether PE has a fused IP, or not. The most relevant point is the presence of the E-role.
The emergence of TP

language. This is indeed the case with the history of English. On my hypothesis, there was no embedding of a tensed clause into a higher tensed clause in the earliest English.

6.2 How was the E position in OE bound?

As we observed in section 3, binding of the E position is not limited to the functional projection TP. It is possible for a language like English to lack a functional category T at a certain stage of diachronic development and still allow for a temporal interpretation to be given to a VP. As I said before, functional features are different from functional categories. So, the absence of functional categories does not necessarily entail the absence of the associated features and conversely, the presence of features does not always suggest the presence of the related functional category. Hence, it is necessary to make it clear that tense is a grammatical functional category, so it should be distinguished from notions of time, or semantic distinctions of time. Hence, in the subsequent sections, if I conventionally use the term “tense”, it does not mean that OE had a functional category “tense”.

Before turning to binding in OE, it is desirable to give a brief introduction to the OE verb system. The OE verb distinguished two tenses, the past and the non-past (present) and distinguished three moods; indicative, subjunctive, and imperative. There were two number distinctions, singular and plural. The OE verb marked three persons, but only in the singular of the present and past indicative. All plurals and the singular of the subjunctive mood used the same form. OE had two types of verbs, depending on how they formed their preterite and past participle. The weak verb forms its past by adding a dental suffix like Modern English want, wanted, while the strong verb makes its past forms by changing its stem vowel, known as Ablaut, like drive, drove, driven. The conjugation of a typical weak verb cepan ‘to keep’ and a typical strong verb bindan ‘to bind’ is as follows:
The emergence of TP

(39) **Present System**

<table>
<thead>
<tr>
<th></th>
<th>Indicative</th>
<th>Subjunctive</th>
<th>Imperative</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ic</em> (I)</td>
<td>cepe</td>
<td></td>
<td>bind</td>
</tr>
<tr>
<td><em>þu</em> (you sg.)</td>
<td>cepest</td>
<td></td>
<td>bindest</td>
</tr>
<tr>
<td><em>he, heo, hit</em> (he, she, it)</td>
<td>ceped</td>
<td></td>
<td>bindeo</td>
</tr>
<tr>
<td><em>we, ge, hi</em> (we, you, pl. they)</td>
<td>cepado</td>
<td></td>
<td>bindado</td>
</tr>
</tbody>
</table>

**Preterit System**

<table>
<thead>
<tr>
<th></th>
<th>Indicative</th>
<th>Subjunctive</th>
<th>Imperative</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ic</em> (I)</td>
<td>cepte</td>
<td></td>
<td>band</td>
</tr>
<tr>
<td><em>þu</em> (you sg.)</td>
<td>ceptest</td>
<td></td>
<td>bunde</td>
</tr>
<tr>
<td><em>he, heo, hit</em> (he, she, it)</td>
<td>cepte</td>
<td></td>
<td>band</td>
</tr>
<tr>
<td><em>we, ge, hi</em> (we, you, pl. they)</td>
<td>cepton</td>
<td></td>
<td>bundon</td>
</tr>
</tbody>
</table>

There were no inflectional endings for future. The non-past or present verb forms were used for the future meaning.

Now, let us turn to the question how the E-position was bound in OE. In OE, the morphology on verb stems could bind the E-position in a VP. Time

---

10 The weak imperative without *-e* is limited to verbs with a long stem vowel.
The emergence of TP

distinctions were expressed morphologically, as is shown above. As we shall
see later, since the use of *have/be* as auxiliaries is a later development (*have* as
the perfective auxiliary emerged around 1200, *be* as the progressive auxiliary
appeared around 1300\(^{11}\)), one-word forms of the verb, i.e. not periphrastic forms,
were used in OE. The two simple tense forms, past, and non-past, covered a
wide range of temporal relationships. The present form expressed not only the
actual present, but also habitual or iterative action and was also used for the
future:

\[(40)\]
\[
a. \text{ha} \quad \text{beowan} \quad \text{drincan} \quad \text{medo} \quad \text{(Orosius20, 17)}
\]
\[
\text{the servants drink mead}
\]
\[\text{‘The servants drink mead.’}\]
\[
b. \text{Hio} \quad \text{ful oft} \quad \text{dred} \quad \text{unscyldgum}
\]
\[
\text{It (fate) very often harms innocents}
\]
\[\text{‘It very often harms innocents.’} \quad \text{(Meters of Boethius 4,36)}\]

\(^{11}\) It is very difficult to pinpoint when *have/be* were established as
auxiliaries. As I discuss in section 6.3.5, researchers’ attitude to the
issues differ. The date 1200 is just a suggestion. There are many
criteria to think of: if we focus on the use of intransitive verbs, the first
is found around 1100 as Visser (1963-1973, § 2003) points out, although
only conclusive verbs were used. However, if we pay attention to the
cocurrence with adverbials of definite past tense, which is not
allowed in PE, examples are found until late ME. The reason I have
suggested “around 1200” is that around 1150 the use of *have* as
auxiliary was extended to the other intransitive verbs. See, for
example Hoffman (1934, 48).

As for *be*, Mustanoja (1960, 585, 586) suggests that the progressive
was not common in early ME, and it had become current in the central
and East Midlands and in London by the 14\(^{th}\) century.
The emergence of TP

c. forþam þe ge heofað 7 wepað  (Luke 6,25)
for you shall mourn and weep
‘for you shall mourn and weep’

Although different views are common, the past form is taken to have expressed all of the following: a completed action in the past, a continuing action in the past, the perfect and the pluperfect. Sweet (1953, § 92) states that “the preterit has the meaning of the modern past continuous and past, perfect and pluperfect.” Mitchell (1985, § 634) also says that “the simple past often stands for the not-yet-developed perfect in both principal and subordinate clauses.”

Temporal adverbials served in collaboration with verb morphology to give a temporal interpretation. Look at the following examples:

(41) nu he spycþ openlice  (John 7, 26)
now he speaks openly
‘now he is speaking openly’

In (41) the adverb *nu* ‘now’ denotes an action which is simultaneous with the speech time for which PE uses a progressive form.

(42) 7 eft was papa swa he ær wæs
and again was pope as he before was
    (A. Chronicle Parker MS.56, 13 (797))
‘and he became pope again as he had been’

In (42) the adverb *ær* ‘before, earlier’ denotes that the event time expressed by the second past form verb *wæs* is prior to the event time of the first past form.

Thus in OE the temporal affixes, attached directly to verbal stems, which have no syntactic effects, could bind the E-role. This meets the structural requirement of E-role binding given in (9):
The emergence of TP

The evidence that these affixes were only the morphological realization of temporal features of verbs and did not suggest the presence of a tense category, which is a category of a whole clause, comes from the fact that syntactic phenomena depending on a tense category, such as the subject requirement, do-support, modal auxiliaries, etc. were not observed in earlier English at that time, as we will see later.

For OE I propose the clause structure below:

The two NPs are unordered with respect to each other, and the parentheses show that NPs are optional. Note that, as is discussed in section 6.4, earlier English had clauses in which there were no NP arguments, so-called impersonal constructions like norpan sniwe ‘snow came from the north’ or clauses in

\[ (44) \]

\[
\begin{array}{c}
\text{VP} \\
\text{Spec} \\
\text{V'} \\
\text{(NP)} \\
\text{V} \\
\text{(NP)} \\
\text{[+/-perfective]} \\
\text{[+/-past]} \\
\text{[+/-modal]} \\
\end{array}
\]

12 As I have said in chapter 3, I do not assert that the impersonals are major in
The emergence of TP

which there was only one NP argument. Adverbials, including the negative
particle ne, are placed in [Spec, VP]. Temporal adverbials are also placed in
[Spec, VP]. Note that in the proposed clause structure above, modal, temporal
and aspectual features are placed on verbs. Temporal features, i.e., distinctions
of temporal location, and modal features are all expressed inflectionally, that is,
they had a separate morphological form. Hence, the temporal affixes bound the
E role, as shown in (45):

(45) \[
\begin{array}{c}
\text{VP<1*, E*>}
\end{array}
\]

\[
\begin{array}{c}
\text{NP} \\
\text{V<1, E*>}
\end{array}
\]

\[
\begin{array}{c}
\text{V<E> temporal affix}
\end{array}
\]

None of these features constitutes a phrasal projection in the clause structure. In
parallel with the case of DP, some of the deictic temporal features on verbs were
upgraded to constitute a functional category T in due course. Behind this is a
more general tendency towards the grammaticalization of semantic features into a
syntactic functional category.

6.3 Non-presence of TP in OE: absence of related syntactic phenomena

6.3.1 Introduction

In this section, I will show that none of the syntactic phenomena caused by a
functional category T which have been observed in section 5 are found in earlier
OE syntax. As Anderson (p.c.) suggests, norpan sniwde may be less common
than a clause with an expletive subject in available OE texts, but we should note
that the PE equivalent of norpan sniwde is just impossible.
The emergence of TP

English. First, I will argue that OE had a morphological case system, and no syntactic case system was operative there. Next, I focus on the establishment of modal verbs, do, and have/be as auxiliary verbs or as semantically "light verbs" (Chomsky 1995, 198) to carry tense.

6.3.2 OE case system

In section 5.3 we have observed that a functional category is involved in determining nominative case in PE, whether the relevant functional category is I or T and whether the relevant procedure is case assigning or case checking. Briefly, the PE case system is mainly a syntactic system where case can be assigned structurally to a thematically unrelated NP.

This kind of syntactic case system was absent in OE. Instead, OE had a morpho-semantic case system where morphological case is closely related to theta-roles. OE nouns, pronouns, and adjectives had four case forms. There was a close relation between the verbs and the morphological case of the arguments of the verbs. For example, verbs such as andswarian ‘answer’, asecgan ‘say’, ætywan ‘show’, genealecan ‘approach’, togepeoden ‘be faithful’ took dative nouns as their internal arguments. Verbs like ofslean ‘kill’, drincan ‘drink’ took accusative marked arguments. Verbs such as bidan ‘await’, blissian ‘rejoice’, pyrstan ‘crave’ took genitive marked NPs. These facts suggest that in OE there was a motivated correlation between morphological case and semantic roles. I argue that in earlier English, morphological case was closely related to the thematic roles of nouns, i.e., only semantic case was present. No syntactic

13 Anderson (p.c.) notes that citing a few examples of lexical case is scarcely compelling evidence for a semantic case system. Although I grant this, I would like to point out that only one verb, namely hatan, provides evidence for the presence of an older stage of synthetic passive in English (Sweet 1953, § 53, Mitchell and Robinson 1992, 111).
The emergence of TP case assignment (case feature checking) was operative or needed in earlier English. Semantic case is assigned on the basis of thematic information only, and there is no structural requirement. Later in the ME period around the 13th century, structural case assignment became activated.

Hence, under this morpho-semantic case system, there was no need of functional categories to assign or check case. This issue (of a morpho-semantic case system) is discussed in more detail in section 5 of chapter 3.

6.3.3 Lack of do-support

A striking fact about earlier English is that do-support did not occur. Negative sentences were formed by inserting negative particles before or occasionally after finite full verbs and direct questions were formed by inverting subjects and finite full verbs as in Present-day German:

(46) Canst þu temian hig
    know you tame them

    ‘Know you how to tame them? = Do you know how to tame them?’

(47) Ic ne secge
    I not say

    ‘I do not say.’

No examples of do-support were attested in OE at all. A few examples were attested in ME, but it was not established as it is in PE.

There are three main factors which are supposed to contribute to the development of an auxiliary do: the existence of a causative verb do, a pro-verb do and an anticipative do. The most influential factor is the causative do:
The emergence of TP

(48) he dede Davy sadillyn an-oder hors (Paston L II 28/38-9)
    he caused Davy saddle another horse

‘He caused Davy to saddle another horse.’

When the causative *do* is followed by an infinitive, the object of *do* is sometimes omitted:

(49) a. I did (someone) saddle a horse
    b. Now hastily do (someone) fecche a book
    Now hastily cause someone fetch a book

(Chaucer, CT B 662)

In (49a) *do* is adjacent to the infinitive verb. The subject of the infinitive is an unspecified object of *do*. Gradually, another interpretation appeared. The subject of an infinitive is identical with the subject of a main verb *do*. In this new interpretation, *do* lost its causal meaning and was thought of as something like a tense marker. Then, the construction using a simple tense form *He saddled a horse* came to have the same meaning as the sentence using the periphrastic form *He did saddle a horse*. In fact, in the ME period such periphrastic forms were often attested:

(50) þer anon he dede sende after a fishere
    ‘thereupon he did send after a fisherman’

(Chaucer, CT B 662)

This is the first step to the development of an auxiliary *do* (see Ellegård 1953; Denison 1985). However, it took some more time for the current use of auxiliary *do* in interrogatives and negatives to be established. Although it was established around 1700, some verbs such as *know*, *care* resisted the introduction of *do* to form a negative sentence, and *come*, *do* (as a lexical verb) resisted the use of *do* in forming a question for a while.
The emergence of TP

Thus, we can conclude that an auxiliary do was grammaticalized from a lexical verb to a grammatical function word. The essential function of do came to be to receive the tense features.

6.3.4 Lack of Modal auxiliaries

6.3.4.1 Ancestors of PE modals

OE had no modal auxiliaries. As I have already mentioned in the previous section, all the PE modal auxiliaries derived from lexical main verbs. Warner (1993, 92) says that the OE ancestors of PE modal auxiliaries already appeared in constructions which can sometimes be translated using modern auxiliaries. Accordingly, they had at least some notional points of contact with their modern congeners, but their grammar was clearly much closer to that of non-auxiliary verbs. Pre-modals such as *sculan, willan, magan, and cunnan were simply verbs in OE (see Lightfoot 1979, Roberts 1985).

Although some historical linguists like Mitchell (1985) use the label “modal auxiliary” for some OE verbs, the application of the term auxiliary to OE is problematic. The use of this term has traditionally been dependent on semantic equivalence, but modals in PE have formal syntactic properties which distinguish them from lexical verbs. In negative sentences not is inserted after modals. Direct questions are formed by preposing modals, while lexical verbs cannot be preposed, etc. As we show later, PE modals have developed from lexical verbs. However, the speed of the process of grammaticalization was different for different verbs. Some verbs such as will resisted being used as a modal until much later, while others acquired the properties of modals earlier.

14 As Anderson (p.c.) points out, grammaticalization was already far advanced at that time, since modals could be used as constructional equivalents to the subjunctive.
The emergence of TP

The ancestral verbs of PE modals are enumerated below:

(51) Ancestors of PE modals
i. *sculan → shall *Sculan was a full verb which meant to owe. From this meaning developed the sense of obligation. Later it acquired the meaning of reference to the future.

ii. willan → will Willan was a full verb which meant to intend, or to want. This willan could take a complement clause. Because futurity is closely connected with volition and obligation, this verb was later extended to have future reference in ME.

iii. magan → may PE may derived from a full OE verb magan, which meant to be physically strong enough to do.

iv. cunnan → can PE can developed from a full verb cunnan in OE, which meant to know. Later, the meaning of this verb was extended to to know how, be able of intellectual ability, and acquired modal meaning.

v. *motan → must Must derived from the past tense form of a full verb *motan which meant to be permitted to.

6.3.4.2 Syntactic evidence

There is strong syntactic evidence to show that the ancestors of modal verbs in OE were lexical verbs. First, they could take a direct object and take a nonfinite form (infinitive):

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15 Although I have argued in section 1 above that the English language saw the development of hypotactic structure up to the point of embedding, both paratactic and hypotactic structures could occur in OE.
The emergence of TP

(52) he symble wyle god, and næfre nan yfel
he always desires good and never no evil

'he always desires good and never any evil'

(Ælfric’s Lives i.1.48)

(53) Leofre ys us beon beswungen for
dearer is us be flogged for
lare bænne hit ne cunnan
learning than it not know (INF)

'we would sooner be flogged for learning than not know it'

(Ælfric’s Colloquy 8)

(54) I wold haue be thens, yef I had mowte
'I would have been thence, if I had been able to'

(The Assembly 1951)

Thirdly, in standard PE one modal cannot follow another. However, it was possible in earlier English. Note that the Ormulum was written around 1200:

(55) ...patt I shall cunnenn cwemenn Godd

'that I shall have the ability to please God'

(Ormulum 2958)

(Ormulum 2958)

'The gloss is from Denison 1993, 310)

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16 Anderson (p.c.) has pointed out that it is difficult to reconcile the suggestion that pre-modals could combine with a perfect tense with the alleged absence of a perfect auxiliary in OE. This may be the reason for the later appearance of the example.
The emergence of TP

Fourthly, it could take a present participle like *mægende*, later *mowing*:

(56) Quiens *mæende* (Ælfric Gram. (z) 251 (OED))
    queens competent

Although in PE modals have no inflections for the person/number of their subjects, these verbs inflected according to their subjects, as seen in *ic cann, pu canst, we cunnon/ic maeg, pu meaht, (miht), we magon/ic wille, pu wilt, we willap*.

When all the above constructions fell out of use, these verbs are supposed to have become established as modals around the 15th or 16th century.

### 6.3.5 Lack of other auxiliaries

As mentioned above, in PE, *have/be* have a function as auxiliaries, but in OE they had no such function, at least at the earliest stage, and acquired the auxiliary function gradually.

#### 6.3.5.1 Have

In this section, I will take up the perfect construction. In line with the assertion made in the previous section, I will show that the grammaticalization of the lexical verb *have* as an auxiliary is the result of tense category maturation. There is agreement among historical syntacticians that the origins of the perfect construction “*have + past participle*” developed from the construction illustrated in (57):

(57) *Ic hæbe/hæfde hine gebundenne*
    ‘I have/had him bound’

In (57) *have* is a verb with full lexical meaning, *possess*. It is the head of its VP,
The emergence of TP

it is transitive, and its object is the NP *hine*. *Gebundenne* is a past participle of the verb *bindan*. However, as the ending -ne suggests, it was an adjectival participle, meaning ‘in a state of being bound.’ There is agreement between this adjectival participle and the preceding object *hine* in case, gender and number: accusative, masculine and singular. This participle does not form a constituent with the main verb *have* but with the preceding object *hine*, as shown by the non-adjacency of main verb *have* and the participle, an adjectival inflection on a participle and agreement between it and a preceding object. This construction has the argument structure of the verb *have*, not of the past participle. The external argument is a thematic subject, that is, possessor. If the participle forms a constituent with *have*, there must be agreement between the subject and the participle, but this is not the case:

(58) ..op þæt hie hine ofslægenne hæfdon
     until they him (m. Acc. sg.) killed (m. Acc. sg.) had
     (A Chronicle Parker MS. 48.4(755) )

Thus, the sentence (57) means that ‘I possess him in a state of his being bound.’ Therefore, *have* in OE was a full verb and not an auxiliary verb with little semantic content like PE perfect *have*.

Later, by the end of the eighth century the construction in which a past participle came after *have* such as ‘I have bound him’ began, although its occurrence was not frequent and the two forms coexisted for a while. As Anderson (p.c.) has pointed out, there are some examples in which *have* acted like an auxiliary before the eighth century. However, even in the examples he has cited, the -e inflection for the participle is present. It cannot be denied that there is a considerable difference between OE *habban* and PE *have*. In ME all adjectival inflections had disappeared apart from certain cases and the “have + past participle” construction was established, where the past participle formed a constituent with *have*. This analysis is supported by the adjacency of *have* and
The emergence of TP

the participle and the following facts. The construction has the argument structure of the participle, not of the verb have; the have perfect constructions were extended to subjects which cannot be possessors; and the have perfect became available for any lexical verb.

This construction acquired all the PE meaning, around early Modern English, although it is difficult to pinpoint when. The process described here is a typical example of the grammaticalization mentioned above. The lexical full verb have was grammaticalized as an auxiliary verb have enabling it to carry the tense feature.

6.3.5.2 Lack of be as a progressive auxiliary in OE

In PE, be is used as a progressive auxiliary. This progressive be also lacks real intrinsic semantic content and is used to carry tense/agreement features of Tense/Infl. Hence, if earlier English had no Tense/Infl, the progressive auxiliary be is expected not to have been attested. Our task here is to examine whether the progressive construction existed in the OE period or not. Although there is some divergence of opinion, the received view is that the progressive structure was not established as such in OE. There are a few pieces of evidence for this. First, the “be + -ende” form did not occur often in OE, although the present participle having the -ende/-inde ending, which had adjectival inflection morphologically, constituted a verbal complex form with beon/wesan. I argue that this -ende in the “be + -ende” form was not verbal, but an adjective, or at least, there is no strong evidence for its verbal use, hence this form “be + -ende” does not correspond to the current progressive form. Strang (1970, 350), leaning on Mossé (1938), states that the periphrastic verb forms may be said to have begun in the ninth century and this pattern remained peripheral in OE. In fact, the “be + -ende/-inde” form was not a very productive construction in OE, and is said to have most frequently occurred in translations of Latin. Denison (1993, 380) also says that its frequency was low in OE.
The emergence of TP

However, scarcity of examples cannot be decisive evidence. It is definitely necessary to give syntactic evidence, like the possibility of the -ende form taking objects as well. The putative OE examples are unevenly distributed. In *Orosius*, a translation of a Latin work, this expanded form is rather frequently used and in some examples, the -ende forms take objects:

(59) hio ...manigfeald geligre fremmende wæs
she many fornication doing was

(Orosius 22, 20)

‘she was doing many kinds of inappropriate intercourse’

However, most of the other OE examples are ambiguous, since -ende can be analyzed as adjectival, verbal, or nominal, i.e. as a deverbative agent noun (cf. Mitchell 1976). Consider the following examples:

(60) a. hi sind rihtwise and behreowsigende
they are right and repentant (*Ælfric* Hom I 342.13)

‘they are right and repentant’

b. gif ... we...scinende beoð
if .... we shining are

(Ælfric*Hom I 118,6)

c. Swa se secg hwata secggende wæs laðræ spella
as the man brave saying was hateful tales

(Beowulf 3028)

‘As the brave man was a teller of hateful tales.’

In (60a) -ende is coordinated with an adjective and, hence it is supposedly adjectival, while the participle in (60b) is ambiguous. The (60c) example is apparently verbal since -ende takes an object NP. However, as the gloss shows, this participle is analyzed as a deverbative agent noun by many researchers (cf. Klaeber 1950, Visser 1963-1973, Denison 1993, 381).
The emergence of TP

Since decisive evidence for the (non)-presence of a progressive be is not available, I will leave this to future research. I follow the standard assumption that the progressive structure was not established as such in OE, but further close study is necessary to reach a conclusion, and I limit myself to suggesting that be was grammaticalized as an auxiliary from a lexical main verb.

We have observed that modal auxiliaries, do, and the auxiliaries have/be were all grammaticalized from lexical main verbs in OE. What made this grammaticalization possible is the emergence of a T-node under which modal auxiliaries are base-generated, do is inserted, and under which have/be are raised.

(61)

6.3.6 Separation

In section 5.6, we have observed that TP can be separated from VP in PE based on the evidence that VP together with tense cannot be fronted. Hence, if OE had a tense projection, it follows that this separation of T from VP should also have been possible. However, no such evidence is available for earlier English. In earlier English the notion of tense was so closely attached to the verb that it was impossible to separate them. However, examples with double tense marking, such as the following sentences were observed:
The emergence of TP

(62) a. Thalestris ...did wroot to kyng Alexandre in his manere
   Thalestris did wrote(past) to king Alexander in this manner
   (1387 Trevisa Higden (Rolls) I.155 (OED))

b. Ther myne did but smoked
   There mine did but smoked (past)
   (1460 Towneley Myst. (OED))

In each sentence there are two preterit forms: did and wroot, did and smoked. These examples are attested in the ME period, not in the OE period. Needless to say, this double tense marking is impossible in PE. The analysis of these examples will be left to future research. They may show the confusion involved in this transitional period, when do began to serve as a tense carrier\(^{17}\), while the notion of tense was still closely attached to the verb. At least, we can say that no evidence for the separation of T from VP is available in earlier English and that if a T-node were established as in PE, this double tense marking would not have happened.

6.4 Subject requirement

6.4.1 Introduction

In section 5.7 we have observed that the subject requirement in PE is a structural requirement due to the presence of a functional category T/I. What follows from this is that in languages without functional categories there is no subject requirement. This is indeed the case with OE. In this section, I take up impersonal constructions in OE and show that completely lexical-thematic languages can dispense with a syntactic “subject”. It is asserted in the literature that subjects are missing in impersonal constructions for some reasons, although

\(^{17}\) According to Ellegård (1953, 162), an auxiliary do was established as such around 1700.
The emergence of TP

the subject position is projected. However, I argue that "missing subjects" were not "missing", but simply reflect the non-universality of "subject", a syntactic device which was introduced late in the historical development of languages to satisfy structural requirements. Then, the demise of impersonal constructions and the emergence of subject provide a strong piece of evidence for category maturation.

6.4.2 The Non-universality of subject

As I have touched upon above, the subject has been considered a linguistic universal, even though it is very difficult to give a universal definition of subject. For example, Keenan (1976) attempts to provide a definition of the notion of "subject" which will enable us to identify the subject phrases of any sentence in any language. What he has done is give a list of 30 odd properties of basic subjects, but he mentions possible counterexamples to each property, demonstrating that it is almost impossible to give necessary and sufficient conditions of subjecthood. As Keenan (1976) admits, it seems that the subjecthood of an NP is a matter of degree in any one language, and subjects in some languages will be more "subject-like" than those of other languages.

The properties he lists are roughly divided into three groups, semantic, morphological, and syntactic. I will show that no approach works. First, I will examine the idea that subject is a semantic necessity, that is, subject is equated with the thematic role agent, or volitive actor, and is semantically necessary. It is not new at all to associate the notion of subject with the notion of agent or actor. Keenan (1976, 321) states that the basic subject normally expresses the agent of the action if there is one; and Gair (1976) asserts that subject equates with the agent or volitive actor. However, the equation of subject with the agent or actor does not work in some languages, perhaps, in any languages, as Anderson suggests. Keenan (op.cit.) raises counterexamples to his own assertion, saying that this property cannot be used to identify subjects of sentences in which there
The emergence of TP

is no agent, and sentences of this sort are numerous, for example, *John is tall*.

Gair (op.cit. 44) takes up colloquial Sinhala as evidence for his assertion. Colloquial Sinhala has active sentences which are distinguished from impersonal ones. The range of sentence types involved is the following: intransitives using intransitive action verbs, transitives, and causatives. In such sentences, the involitive optative morpheme (*-wi*, or *y*), signalling futurity (and commonly uncertainty) cannot occur with first person subjects, while the volitive optative morpheme (*-nnan*), signalling futurity (and commonly determination) occurs only with first person subjects. Gair asserts that in active sentences, allowing the appearance of the volitive optative *-nnan*, subject appears to equate with volitive actor, as the semantics of *-nnan* indicate. If this equation always obtained, that is, if subject and actor were completely congruent, the notion of subject would be redundant. This is allegedly the reason why the impersonal construction lacking volitive actor remains subjectless. However, as Gair points out, there are many counterexamples to this equation in Sinhala. One of them is the following (Gair 1976, 58):

(63) miniha lọrāyya dinaawi
man lottery win-wi

‘The man will win the lottery’

*Wi* attached to a verb is an involitive optative affix, so that it is not easy to consider *miniha* as a volitive actor. *Miniha* here is nominative, and accusative is not possible here. He admits that the equation of subject with volitive actor breaks down. Thus, the notion of subject is not necessarily associated with the notion of agent.

The association of subject with agentivity is reflected in more recent work such as Larson (1988, 1990) and Chomsky (1995), using VP shells, complex double-VP structures which consist of an outer vp shell and an inner VP embedded in it. The subject in a given construction is assigned the theta-role of Agent by the
The emergence of TP

abstract causative light verb of an outer vp, while other arguments originate within the inner VP.

Next, we will examine the morpho-syntactic evidence for subject: nominative case marking and subject-verb agreement. Although I associated nominative case with the subject conventionally in the DP chapter, if we examine the situation more precisely, more careful consideration is necessary for this association. The association of nominative case with subject is familiar. For example, a traditional grammarian, Sweet (1898, §129) explains that nominative case is a subject-case. Keenan (op.cit. 316) says that verb agreement is one of the properties which people have considered definitional of subjects. Although there is no doubt about this when we look at only PE, we face problems immediately if we look into languages like Hindi-Urdu. Invoking Keenan (op.cit.) and Kachru et.al. (1976, 79ff.), I will show how this does not work. Keenan admits that verb agreement fails to be a necessary condition on subjecthood since in many languages verbs agree with no NP e.g. Swedish, Sinhala, Chinese, Japanese and so on. Verb agreement even fails to be a sufficient condition on subjecthood since in many languages verbs agree with NPs in addition to subjects, e.g. Basque, Hungarian, and Georgian, etc. Furthermore, in a few languages verbs may agree with objects. For example, the verb in Hindi-Urdu agrees either with the “subject”, or with the direct object, or with neither. If the subject is unmarked for case, the verb agrees with it (i.e. agrees in gender, number, and person). If the subject is marked for case (i.e. followed by a postposition) the verb agrees with any other unmarked noun in the clause. If there are no unmarked nouns in the clause, the verb agrees with none and occurs in its neutral form. Hence, the generalizations in the framework of relational grammar:

(64) If an NP is a subject of a sentence, it agrees with the main verb of that sentence.
The emergence of TP

(65) If the main verb agrees with an NP, then that NP is the subject of the sentence.

are proved to be incorrect. If (64) were correct, the languages mentioned above would have no subjects, or they would have two subjects.

Nominative case marking is used not only for the subject NP (of finite verbs) but for a complement of a copula verb in PE. Before assuming that nominative case is for subject then more careful consideration is necessary. Although I have no space to go into details here, let me consider what was the function of nominative case in languages like Sanskrit, referring to Panini, or Ananthanarayana (1970). In Sanskrit, which is hypothesized to be another completely lexical-thematic language on my hypothesis, there were strong correlations between morphological case and semantic roles of NPs which were called karaka. The karakas, as Ananthanarayana (1970) also points out, correspond to semantically defined notions or deep cases in Fillmore’s (1968) sense, or rather close to the thematic roles in more recent frameworks. There are six or seven karakas: they are semantically defined as kartr (agent), karma (that which is primarily desired by the kartr, or the target of the action), karana (the means), sampradana (one whom the kartr has in view in the act of giving something, the recipient, etc.), adhikarana (the locus of the action), apadana (the starting point) and hetu (the causative agent). These karakas are morphologically realized as vibhakti (case forms). Panini assigns a primary

18 The assertion that Sanskrit is completely lexical-thematic is not yet fully justified. I will leave this to future research.

19 Anderson (p.c.) has commented that the thesis offers no theory of theta-roles. Although there is no unanimity among researchers, I assume Williams' "Theta theory" (1995); theta roles are semantic roles realized by arguments in relation to their predicate. Theta theory is a theory of argument structures and the realization of arguments.
The emergence of TP representation to each of the above karakas by one vibhakti, karma by dvitiya (accusative), karana by trtiya (instrumental), sampradana by caturthi (dative) adhikarana by saptami (locative), apadana by pancami (ablative). Some commentators of Panini, presupposing the existence of the grammatical subject, (although Panini himself does not use the term "subject"), suggest that kartr is represented by prathama (nominative), but this association is not quite right. The kartr (agent) is primarily represented by the instrumental case trtiya.

Nominative case in Sanskrit, i.e. prathama, is the unmarked, neutral case, which is not related to any particular karaka (thematic role). The nominative-marked NP is outside the projection of V. In Sanskrit clauses, the most closely related karaka to a predicate verb is usually not expressed explicitly. This karaka is the most closely related participant in the action or event described by a predicate verb and I call it "the primary karaka" for the sake of convenience. The primary karaka is automatically chosen and shown by the affix attached to a verbal stem. For example, if the affix -a is attached to a verbal stem, this -a indicates that the primary karaka is the kartr (agent). If the affix -ya is attached to a verbal stem, this -ya signifies that the primary karaka is the karman (the target of the action). If the affix -aya is attached to a verbal stem, this indicates that the primary karaka is the hetu (causative agent). This primary karaka does not need to be expressed as the NP argument, since it is already expressed by the affix attached to the verb. Consider the following example:

(66) (devadattah) odanam pac-a-ti
(Devadattah (Nom.)) ricegruel (Acc.) cooks (active)

(The parenthesis means this is an optional element.)

In (66) the primary karaka is kartr (agent), which is shown by the first affix -a attached to a verb stem pac. The second affix -ti (a personal ending) narrows this information down to singular and third person. If the speaker wants to give additional information about the primary karaka, it has to be expressed by the
The emergence of TP

neutral nominative case (*devadattah* in (66)), since the first case (= nominative) ending is added when there is nothing to be designated but the gender and the number of the nominal stem notion. See Thieme (1956, 2).

We have observed that in Sanskrit the nominative case, i.e. *prathama*, is the unmarked, neutral case, and outside the projection of a VP, since it is not related to any particular thematic role or *karaka*. Hence, the nominative case does not suggest the presence of a syntactic subject. I conclude that nominative case marking is not definitional of subjecthood in lexical-thematic languages like Sanskrit.

### 6.4.3 OE impersonal constructions

In this section, I take OE impersonal constructions as independent evidence for the non-universality of the subject in clause structure and the diachronic emergence of syntactic subject. In earlier English we find many examples in which subjects are “missing.” Subjectless constructions like impersonal constructions were used from the OE to ME period, although they constitute a marginal part of OE syntax, as Anderson (p.c.) suggests. An impersonal construction is one whose verb takes the third person singular inflection, no matter what NP arguments are present, and which lacks a nominative NP:

(67) a. norþan  sniwde  
from the north snowed

‘snow came from the north’

b. Siððan  him  hingrode  
afterwards him (Dat.) hungered

‘afterwards he hungered’

c. him  ofhreow  þæs mannes  
him was sorry the man (genitive)

‘he was sorry for the man’
The emergence of TP

d. him gelicade hire þeawas (A.Chronicle D 201.32)
   him (dative) pleased their customs (accusative)
   ‘he was pleased with their customs’

That is, verbs in earlier English had the potential for subjectless use, whereas no verb in PE may be used without a subject in an ordinary declarative clause.

Our first task is to clarify the nature of this missing argument. Let us return to the examples of earlier English. According to the discussion about missing arguments in early child English, there are four plausible possibilities for earlier English missing arguments: traces, pro, PRO and null NPs. I propose a fifth possibility: missing arguments do not exist in a given argument structure from the beginning.

Before discussing these possibilities, it is necessary to clarify the use of the term “impersonal” in the literature. The term “impersonal construction” has often been used in an ambiguous way by linguists. For example, even if the clause has a personal argument, the construction may be classified as impersonal:

(68) þam cynge licodon peran (Jespersen 1927,11.2,)
   the king liked pears

This sentence is a famous made up example which is used in order to explain the reanalysis process in which a former object became a subject. This sentence has a nominative argument and there is agreement between this NP and the verb. The crucial point of this reanalysis is that certain arguments formerly realized as non-subjects come to be realized as subjects of the verb. The given sentence is not a subjectless construction. However, other researchers use the term “impersonal” to designate subjectless constructions in which there are no nominative NPs agreeing with verbs. The constructions with which we are mainly concerned here are such subjectless constructions in which the verb has the third person singular form and there is no nominative NP controlling verb
The emergence of TP concord.

The missing arguments we are turning to now should also be differentiated from one other type of missing argument. We divide the missing argument constructions of earlier English into two types: (i) non-existence of the arguments from the beginning (ii) elision, as in (69) and (70):

(69) As for the defendant [he] was pardonyd of hys lyfe
      (Gregory’s Chronicle 202)

(70) se æðeling þæt þa sceawode, ... o cwæð þæt..
      (King Alfred’s Orosius (ed. by Sweet) 54/29-30)

‘the prince then looked at it, and [he] said that ...’

In (69) the third person pronoun is elided, and the reference is easily recovered from the antecedent in the same sentence. In (70) two clauses which have the same subject are co-ordinated, and the second subject is elided as in PE. The interpretation of the omitted arguments is often recovered either from the same clause or sentence or from the discourse or extralinguistic context, and in most cases, the missing arguments have definite reference.

Of relevance to us is the construction type (i) illustrated by (67); i.e. where no nominative argument is present. Is there any possibility that the missing subjects in (67) are PRO, pro, or the implicit arguments? The answer is “no”. Missing arguments in earlier English lack definite reference; hence they cannot be pro. They cannot even be PRO. If we try to recover the missing subjects, we cannot. There is no antecedent or controller in the same linguistic or extralinguistic context. For example, in a sentence like (67a) it is impossible to pick out an agent who causes the situation in which snow is falling. In a sentence like (67d), although the object of the pleasure is shown in the accusative NP hire peawas, there is no agent which is supposed to occur in the subject position. The dative NP him is not an agent at all, but is in a situation where he feels some pleasure, irrespective of his intention. Him is not a syntactic subject, either. Some might
The emergence of TP" say that in the case of (67c) the genitive NP expressing the cause of the sorrow functioned as the subject semantically. However, there is no evidence that it is a syntactic subject.

Likewise, there is no possibility of the missing subject being an implicit argument, since an implicit argument almost always has arbitrary interpretation, like “anyone”. However, in impersonal subjectless constructions such subjects are never even implicitly expressed. Needless to say, there is no possibility of its being a trace, since no movement is involved.

6.4.4 Previous studies on impersonal constructions

We have shown that earlier English clause structures had the potential for subjectless constructions and have rejected four possibilities for missing arguments. Before proposing our own hypothesis for the construction, let’s look through previous studies on “impersonal” constructions.

Many historical researchers have been deeply concerned with impersonal constructions and their evolution, although there has been no agreement among them about even what the impersonal constructions are. Two streams have been dominant so far; one involving reanalysis, one not. The former is van der Gaaf’s (1904) and Jespersen’s (1927) idea that non-subject NPs of impersonal constructions were reanalysed as subjects in the ME period under the pressure of the fixed SVO word order. Thus, changes in word order are the ultimate cause of reanalysis. The process of reanalysis is shown below using the repeated example:
The emergence of TP

(71) a. þam cynge licodon peran
dative plural nominative plural
b. the king likened pears
c. the king liked pears
d. he liked pears

In (71a), according to Jespersen, the NP *peran* is unambiguously the subject, since there is agreement between the verb and the NP. Thus (71a) is an OVS order. In (71b) the dative case on the initial NP is lost, but it is still an OVS sentence because of the plural ending of the verb. (71d) is an unambiguous example of an SVO sentence thanks to its pronoun form *he*. The (71c) stage can be analysed either as OVS or as SVO, with the latter becoming the more natural analysis under the influence of the rigidification of SVO word order. This stage shows how the reanalysis of the impersonal constructions came about.

This syntactic shift is accompanied by a semantic shift. The verb has undergone a change of meaning from “cause pleasure to someone” to “receive pleasure from someone/something”. Jespersen regards the OVS sentence as the original impersonal construction. In this case, “impersonal” means that the subject, although it is present, is not a human being, and it does not mean that the construction is subjectless. Briefly, the object of the impersonal verb which lost its case marker was confused as the subject under the pressure of fixing SVO word order.

The question arises why an OE speaker used *him/hine hyngrep* ‘he is hungry’ with the animate NP in the dative or accusative instead of *he hyngrep*, and an ME speaker should prefer the latter construction with the animate NP in the nominative. Jespersen (1927) suggested that the greater interest in human beings than in things caused the name of the person to be placed before the verb. However, the question why ME people took more interest in person than in things remains. One possible explanation may be given in terms of “empathy”, or “point of view” in a more familiar term, as is discussed in Kuno and Kaburaki.
The emergence of TP

(1977) and Kuno (1987). More precisely, empathy is the speaker’s identification with a person/thing that participates in the event or state that he describes in a sentence. The empathy relationship can explain why some sentences are judged unacceptable, which is otherwise mysterious. However, although the empathy-based theory may be promising, it still leaves the reason for the historical development unresolved.

Tripp (1978) attempted a psychological explanation for the demise of the impersonal construction. He argues that “the loss of the impersonal constructions correlates with the rise of the modern ego-centered personality” and “ambiguous forms and, reanalysis, and SVO pattern pressure cannot be used to explain the loss of impersonal constructions”. These are all results of “the same psychological force”. “These changes occur in the face of the same Renaissance rationalism”. Although this explanation is intriguing, it is arbitrary.

The reanalysis shown in (71), which is adopted by Lightfoot (1979) and many other researchers, poses a number of problems. First, as we have mentioned before, the above example is a made up one. As Allen (1986, 396-7) and others point out, the (71a) type sentence, although it does occur in OE, is very rare. Allen says that she finds no evidence that this stage ever actually existed with the verb *like*. Secondly, those who adopt this reanalysis theory assume that in OE the basic word order is SOV, so the underlying structure of (71a) is the following:

\[(72) \text{peran} \quad [\text{VP } \text{ham cynge licodon}]\]

subject object verb

A rule of NP postposing moved the subject *peran* to the final post-verbal position. In the ME period in which the canonical word order is SVO, the underlying structure was:

\[(73) \text{peares} \quad [\text{VP } \text{likeden the king}]\]

subject verb object
The emergence of TP

A surface sentence like (71c) could be derived from (73) by NP postposing of *pears* followed by NP preposing of *the king*. Such a derivation is overly complex or rather too opaque. According to the Transparency Principle of Lightfoot (1979), if the derivation of a certain construction exceeds a certain degree of complexity, reanalysis will occur to resolve the structural opacity.

This reanalysis has also been objected to on theoretical grounds by many scholars. Under this analysis, the NP that is moved away from a subject position leaves a trace. This trace is replaced by another NP moved from VP in (71c):

\[
(74) \quad \begin{align*}
\text{a.} & \quad (S) & O & V & S \\
& & ti & O & V & Si \\
\text{b.} & \quad (S) & V & O & S \\
& & ti & V & O & Si \\
& & Oj & V & tj & Si
\end{align*}
\]

These movements violate syntactic principles, such as the theta criterion, and the Empty Category Principle (ECP).

Lightfoot (1981) admits that this analysis is not sustainable since it violates the Trace Erasure Principle, by which the trace of a moved NP can only be erased by a designated morpheme like expletive *there* or *it*. In his revised explanation, he says that the language learner who had SVO as his canonical word order, analyses (71c) as base generated SVO. This syntactic reanalysis involved a semantic shift from a causative meaning “cause pleasure to” to a receptive meaning “receive pleasure from”.

However, this new revised formulation does not solve the problem. The derivation of the (a) construction is still problematic, because of the ECP, as we have pointed out before. Furthermore, Lightfoot’s analysis falsely predicts that one speaker would never use the verb in question in both senses, i.e. with a causative meaning and with a receptive meaning (see Fischer and van der Leek 1983, 342-3). However, Chaucer, for example, sometimes uses sentences such
The emergence of TP

as it likes her 'it pleases her', and at other times sentences like 'she likes it':

(75) An example with causative meaning of liken:
   a. If my service or I may liken you (Ch T&C; Robinson 1957, 394)
      'If my service or I can please you'
   An example with receptive liken:
   b. And, for he was a straunger, somewhat she
      Likede hym the bet.... (Ch LGW Robinson 1957, 501)
      'And, because he was a stranger, somewhat she liked him all the better'
      (Cited from Fischer and van der Leek 1983, 342)

A more serious defect of this analysis is that it cannot account for the fact that many impersonal verbs could occur in "personal" constructions in which the experiencer NP is in the nominative not in the dative in OE.

Fischer and van der Leek (1983, 337) criticize the reanalysis theory. Rather than assuming with Jespersen and others that the semantic shift occurred in tandem with the syntactic shift, they say that in OE both meanings "causative and receptive" existed side by side, systematically associated with different syntactic constructions. The loss of the impersonal constructions did not involve a change in the meaning of the verb but instead the loss of one of the two meanings and the loss of one of the constructions. According to them, OE impersonal verbs are two-place predicates, with an experiencer and a cause argument. The experiencer is typically an animate NP and in the dative, the cause is either an NP, typically in the genitive, or a clause but not both. The lexical entry for an OE impersonal verb is the following:
The emergence of TP

(76) \[
\begin{aligned}
NP &\quad NP \quad (S') \\
NP: &\quad \text{DATIVE} : \theta\text{-role: experiencer} \\
\{ &\quad \text{NP: GENITIVE} \\
S' &\quad \} \quad \theta\text{-role: cause} \\
\end{aligned}
\]
(S' indicates a that-clause)

This single entry accounts for all the constructions. Members of the class of impersonal verbs optionally assign the lexical case specified in their lexical entries, while non-impersonal verbs obligatorily assign the lexical case for which their entries are marked. When NP arguments receive lexical case from the verb, it derives an impersonal construction like (67c) which is repeated below:

(77) him ofhreow ðæs mannes \((ÆlfricHom. I 192. 16)\)

\(\text{to him(dative) man (genitive)}\)

If the verb does not assign the lexical case genitive to a cause NP, this NP undergoes NP movement into the subject position and structural nominative case is assigned. This process derives the following pattern:

(78) \(\text{NP(cause) NP(experiencer) V( causative)}\)

\(\text{nominative dative}\)

(79) ða ofhreow ðam munecce ðæs hroflian mægenleast

\(\text{was sorry monk (Dat.) leper's feebleness(Nom.)}\)

\((ÆlfricHom. I 23.336.10)\)

‘then brought pity to the monk the leper’s feebleness’

(The gloss is from Denison 1993, 63)

If the experiencer NP does not receive lexical case from the verb, this NP moves into the subject position and receives structural nominative case from Tense. This derives the following pattern:
The emergence of TP

(80) NP(experiencer) NP(cause) V(receptive)
nominitive genitive

(81) se mæsse-preost þæs mannæ ofhreow
priest (Nom.) man (Gen.)  (Ælfric's Lives of Saints II 26.262)
'the priest felt pity because of the man'

This analysis is in sharp contrast with the traditional account, according to which the pattern of (76) or (78) was basic in OE and was reanalysed as pattern (80). Instead, all the three patterns co-existed side by side already in OE.

The “single entry” approach relies on an optional lexical case assigning system in earlier English. In late ME the English language lost its ability to assign lexical case in the base due to the breakdown of the morphological case system. This change greatly affected the impersonal constructions. In PE case-assigning categories cannot assign more than one case through government. Only one of the two NPs that impersonal verbs subcategorized for in OE/ME can receive case from its verb. The impersonal verb can no longer accommodate two NP arguments. This means that the pattern (76) was no longer sustainable and consequently impersonal constructions like (77) were lost, while the patterns (78) and (80) survived.

The analysis of Fischer and van der Leek has some merits. First, they assume that the OE impersonal clause is essentially a subjectless construction, since there is no θ-role available for a subject NP. Their underlying structure for OE impersonal constructions is the following:

(82)
The emergence of TP

The two internal NPs are unordered with respect to each other. The pattern (82) is an OOV pattern.

Second they associate the semantic difference with syntactically different structures. When the verb has a receptive meaning, it implies that a theta-role suitable for a subject NP is available.

However, serious problems remain. Their single entry cannot deal with impersonal constructions in which there is no NP argument or in which there is only one NP argument such as (67a) and (83):

(83) Gyt me tweonað (ÆlfricHom. I.4.72.30)

yet me (Dat./Acc.) doubts
‘I am still in doubt’

(The gloss is from Denison 1993, 68)

In their single entry system, at least one NP argument must be projected in the impersonal construction. Also why do the OE impersonal verbs optionally assign lexical case? What decides when the same verb assigns only one case to NP and assigns two cases in another instance?

Fischer and van der Leek (1987) devised a new theory of the semantic basis of case assignment in order to account for the impersonal constructions, criticizing earlier accounts including their own. In their new approach, the lexical entry of a verb only specifies the possible theta-roles associated with it, (and whether these theta-roles are actually assigned by the verb). The NPs involved in the impersonal constructions can have one of three different statuses: subjective (sister to a tensed Infl and in the nominative form), objective (sister to V and in the accusative form), or adverbial (sister to V or P and in the genitive or dative form). Adverbial NPs are not arguments of a verb and therefore do not receive their theta-role from the verb. They are not participants in the impersonal constructions. Their theta-roles are inherently associated with their surface case forms dative or genitive.
Their new approach can deal with one situation which could not be dealt with before, i.e. impersonal constructions with no NP arguments or one NP argument. However, to account for the loss of the impersonal constructions, they went back to a reanalysis account.  The change in word order from SOV to SVO caused a change in the directionality of government from left to right. The decay of case inflections caused the loss of dative or genitive case on NPs. These two factors caused a change in the lexical entry of the verbs from an impersonal type to a transitive type. Although their new approach may be fruitful, it is regrettable that they appealed to the once discarded theory and their account requires NP movement to derive the relevant structures.

The final analysis I have looked at here is Anderson's (1986) (1988). As I have touched on in chapter 1, criticizing Fischer and van der Leek (1983) and giving the distinction between true impersonals (genuinely subjectless) and quasi-impersonals (with hit subject), he has argued that subcategorization frames should be formulated in terms of θ-roles alone, and the θ-roles characterize the structures into which predicates are inserted. Other properties are predictable from this information and its interaction with factors not limited to particular subcategorization frames (1986, 176). The alternation between nominal and sentential clause is a general property of cause arguments, while the selection of dative or accusative case for the experiencer shows sufficient generality for the relationship between Case and θ-role. Then, the subcategorisation frame (76) is redundant and, given the thematic roles of the arguments of a verb, the surface forms are predictable. Based on this position, it follows that the subject position was not always projected in earlier English. “The distribution of subjecthood is allowed for, without recourse to empty slots, if initial structures do not contain subjects or the configurations that define them, but subjecthood is assigned in the syntax derivatively, and optionally in the case of verbs taking such arguments. Subject-assignment is derivative and, indeed, in the case of true impersonals in OE optional” (1986, 173, 176). His claim is very insightful and suggests that my claim that the subject position was not always projected in earlier English is not
The emergence of TP implausible.

6.4.5 My hypothesis

We have looked at previous discussions of impersonal constructions and have shown that many of the explanations, except Anderson’s, do not work. Here we will discuss the issue from a different point of view.

Why did earlier English and why do early child English clauses have the potential for subjectless use, while PE clauses have no such potential? Since there is no possibility of missing arguments’ being empty categories or implicit arguments, we must search for a new possibility.

Although many proposals have been made so far, there seems to be not much difference among them in that in each the subject positions are projected even though they are not filled by overt elements, except Anderson’s work mentioned above. I propose, although tentatively, that unlike in PE the subject positions were not always projected in earlier English. I will now examine this proposal in some detail.

My hypothesis is the following: just as the whole nature of early child language is lexical-thematic, so too is earlier English, although it is not purely lexical-thematic, compared with much earlier languages like Sanskrit. Only arguments which are required by the meaning of the predicate have to be syntactically realized; so the subject position was not always guaranteed. If an argument which should carry the agentive theta role is not required by a given predicate, the subject which should appear in the nominative case need not be realized. Hence, the subject position need not be projected. The impersonal construction is one instance of this situation. I have cast doubt on the association of the agentive theta-role and nominative case earlier in footnote 12 in chapter 3. I will return to this in the next section.

Let’s consider the semantics of impersonal constructions once again. As we touched on before and as McCawley (1976) suggests, the impersonal construction
The emergence of TP

expresses a situation in which a human being if any is unvolitionally/unself-controllably involved. That is to say, there is no agent who is to receive the nominative case in the morpho-semantic-based case system (see Osawa 1994). The most typical example is provided by a weather verb like snow, or rain, etc. There is neither agent nor experiencer in the situation where it rains or it snows. As Fischer and van der Leek (1987) suggest, there is no participant involved in the situation. Therefore, there is no argument involved in the lexical entry of the verb. Gaaf (1904) enumerates the verbs which can occur in impersonal constructions, and they are shown below according to the classification by McCawley (1976, 194):

\[(84) \quad \text{i. non-intentional sensory and mental expressions} \]
\[\text{þyncan ‘seem’, mætan ‘dream’} \]
\[\text{ii. emotional experiences} \]
\[\text{eglian ‘be in trouble’, hreowan ‘feel sorrow’} \]
\[\text{iii. physical and biological experiences} \]
\[\text{hyngrian ‘be hungry’, þyrstan ‘be thirsty’} \]
\[\text{iv. need/duty/obligation} \]
\[\text{neden ‘be necessary’} \]
\[\text{v. (inalienable) possession/existence} \]
\[\text{lakken ‘be wanting’} \]
\[\text{vi. happenstance} \]
\[\text{gebyrian ‘happen’} \]

In the morpho-semantic-based case-system, I assume that the theta role "experiencer" is systematically associated with the dative case, although experiencers also can appear as accusatives and nominatives. This association of dative with experiencer is suggested in, for example, Hopper and Thompson (1980), Hawkins (1986) and Taylor (1991, 211).

How can we explain the existence of personal constructions using the same
The emergence of TP verb in OE? Here again, the semantic based account is available. The verbs used in the personal constructions have different meanings from those of the verbs used impersonally. Impersonal verbs have a causative meaning where no agent is involved, while the personal verbs have a receptive meaning in which the person behaves somehow like an agent. Hence, apparently similar verbs take different syntactic structures according to their different meanings: that is, both meanings existed side by side. Therefore what happened was not the reanalysis of one construction based on people's confusion.

The proposal I have made here has significant implications for the grammatical system of earlier English. First, it follows that there was no EPP in earlier English: the syntactic structure of earlier English is completely thematically determined. Secondly, the notion of subject was not established semantically and syntactically at the earliest stage of English and perhaps not even at some later stages. In the next section, we will continue the discussion of this proposal further.

6.4.6 PE clause structure vs OE clause structure

6.4.6.1 PE clause structure

We have observed that OE lacked the syntactic category of tense. Here we discuss how OE clause structure was constructed generally and the difference in clause structure between PE and OE. First, I will see how the clause structure of PE is determined, invoking some of the relevant literature.

One of the most important principles concerning PE clause structure is the Projection Principle. The Projection Principle says that syntactic structure is determined by lexical information. The lexical information concerned here is the thematic structure of the predicate, i.e. the number and types of arguments which the predicate takes. The arguments are the participants minimally involved in the activity or state expressed by the predicate. The argument
The emergence of TP structure of the verb derived from its meaning determines which elements of a certain verb are obligatory. The semantic relations between the verb and its arguments are referred to in terms of thematic roles or theta roles. Arguments require thematic roles. For example, the verb kill would be given the lexical representation (85):

(85) kill : verb [Agent  Patient]

How many arguments are required and what theta roles are assigned are specified in the lexical representation of a given verb. However, which NP arguments are realized as the subject or object is not determined by the lexical representation. There is only a loose correlation between theta-roles and syntactic functions such as subjects or objects. For example, if there is an argument with the theta role [agent], it will often be realized as a sentence subject with nominative case:

(86) Maigret killed Poirot.
    agent patient

However, in the following examples:

(87) The ball rolled towards the pigsty.
    theme goal

(88) She suffered a stroke. 20
    patient

(89) I believe him to have killed John.

The argument with the theta role “theme” can function as the subject in (87): in (88) nominative case is assigned to the patient of the action, not the agent, and the

20 Anderson (p.c.) has suggested this example (88).
The emergence of TP

patient is the subject; and in (89) the semantic agent of the action is assigned accusative.

It is not clear which NP argument should be realized as subject of the sentence and what determines this. Nevertheless, the subject position of a sentence must always be filled, i.e. sentences, or rather clauses, must have subjects. This structural requirement is not specific to individual lexical items, but it is a general grammatical property of all clauses. Independently of the argument structure of the main predicate, it is a general property of sentences that they must have subjects. This is known as the Extended Projection Principle (EPP), as mentioned before. Given this, it is not implausible to say that in PE lexical information only partially determines syntactic structure.

According to Burzio's generalization, not all predicates have an external argument. A verb which lacks an external argument fails to assign accusative case. A verb which fails to assign accusative case fails to theta-mark an external argument. This type of verb includes raising verbs, passive verbs and unaccusative verbs. But in PE, the subject position must still exist. Why is this so? It is not due to lexical reasons, or to semantic reasons; the only reason is a structural one.

The EPP is a principle regulating syntactic structure which applies at all levels of syntactic representation: clauses must have subject ([Spec, IP]) positions at all syntactic levels. However, the subject requirement is derived from a deep-seated principle which requires the syntactic saturation of obligatory functional features, as I have discussed briefly before. Case features obligatorily assigned by a case assigner (in the case of nominative case this is the functional head I) must be syntactically saturated (i.e. discharged onto an appropriate constituent projected into the syntactic structure of the sentence). If there is no argument to receive those discharged features, a dummy subject or expletive is necessary to receive them:
The emergence of TP

(90)  a. It is easy to read this book
       b. *Is easy to read this book

(91)  a. I don’t consider [it easy to read this book]
       b. *I don’t consider [safe to leave]

We might assume that the subject it is required in these example in order to receive the nominative case discharged by is in (90), and the objective case discharged by consider in (91). Looked at from this point of view, the “subject requirement” in adult grammars of English is merely a requirement for certain functional properties (in this instance, case properties) to be discharged onto an appropriate syntactically projected constituent. But if subjects are required in the syntactic structure of sentences like (90) and (91) merely to satisfy case requirements, then it follows that there would be no such requirement for clauses to have syntactically projected subjects in a caseless language. The existence of a functional head I is essential for the subject requirement. Thus, the EPP imposes the condition that the [Spec, IP] position must be generated, although this position need not be filled by overt elements. In that case expletive elements which are non-arguments with no theta roles are required to fill in this subject position.

One more important system which sustains the EPP is the system of structural case. In PE, there are two kinds of abstract case: structural case and inherent case. Structural cases, nominative and accusative, are not associated with thematic roles. They are dependent on purely structural relations. The structural relation “government” is a sufficient condition for structural case-marking. Structural cases are assigned by V, P, and tensed I. Nominative case is assigned automatically by I to a position which is structurally determined and must be discharged onto an appropriate constituent projected into the syntax.

Hence our earlier assertion that information from the lexicon only partially determines the syntactic structure is confirmed. Structural case is blind to thematic relations.
The emergence of TP

6.4.6.2 OE clause structures

We have seen how clauses are constructed in PE. The argument structure and the theta grid of the predicate determine the minimal composition of a sentence. However, information from the lexicon only partially determines the syntactic representation. Thanks to the established syntactic case system which is not sensitive to thematic relations, the subject position is required just as the locus for the saturation of functional categories (case in this instance). Therefore, all clauses have subject positions.

On the other hand, assuming that earlier English tended towards being lexical-thematic in nature, only arguments which are required by the meaning of a predicate must be syntactically realized. A constituent was licensed to occur in a given A-position only if it was assigned an appropriate theta role. Only theta marking was a licensing condition for a constituent. Hence there was no EPP in a lexical-thematic language like OE. A subject is not necessary a priori, because a subject is a purely syntactic element which is not always associated with a particular thematic role. The requirement that there be an external argument or subject is the result of the historical “maturation” of functional categories, specifically the tense category. The appearance of TP, not the notion, “tense” makes the subject obligatory.

However, as I have suggested before, compared with earlier language like Sanskrit, OE is a rather young language and hence, it is not purely lexical-thematic, so many apparent counter-examples against my main claims are available in OE. The difference between OE and purely lexical languages is that in the former the nominative-marked NP was incorporated into the projection of a Verb. The association of nominative case and agentive theta role developed to some extent due to the demise of morphological case as seen e.g. in the syncretism of dative and instrumental case. This difference in clause structure can be described in terms of configurationality. If the clause structure of purely lexical-thematic languages is described as a flat structure, that of OE is a “half-
The emergence of TP flat” structure. I will discuss this issue in more detail later in this chapter.

The clause structure of earlier English is exhausted by the VP. The clause consists of the maximal projections of the verb and its arguments. There were no functional projections: no IPs, or TPs, no AgrSs, no DPs, and no CPs. There were no asymmetries between subjects or external arguments and objects or internal arguments. All the arguments are internal and there was no difference in status between arguments; they are all required by the predicate depending on its meaning. If the meaning of the predicate does not require an agent, which should be realized as a nominative NP, the clause structure of a given verb lacks the nominative argument NP. This is called a subjectless construction. It follows that a subject is not necessary a priori, and the requirement that all sentences should have subjects is a later development. I claim that the external argument, or subject requirement, is the result of the historical “maturation” of functional categories. The appearance of IPs, or AgrS categories make the subject position obligatory.

The idea that the clause structure of earlier English, or rather earlier languages, is exhausted by the VP is suggested by Meillet (1937, 358 -359), although his argument is not exactly coextensive with mine:

Son (= la phrase verbale) seul élément essentiel et constant est le verbe; en effet le verbe indo-européen comprend l’indication de la personne et du nombre, et se suffit: lat. uentio, uenis, uenimus, etc., peuvent constituer chacun une phrase entière.

De même aussi les verbes dont le sujet était une personnalité divine plus ou moins définie ...: c’est peut-être l’origine de la plupart des verbes impersonnels qui, dans les langues indo-européennes, n’ont pas de sujet exprimé.

Le verbe peut être déterminé par des noms à divers cas: ...ou par des adverbes: ou enfin par des préverbes qui ...servent à la fois à déterminer le verbe et le nom complément du verbe et qui ont été rapprochés tantôt du
The emergence of TP

verbe et tantôt du nom, prenant en ce dernier cas le rôle de prépositions. ...

Les déterminations ne sont pas « regies » par le verbe. Les préverbes sont des mots autonomes qui peuvent être juxtaposés à un verbe et à un nom, mais qui peuvent aussi s’en trouver distants d’une manière quelconque et dans des proportions quelconques. Le cas auquel sont mis les compléments ne dépend pas du verbe, mais seulement du sens à exprimer. ... Chaque mot a la forme que demande le sens à exprimer....

The above passages can be summarized as follows: the essential and constant element of a verbal sentence is a verb only and in fact, the verb of Indo-European includes the expression of person and number properties, and the verb with morphologically realized person and number properties is a self-sufficient system. This also explains the origin of the impersonal constructions in which subjects are not expressed. ... A verb can be modified by nominals in various morphological cases, by adverbs or by preverbs. This modification cannot be structural, or cannot be something like “government” by the verb. The morphological case by which the complements of a verb is realized depends not on the verb, but solely on the meaning to be expressed. Each word has a (proper) form to express the meaning....

My hypothesis nicely solves all the problems involved in the impersonal constructions. First, it deals with constructions containing no NP argument as well as those with fewer than two arguments, because the raison d’être of arguments is their association with the meaning of the predicate verb. Hence, if the semantic functions of arguments are compatible with the meaning of a predicate verb, additional arguments are possible.

Secondly, it explains why the apparent same verbs could occur in personal constructions. Syntactic structures are based on the meanings of the predicate verbs, and those verbs have different meanings. Thirdly, my analysis is based on a change in the case system from a semantically based case assigning system to a syntactically based case assigning system. So, we do not have to resort to ad hoc
The emergence of TP

explanations such as the optional case assigning of impersonal verbs. Fourthly, my analysis does not resort to the intriguing but rather arbitrary explanation using human psychology, or introducing Renaissance rationalism. It is very difficult to give a plausible explanation for why all the people in ME came to confuse one construction as another at the same time.

Lastly, the most important thing is that my hypothesis shows that the change of impersonal constructions was within the norms of changes in the whole clause structure of earlier English. The impersonal construction was not a deviation from the norm. It was an example of ordinary syntactic realization. All the facts about the demise of impersonal constructions match with the whole diachronic change. Thanks to the rise of functional categories, the clause structure of English changed from VP to TP/IP or AgrP.

7 What triggered the emergence of TP?

7.1 Introduction

My main claim in this chapter is that there was no TP/IP in OE or in earlier stages of other languages. Hence, the functional category TP/IP emerged at a certain stage in the development of the English language. In the previous sections, I argued that there was no TP in OE, giving several kinds of evidence, although the demonstration may not be conclusive. In this section, I concentrate my discussion on what caused the emergence of TP/IP in English. Why was the functional projection TP/IP introduced in English?

The core of my answer to this question is that the necessity of temporal interpretation of the embedded clause triggered the structural, i.e. syntactic, realization of tense as a functional category. Adopting Enç’s (1987) analysis for the temporal interpretation of finite sentences, I will show that the development of hypotactic structures, some of which had reached the stage of embedded
The emergence of TP structures triggered the structural realization of tense in the clause structure.

7.2 Proposal

In section 2, we have seen that VP has an E-role universally, and the E-role must be bound for semantic well-formedness. In the previous section, I have observed that in OE temporal affixes on verbs bound the E-role and in PE the E-role is bound by a T/I head. There is a strong parallelism between DP and TP/IP in their historical development in that syntactic functional categories emerged to take over the task which had been done morphologically before. However, unlike the case of DP, where the demise of morphological case triggered the emergence of DP, there is a potential problem in that PE still has temporal affixes on verbs. So, I cannot postulate the demise of (temporal) verb morphology as the main factor which triggered the emergence of TP/IP. Invoking the Anchoring Conditions of Enç (1987), I propose that the introduction of embedding was the main cause of the emergence of TP/IP in English. The demise of verb morphology did play some part in the emergence of TP; in particular, the gradual desuetude of the subjunctive mood, which was used to express wishes, commands, conditions, conjectures etc., and which was morphologically realized in OE, led to a much reduced system. Compare the conjugation of a typical strong verb in OE with its PE equivalent:

(92) The conjugation of a strong verb helpan (help) in OE

<table>
<thead>
<tr>
<th>Present System</th>
<th>Indicative</th>
<th>Subjunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ic (I)</td>
<td>helpe</td>
<td></td>
</tr>
<tr>
<td>þu (you)</td>
<td>hilpst</td>
<td>singular</td>
</tr>
<tr>
<td>he/heiro/hit (he/she/it)</td>
<td>hilpð</td>
<td></td>
</tr>
<tr>
<td>we/ge/hi (we/you/they)</td>
<td>helpað</td>
<td>plural</td>
</tr>
</tbody>
</table>
The emergence of TP

Preterit System

<table>
<thead>
<tr>
<th></th>
<th>Indicative</th>
<th>Subjunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>ic (I)</td>
<td>healp</td>
<td></td>
</tr>
<tr>
<td>þu (you)</td>
<td>hulpe</td>
<td>singular</td>
</tr>
<tr>
<td>he/heo/hit (he/she/it)</td>
<td>healp</td>
<td></td>
</tr>
<tr>
<td>we/ge/hi (we/you/they)</td>
<td>hulpon</td>
<td>plural</td>
</tr>
</tbody>
</table>

Hence, *God us helpe* means 'I wish God to help us'.

Mood refers to a wide range of meanings, especially the speaker's attitudes towards the factual content of his utterance such as volition, probability, uncertainty, and obligation, etc. Earlier English had a distinct set of inflectional forms of a verb to express subjunctive mood. The deterioration of verb morphology made it almost impossible to express modality by affixation except in very few cases, so some other devices became necessary. Just as the emergence of a T-node made it possible to grammaticalize the lexical *have* as an auxiliary, so the grammaticalization of the lexical verbs as modal auxiliaries was made possible for the same reason. The meaning of the subjunctive came increasingly to be expressed by using the preterit forms of modals, and/or the auxiliary *have*. Hence, in PE the expression of modality is dependent on the Tense category and TP made possible the expression of modality in PE after the demise of the inflectional subjunctive.21

21 Needless to say, the modals are not the only device used to express modality in PE. Apart from lexical items which have modality as their inherent semantics, like verbs such as *seem*, modal adverbs such as *probably*, or modal adjectives such as *certain, likely*, modality can also be expressed by various combinations of them.
7.3 The temporal interpretation of finite clauses: Enç’s summary

7.3.1 Anchoring Principles

I will adopt a theory of tense which treats tense on a par with nominals, following Higginbotham (1985) and Enç (1987). I adopt Enç’s Anchoring Conditions for the analysis of the temporal interpretation of PE. In this section, a summary of her analysis, which will be relevant to the subsequent discussion is given.

How is the procedure of giving a temporal interpretation to the empty E position actually performed? Enç (1987) gives a detailed analysis of this mechanism, limiting her discussion to finite clauses, in terms of “Anchoring Conditions”. Tenses are taken to denote intervals and, as referential expressions, they bear an index. Tense being a relational element, the interval which it denotes can only be determined by reference to some other interval. Interval here corresponds to event time E in Reichenbachian (1947) terms.

In other words, tense is subject to an identification condition, which Enç calls the Anchoring Principle, which requires each tense to be anchored (Enç 1987, 643).

(93) The Anchoring Principle
   Each tense must be anchored.

(94) Anchoring Conditions
a. Tense is anchored if it is bound in its governing category, or if its local Comp is anchored. Otherwise, it is unanchored.

b. If Comp has a governing category, it is anchored if and only if it is bound within its governing category.

c. If Comp does not have a governing category, it is anchored if and only if it denotes the speech time.
The emergence of TP

Enç (1987) assumes that tense is located in Infl. A tensed Infl is either PAST or PRESENT universally. Enç adopts the definition of governing category proposed in Chomsky (1986): the governing category of an expression is the minimal CFC (complete functional complex) containing it and its governor, further assuming that the governor must be in the scope of a subject. That is, the governing category is the minimal domain that contains the element itself, its governor, and a subject that c-commands the governor. Enç deals exclusively with finite clauses. Let us see how these Anchoring Conditions work in the interpretation of tense.

A few further assumptions and some notation is given before defining the denotation of tenses.

(95) a. Where $\alpha$ is a past tense, $\beta$ is a Comp with a temporal index, and $\beta$ is the local Comp of $\alpha$, $\parallel \alpha \parallel$ is an interval $T$ such that every moment $t$ in $T$ precedes every moment $t'$ in $\parallel \beta \parallel$.

b. Where $\alpha$ is a present tense, $\beta$ is a Comp with a temporal index, and $\beta$ is the local Comp of $\alpha$, $\parallel \alpha \parallel$ is an interval $T$ such that $T = \parallel \beta \parallel$.

c. A Comp $\beta$ is the local Comp of a tense $\alpha$ iff $\beta$ governs $\alpha$.

(The vertical lines $\parallel \parallel$ denotes the semantic value of something in the middle. The interval is equal to event time and $\beta$ is speech time in Reichenbachian terms)

---

22 As Lyons says, "futurity is never a purely temporal concept; it necessarily includes an element of prediction or some related notion." (Lyons 1977, 677) "What is conventionally used as a future tense...is rarely, if ever, used solely for making statements or predictions, or posing or asking factual questions, about the future. It is also used in a wider or narrower range of non-factive utterances, involving supposition, inference, wish, intention and desire." (Lyons 1977, 816)
The emergence of TP

The tense of a matrix clause is governed by Comp. However, in matrix clauses, neither Comp nor T has a governing category. The matrix Comp is not in the domain of any subject, and it has no governing category. Therefore, tense does not have a governing category and cannot be anchored by binding. It can be anchored only if its Comp carries a temporal index and is anchored. Note that if a tense is anchored through its Comp, the Comp itself must be anchored. T can be anchored only if Comp denotes the speech time. Let us see how the temporal interpretation is given in the sentence (96a) with the structure as shown in (96b) and (97):

(96) a. John died.

b. [s, CompO [s NP[r PASTi VP]]]

(97) CP -S’

CompO S (=IP) <1*, E*>  

NP I’<1, E*>  

Infl VP <1,E>  

PASTi die

(CompO is a temporal index of a Comp, i.e. speech time and i is a temporal index of Infl. The time denoted by CompO is not identical with that of Infl.)

In (97) the empty temporal argument of the verb die, which is denoted as E in the angle bracket, must be bound and it is bound by Tense in Infl, that is by the past tense, hence the past event reading is given. This means that the interval denoted by tense (which corresponds to the event time) is taken to precede the interval denoted by Comp, i.e. the speech time. The same goes for a sentence in which the predicate verb is stative:
The emergence of TP

(98) Mary was in her office.

When matrix sentences show past tense, either eventive or stative verbs can occur
as the "predicate verb" and tense describes time prior to the speech time.

However, when we consider matrix sentences with present tense, problems
arise. In fact, the anchoring Conditions do not seem to apply to the case in
which the matrix predicate has an event verb with a present tense. Consider the
following examples:

(99) a. Mary is in her office.
    b. Mary sings.

It appears that on a default interpretation, only those sentences containing
stative verbs are compatible with a present tense reading. That is, the tense in
Infl is coindexed with Comp according to the Anchoring Conditions, and the
situation described by (99a) is taken to hold at speech time. However, the event
described in (99b) is not so interpreted. The time of Sally's singing doesn't have
to be simultaneous with the speech time. A generic or gnomic reading is
possible for sentences like (99b). And for Enç, only such a "generic"
interpretation is possible. The temporal interpretation of a matrix sentence with
an eventive predicate verb like (99b) seems not to be subject to the anchoring
condition. Enç (1985) proposes that eventive verbs differ from stative verbs in
that they are associated with a temporal argument which is generated within the
projection of the verb and must be bound. On the assumption that English
present tense sentences are tenseless (Enç 1991), in (99b), there is no tense to
bind the temporal argument of the eventive verb sing.

However, there are clear counterexamples to this assertion that English present
tense sentences are tenseless and that only a generic reading is possible. Some
present tense sentences with action verbs have a non-generic reading. Consider
the situation in which a magician actually opens the box on the stage:
The emergence of TP

(100) I open the box, and the pigeon comes out of this...

The tense in (100) is clearly anchored and has a definite reading. In other examples, such as stage directions, or the live coverage of some sports events, the commentators use a present tense, which has a definite reading and has a temporal location. Similarly, with "performative" verbs, the present tense denotes a time simultaneous with the speech time.

(101) a. I promise (you) to return this book tomorrow.
    b. I apologize to you for not coming yesterday.
    c. (I ) thank you for the nice present you gave me.
    d. I congratulate you on your success.

The sentences containing performative present verbs can have a definite reading. Hence, the assertion that English present tense sentences are "tenseless" is not always sustainable in the presence of such counterexamples. Accordingly, I assume that all finite clauses are tensed.

I assume further that all verbs, including statives, have the E-position universally, and that the present tense is anchored and can have a definite reading in English present tense sentences with eventive verbs.

7.3.2 Anchoring complement tenses

Enç’s (1987) Anchoring Conditions work best for the temporal interpretation of embedded finite clauses (cf. Enç 1987, 646). In complement clauses such as (102):

(102) John heard that Mary was pregnant.

there are two readings available: a "shifted" reading, i.e. the time of Mary’s
pregnancy is prior to the time at which John hears about it, and a "simultaneous" reading, i.e. Mary is pregnant at the time that John hears about her pregnancy. These two readings correspond to the two ways in which the embedded tense can be anchored. The embedded tense is governed by the lower Comp. Its governing category is the domain containing a subject with this Comp in its scope, namely the matrix IP. Since the embedded tense has a governing category, it can be anchored in two ways. One of them is anchoring through its Comp (Anchoring Condition 94 a).

The shifted reading is obtained if the embedded T is anchored through its Comp (embedded Comp). The lower Comp is governed by the verb, and its governing category is also the matrix IP. Therefore, it must be anchored by binding (Anchoring Condition 94 b). The lower Comp is bound by the matrix T (that is, has the same tense index) and, therefore, it denotes the same interval (past), i.e. an interval prior to the speech time. If the matrix Tense binds the embedded Comp, both Comp and the embedded Tense are anchored. The embedded T is evaluated with respect to its local Comp, and being Past, it must denote an interval prior to that denoted by Comp. Hence, the time of Mary's pregnancy is taken to precede the time when John heard about it. This shifted reading is shown in (103).

(103) \[ \text{CP} \text{Comp0} [\text{IP} \text{DP} [\text{PAST}i \text{VP} \text{V} \text{CP} \text{Compi} [\text{IP} \text{DP} [\text{PAST}j \text{VP}]]] \text{VP}] \]

Let us look at the structure in which the shifted reading (103) is given:
The emergence of TP

The process of anchoring the lower Tense is done in two steps: first, the lower Comp is bound by the matrix Tense, and it has the same interval Past (i.e. the time of hearing), and secondly, the time of the lower T is determined with respect to the local (i.e. lower) Comp. The speech time of the lower Comp is percolated from the matrix Tense and the lower Tense is linked to the speech time (the time of hearing) which is located in the lower Comp. Hence, the lower Tense is anchored.

The simultaneous reading is obtained if the embedded Tense is directly bound by the matrix Tense without being anchored via the lower Comp. Anchoring Condition (94a) says that Tense is bound in its governing category. If the embedded Tense is bound in its governing category, that is, bound by the matrix Tense, it has the same temporal index as the matrix Tense. In this case, it is taken to denote the same interval, i.e. the time of pregnancy coincides with the time of hearing. This reading is shown in (105) and the structure is given in (106) below:
The emergence of TP

(105) \[\text{CP Comp0} \ [\text{IP DP} \ [\text{PASTi} \ [\text{VP} \ [\text{CP Comp} \ [\text{IP DP} \ [\text{PASTi} \ \text{VP}]]]]]]\]

(106)

\[
\begin{array}{c}
\text{CP} \\
\text{M. Comp} \\
\text{IP} \\
\text{Tense}_1[+\text{Past}] \\
\text{VP} \\
\text{V} \\
\text{hearing} \\
\text{C. Comp} \\
\text{IP} \\
\text{binding} \\
\text{C. Infli} \\
\text{VP} \\
\text{Tense}_2
\end{array}
\]

Enc claims that these two readings are possible only if the embedded verb is stative. Otherwise, only the shifted reading is available.

(107) a. Mary found out that John failed the test.
   b. \[\text{CP Comp0} \ [\text{IP DP} \ [\text{PASTi} \ [\text{VP} \ [\text{CP Comp} \ [\text{IP DP} \ [\text{PASTj} \ \text{VP}]]]]]]\]

7.4 Proposal (in detail)

Here I will elaborate on my proposal that it was the introduction of embedding that caused the emergence of TP/IP in English. First, I point out that a further condition for semantic well-formedness is that the E-role must be associated with speech time. However, in main clauses this association is trivial, as is clear from the above observation. For the interpretation of a matrix sentence, only speech time (the context of utterance) and event time are necessary: i.e. in Reichenbachian terms, only S and E are needed. The speech time is the present
The emergence of TP

moment in main clauses and event time is expressed by the tense morphemes on
the verbs. Then, the presence of a functional projection T/I, or of a Comp with
a temporal index are not necessary for the temporal interpretation of the simple
matrix clause, i.e. sentences with no complement clauses.

If we read the Anchoring Conditions carefully, we will notice that no special
syntactic configuration is necessary for the temporal interpretation of a simple
matrix clause. The tense of a matrix clause cannot be anchored by binding,
because in matrix clauses, neither Comp nor T has a governing category.
According to the Anchoring Conditions (94), when Tense does not have a
governing category, Tense is anchored if its local Comp is anchored. If Comp
does not have a governing category, it is anchored if and only if it denotes the
speech time. T can therefore be anchored only if Comp denotes the speech time.
That is, the matrix Comp always denotes the speech time. No structural
requirement like the binding relation is required. The presence of a functional
projection in the clause structure is not necessary for the temporal interpretation.
The finite matrix clause has direct access to the speech time, or is always directly
linked to the speech time just because of its finiteness, even in the absence of a
Comp with a temporal index. The term finite (verb/clause) is defined as
carrying grammatically encoded, usually deictic, distinctions of time, although
some scholars, such as Wexler, have tried to redefine it. Indeed, speech time
generally has no independent morphological or formal realization in clause
structure. The finite form of a predicate verb suggests the presence of the
speech time for a matrix clause. The speech time and event time are enough for
the temporal interpretation of a matrix clause. This matches with existing
analyses of temporal interpretation. If we invoke Comrie (1981, 1985) which is
based on Reichenbach’s (1947) model, the temporal interpretation for absolute
tenses (present, and past) is specified by relating S (the moment of speech) and
E(vent time). For example, past is represented as “E before S”. Just the
information about the speech time and the event time is enough to give the
temporal interpretation. No further configurational information is necessary.

For simple clauses, that is, sentences with no embedding, there is only one temporal argument or E-role to be bound. As we have observed above, there are several ways of binding this E role, in addition to binding by a functional category Tense in Infl. In OE the temporal morphemes which were directly attached to verb stems satisfied the structural requirement (i.e. government) for binding the E-role and hence could bind the E-role:

(108) OE VP<E*>  
  \   \  
  V<E> affix  

Since this is a morphological relation, this does not violate the principle of lexical integrity whereby syntax has no access to the internal structure of words. Moreover, since in OE there was no need for recourse to embedding, no other special configuration was required for the temporal interpretation. Hence, in OE there was no need for a tense to constitute an independent projection in clause structure.

The ME period saw the introduction of embedding, that is, where a clause is embedded into a higher clause, and hence the introduction of C with a temporal index. At this point, tense anchoring or structural tense anchoring became necessary. Let me elaborate on this change.

The introduction of embedding means that there are two temporal arguments to be bound in a sentence; one in a matrix clause, and one more in the embedded clause. For semantic well-formedness, the E-role must be associated with speech time as well as being bound. There is no problem with a main clause. The finite matrix clause has direct access to the speech time. However, unlike matrix finite clauses, even finite embedded clauses may not have direct access to the speech time, although there is a possibility that embedded past tenses can be
anchored with respect to the speech time or with respect to another past, as Anderson (p.c.) has suggested. Hence, an embedded tense cannot be given a temporal interpretation even if the E-role in the embedded clause is bound. Accordingly, the complement tense must be linked to the speech time in some way. This linking can be effected only structurally, that is, by the establishment of the functional projections CP and TP/IP, and more precisely, by the formation of the “tense -chain”, i.e. <Matrix Tense- embedded C -embedded Tense - embedded E-role>. The embedded tense has access to the speech time only by being linked to higher tenses.

The embedded tenses cannot be independent of higher tenses (Enç 1987, 648). They are linked to higher tenses that are linked in turn either to even higher tenses or to the speech time (Comp). In this sense, complement tenses are also linked to the speech time indirectly. However, why should this anchoring or linking need to be done structurally, i.e. syntactically?

The reason is the need for the association of the embedded E-role with speech time. Here, temporal adverbials or finite temporal affixes on verbs in embedded clauses are not adequate, as they cannot consistently give information about the speech time. Deictic adverbials in complements clauses are supposed to give some information about the speech time. For example, in a sentence like He heard that Mary left yesterday, the adverb yesterday in the complement conveys information about the speech time. However, temporal adverbials are not always present and, when present, not always deictic.

If we posited a Tense/Infl for the embedded clause, could this embedded Tense/Infl give the speech time information? The Tense/Infl in an embedded clause cannot do this, either, although it can theta-bind the E position. The complement Infl itself must be linked to the speech time in some way. Assuming Enç (1987), the complement Infl can be evaluated only via the local Comp or the matrix Tense in the matrix Infl. In both cases, the working mechanism is syntactic binding, and the binding relationship necessitates a specific configuration between the antecedent and the bindee: i.e. the binding
The emergence of TP relationship is a c-commanding relationship. To establish a c-command relation between the two elements, they must occupy defined positions in the clause structure.

The structural or hierarchical relationship between the two tenses can be established only by having an independent projection in the structure. The structural realization in a clause structure as a projection makes possible the association of the embedded E-role with the speech time, and hence the interpretation of tense. Thus, the necessity of temporal interpretation triggered the structural realization of tense as a functional category.

Accordingly, when there are two temporal expressions in a sentence, their temporal interpretation must depend on the syntax: i.e. the structure determines which one serves as the antecedent and which depends on it. For this purpose, a hierarchical relationship between two temporal expressions became necessary. The linking is done by relating the lower Tense to the higher Tense via Comp with a temporal index. Hence, the presence of Tense, and a Comp projection in each clause is definitely necessary.

One question arises immediately: why cannot an embedded Comp with a temporal index bind the embedded E-role directly? If Comp could bind the E-role directly, we could dispense with the I projection between C and the E-role. That is, why does the following relation not obtain:
The emergence of TP

(109) * T/IP
         /  \
    M. Infli  VP1
         /  \
    V1    CP
         /  \
C. Compi  VP2
         /  \
   V2 <E>  Tense affix

In this configuration, Comp binds the Tense affix first, and then the Tense affix binds the E-role, forming the following chain, < Comp - Tense affix - V>. However, this chain violates the Lexical Integrity Principle that syntax cannot have access to the internal structure of words. In fact, Comp and V are syntactic elements and the Tense affix is a morphological one. If the chain cannot be formed, then Comp cannot bind the E-role of a verb. Hence, a syntactic T/I position must be introduced.
The emergence of TP

The affix here is, for instance, the -ed of failed in (107) Mary found out that John failed the test.

In this configuration, Comp binds the embedded T/I first. Then, the embedded T/I binds the E-role. An affix on the verb cannot bind the E-role any more, since Tense has been transferred to T/I. The chain formed in this configuration is, <Comp - Tense/Infl -V>, involving the three underlined elements in the tree (110). All the elements in the chain are syntactic elements. The relation between T/I and <V-affix> is a checking relation between Tense and <V-affix> and hence this chain does not violate the Lexical Integrity Principle. Tense anchoring is carried out in two steps; first matrix T/I binds the embedded Comp, and then the embedded Comp binds the embedded T.

This implies the important further hypothesis that without functional categories TP/IP, and CP, there is no syntactic subordination of the kind referred to as embedding. The distinction between subordination and embedding is being made as follows: by embedding a clause is positioned internally within some other clause as one of its constituents. However, subordination does not always
The emergence of TP involve embedding; subordination is a process of linking two clauses, one being dependent on the other. The difference between embedding subordination and non-embedding subordination is illustrated in the following examples:

(111) a. I think that John will win the race. (embedding)
    b. When the dog barked, the man ran away. (non-embedding)

In earliest OE embedding was not employed widely and parataxis was the main device for combining clauses. I further propose that there is a close correlation between the internal structure of a clause and the main device of combining clauses in languages. That is, if the clause structure is flat, then there is no embedding. Based on this hypothesis, I propose the general development of clause structure, as will be seen from putting the above observations together. The following three stages are yet to be fully substantiated, given many putative counter-examples from Hittite, Ancient Greek, and Sanskrit23. Hence, they are not attested facts, and I propose them as one possibility.

**Stage 1.** Flat structure (pre-OE): The clause structure is flat or non-configurational and there is no syntactic subordination, or embedding. The basic way of combining clauses is parataxis. There is a single E role to be interpreted/bound. No structural requirement is necessary for temporal interpretation at this stage. Temporal adverbs, or verbal affixes are enough to act as a binder. Hence, there are no secondary syntactic phenomena of the kind involved in tense projection. This is exploited by languages like Sanskrit, or Ancient Greek. I propose the following tentative clause structure for such earlier languages:

23 The issue of the development of complex sentences has been addressed by many researchers (Delbrück 1900, W.P. Lehmann 1974, C. Lehmann 1984, Hock 1986, and so on) and is not yet concluded.
The emergence of TP

(112) \[ \text{VP}^{I^*, E^*} \]
\[ \begin{align*} 
\text{V}^{I, E^*} & \quad \text{NP}^{I^*} \\
\text{V}^E & \quad \text{affix} & \quad \text{N}^{I} & \quad \text{case affix}
\end{align*} \]

As discussed in the DP chapter, morphological case attached to a noun head binds the R-role of a noun, and an affix which is directly attached to a verbal stem binds the E-role of a verb. NPs are all referential arguments of V in such earlier languages.

Stage II: Partly-flat structure (earliest OE): Although OE saw the introduction of subordination, it favored parataxis: the juxtaposition of clauses with no formal signal of their relationship called, asyndetic parataxis. A typical example is shown in (113):

(113) he wæs þære iii. gear on wrecce hæfde hine
he was there for three years in wreck had him
Penda adrifenne
Penda exiled

(A.Chronicle 1.3 (658))

‘he was there for three years as a wanderer, (since) Penda ousted him’

In (113), there is no signal to show the logical relationship between the two events described, although I have added the conjunction since. Sometimes logical relationships are implied by a variety of adverbs such as pa ‘then’, þær ‘there’, although the surface sentence structure is a juxtaposition of two clauses:
The emergence of TP

(114) þæ hie þæ hamweard wendon mit þære
then they then homewards went with their
herehype þæ metton hie...
booty then met they... (A.Chronicle (885))

'Then they went homewards with their booty, then they met... = When they went homewards with their booty, they met...'

(This example is cited from Sweet 1953, 77)

Syndetic constructions in which conjunctions such as ond ‘and’, and ac ‘but’ were often used:

(115) 7 he his feorh generede. 7 he wæs
and he his life saved and he was
oft gewunded
often wounded (A.Chronicle E 49, 27-8 (755))

'and he saved his life, and he was often wounded'

However, there was no embedding in the proper sense of the term. I propose the OE clause structure below:

(116) OE

$$\begin{array}{c}
\text{Spec} \quad V' \langle E^* \rangle \\
(\text{Adv.}) \quad (\text{NP}) \quad V \langle E^* \rangle \quad (\text{NP}) \\
V \langle E \rangle \quad \text{affix}
\end{array}$$

In this configuration, argument NPs are unordered with respect to each other, and the parentheses show the possibility of no NP arguments. Adverbials are located
The emergence of TP in the Spec position of a VP.

**Stage III Embedding:** There are two E roles to be bound/interpreted, so, it is necessary to build a hierarchical relationship between the binders which bind each E position. One must be the antecedent, and the other the bindee. It is necessary for a binder to have an independent position projected in the clause structure. It is impossible, for example, to compare the time adverbial in one clause and the verbal temporal affix in the other clause to decide which one is antecedent in the temporal interpretation. This is the task of syntax. So, all the binders of E positions needed to have a projection in a clause structure. So, TP/IP as a binder of the E role appeared. Unfortunately, even just TP/IP became not enough for the interpretation for the embedded finite clause, because they have no access to the speech time. So, a Comp with a temporal index became necessary.

(117) CPI

\[
\text{Comp1} \rightarrow \text{IP1} \\
\text{Inf1} \rightarrow \text{VP1} \\
\text{V1}<E> \rightarrow \text{CP2} \\
\text{Comp2} \rightarrow \text{IP2} \\
\text{Inf2} \rightarrow \text{VP2} \\
\text{V2}<E>
\]

Once the syntactic TP/IP is established, that is, is projected into clause structures,
The emergence of TP

many syntactic phenomena occur as a result, as documented in section 5.

8. Conclusion

In this chapter, I have argued that a functional category TP/IP emerged in the development of language. Accordingly I claim that there was no functional projection, TP/IP in earlier languages like OE, and tense, a grammatical functional category, which heads a phrasal projection in the clause structure was a new development in the English language. The important factor which triggered the emergence of a T/I-system is the development of hypotactic structure which has reached the stage of embedding.

First, I have clarified that tense be treated on a par with nominals, that is, tense is the temporal argument of a verb and is referential. This temporal argument, which exists as an open position in a verb, must be bound for reasons of interpretation and semantic well-formedness. This E(vent)-position or E-role can be bound syntactically (by a functional head T/I), or by alternative devices like aspect, time adverbials or verb morphology. In the case of VPs in PE, the binder of this E position is a syntactic functional category Infl or Tense. In OE without a tense projection, the binder of the E position is temporal affixes attached to verbs.

Secondly, as the evidence for the non-presence of a tense projection, we have observed that the syntactic effects of a category tense in PE clause structure, such as the subject requirement, or modal auxiliaries, and do-support are lacking in OE.

Finally, I have suggested that the emergence of embedding triggered the establishment of a functional T/I-node. The appearance of embedding means that there are two temporal arguments to be bound, one in a matrix clause, and one more in the embedded clause. For semantic well-formedness, the E-role must be associated with speech time as well as being bound. The association of
The emergence of TP

the embedded E-role with speech time is problematic, as is discussed above. Unlike matrix finite clauses, finite embedded clauses may not have direct access to the speech time. Hence, an embedded tense cannot be given a temporal interpretation even if the E-role in the embedded clause is bound. The embedded tense has access to the speech time only by being linked to higher tenses, as is discussed in Enç (1987, 648). Finite temporal affixes on verbs in embedded clauses are not adequate to do this, as they cannot consistently give information about the speech time.

This association is done only via the local Comp or the matrix Tense in the matrix Infl by syntactic binding, and the binding relationship necessitates a specific configuration between the antecedent and the bindee: i.e. the binding relationship is a c-commanding relationship. To establish a c-command relation between the two elements, they must occupy defined positions in the clause structure. The structural or hierarchical relationship between the two tenses can be established only by having an independent projection in the structure. The structural realization in a clause structure as a projection makes possible the association of the embedded E-role with the speech time, and hence the interpretation of tense. Hence, the embedding triggered the establishment of a functional T/I-node in the clause structure.
Summary and Further Issues

Chapter Five

Summary and Further Issues

1. Summary of the main points

In this thesis I have tried to establish a correlation between ontogeny and phylogeny in language development. First, I examined both early child language around the age of 24 months (+/- 20%) and earlier languages (mainly earlier English), and showed that there are strong syntactic parallels between the two: both early child grammars and earlier languages exploit just the four lexical categories (N, V, A, P) and their projections (NP, VP, AP, PP); both lack functional category systems, i.e. they have neither a D-system nor a T/I-system. Hence, both have none of the syntactic effects involved with these functional categories: no referential determiners, no syntactic case marking, no auxiliaries, and no subject requirement, etc. However, no one can deny that Present-day adult English has an elaborate functional category system.

These syntactic parallels strongly suggest that the same mechanism is working in both these domains: the rise of functional categories at certain stages of development. Furthermore, this implies a unitary developmental picture of human language. That is, languages typically start as lexical-thematic without any functional categories (i.e. DP, TP/IP, CP), and the emergence of new functional categories is the characteristic mark of a transition from one stage to the next both ontogenetically and phylogenetically. This mechanism is called functional category maturation, which was originally proposed to explain
Summary and Further Issues

phenomena of first language acquisition. In the light of this functional category maturation, I proposed a new view of grammaticalization. Diachronically, this category maturation process is effected by the grammaticalization as syntactic functional categories of previously existing morpho-semantic features. For example, in the case of DP, some of the nominal features on nouns, such as referential features, are upgraded to have a syntactic projection. In TP/IP, some of the deictic temporal features on verbs are upgraded to constitute a functional category. Hence, grammaticalization should be viewed as functional category maturation, that is, as involving the emergence of functional categories heading their own projections. Furthermore, I proposed that language variation is due to differences in the degree to which functional features are codified as grammatical categories, i.e. whether they are upgraded to functional categories which have their own projection and if so, which features are upgraded.

I further proposed a more comprehensive framework within Universal Grammar to accommodate both historical facts and acquisition data. This framework involves the reallocation of duties, for example, from morphology to syntax, or from pragmatics to syntax. The development of language is then to be viewed as a change in some domain in the trading relations between morphology, pragmatics and syntax. The reallocation of duties starts when the existing balance between the three components, pragmatics, morphology, and syntax in a given language, is upset. For example, when the morphological realization of case features on nouns begins to deteriorate, or when features on verbs begin to decay, the reallocation starts. Thus, if morphology deteriorates, either syntax takes over the role of morphology, or pragmatics takes it over. This is the conceptual basis of category maturation. Indeed, this framework can account for properties of many languages in the world. The historical development of English is explained as the reallocation from morphology to syntax. The development of child language is described as the reallocation from pragmatics to syntax. The difference between first language acquisition and diachronic change is this difference in the nature of the reallocation. In principle, any reallocation
Summary and Further Issues

of duties is possible, e.g. from syntax to morphology, or from syntax to pragmatics, etc. However, as observed in this thesis, both first language acquisition and diachronic change target syntax. This fact suggests that there is a unidirectionality in the reallocation of duties, such that every reallocation targets syntax.

Finally, I pointed out that the absence and the subsequent emergence of functional categories within languages have an important effect on how clauses are constructed in those languages. Without functional projections, the nature of languages is lexical-thematic: only arguments which are required by the meaning of a predicate must be syntactically realized in the clause structure. Hence, the clause in the languages consists of maximal projections of the verb and its arguments, i.e. VP. My further suggestion was that there is no syntactic subordination of the kind referred to as embedding in languages without the functional categories, TP/IP and CP. There is a close correlation between the internal structure of a clause and the main device of combining clauses in languages. That is, if the language is purely lexical-thematic, the clause structure is fiat, and parataxis is the main device for combining clauses. The development of hypotactic structure, which reaches the stage of embedding, presupposes the introduction of TP/CP for purposes of temporal interpretation.

2. Further Issues: The emergence of CP

One topic which remains to be addressed is the issue of CP. The conclusion of this thesis, that the mechanism of functional category maturation is at work in both ontogeny and phylogeny, leads me inevitably to the hypothesis that there is /was no CP in early child grammars or in earlier languages.

It was suggested in chapter 4 on TP that the emergence of embedding triggered the introduction of CP, and TP/IP. Accordingly, my next task is to prove that early child grammars and earlier languages have/had no C-systems either and a
Summary and Further Issues

functional category C emerged at a certain stage of language development just like TP/IP and DP.

In first language acquisition, although I have not taken this up here, it is widely accepted that complementizers appear fairly late in child speech. Some acquisition data show that early child clause structures do not involve any subordination in the true sense of the word, but are produced by the simple juxtaposition of sentence fragments (cf. Clark 1974, Ingram 1975).

In the historical domain, the hypothesis that earlier languages had no C-system and that CP emerged at a certain stage is consistent with the traditional view that hypotaxis developed out of parataxis, although this view has been questioned. For example, in Jespersen's analysis (1927, 2.3) both I think he is dead and I think that he is dead evolved out of original parataxis of two independent sentences. The word that in the second sentence was originally the demonstrative pronoun. Furthermore, the demonstrative pronoun is argued to have been a constituent of the matrix clause with the subordinate clause as its complement. There was a deictic relationship between the demonstrative pronoun and its complement. For further discussion, see Mitchell (1988, 268 ff). However, I admit that this claim should be relativized to earlier stages of the language than the OE period (largely unattested stages) and, hence, needs more examination before being properly established.

If we put the process of clause combining within the framework of functional category maturation, this traditional view, which is dubbed the "hypotaxis hypothesis" by Harris and Campbell (1995, 282) is worth reconsideration.

One of the counter-arguments against the hypotaxis hypothesis is that a diachronic process creates a less complex structure from a more complex structure (cf. Harris and Campbell 1995, ch7, ch10). For example, there is a diachronic process called "clause fusion", which creates from a biclausal surface structure a monoclausal surface structure with an auxiliary and main verb. The example they give is a quotation construction: a simple sentence containing a quotative particle often develops from a complex sentence containing a matrix
Summary and Further Issues

clause that includes an expression of saying.

However, as recent theoretical research and this thesis have tried to make clear, "clause fusion" is in fact, not simplification, but complication: indeed, the inclusion of one clause in another clause results in more layered structures. Non-finite clauses such as "infinitives" have a clausal structure with two CPs and IPs in one sentence.

Diachronically, I suggest that there were no embedded non-finite clauses in OE, either. It has been argued that in OE the ancestors of Modern infinitives were deverbal nouns. Hence, they were essentially pure nominals and had virtually no verbal features, although some OE deverbal nouns took accusative objects. Whether OE had infinitival clauses or not is then another big issue, and I suggest that OE deverbal nouns did not yet have a clausal structure. In chapter 3, I have shown that the emergence of a functional category D within a nominal phrase made it possible for a pure nominal phrase to have a structure parallel to that of a clause, i.e. a gerund construction. Similarly, it might be possible to propose that the emergence of a functional category made it possible for a nominal phrase to have a structure parallel to that of a clause, i.e. a non-finite clause. However, as Anderson (p.c.) suggests, given counter-examples in OE texts such as *Cura Pastoralis* (*Pastoral Care*), closer examination is necessary before this claim can be justified for any attested period of OE.

3 Final Remark

The examination of the framework involving functional category maturation and the reallocation of duties that I have presented in this thesis, is clearly not definitive, and the validity of the claims should be tested further. However, the approach provides some new viewpoints for an account of the parallels between ontogeny and phylogeny.

To conclude this thesis, I cannot resist the temptation of suggesting that the
idea of maturation is natural from the Chomskyan perspective on language study with its claim that linguistics is a branch of biology and, as Atkinson (1996, 458) suggests, maturation is the norm in the development of complex biological systems.
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