FUNCTIONAL CATEGORIES AND MATURATION: THE PREFUNCTIONAL STAGE OF LANGUAGE ACQUISITION

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ABSTRACT

The aim of this thesis is to provide a theory of language acquisition within the Principles and Parameters framework of Generative Grammar.

In Chapter 1, I outline the syntactic theory I adopt which assumes that functional categories determine crosslinguistic variation in terms of parameterisation. In the model of the grammar presented, the set of functional categories is argued to constitute an independent module in the Language Faculty, the Functional Module. This is also referred to as the UG lexicon on the ground that it consists of categories that belong to the grammar proper. Substantive categories are assumed to be included in the Mental lexicon which is part of an independent module of the mind/brain. One of the underlying criteria which determine the difference between functional and substantive categories is the relation of each of these sets with conceptual entries in the mental lexicon. Both substantive and functional categories are argued to be morphologically realised at an interface level where processes of morphological affixation take place.

The theoretical approach to language acquisition defended in this thesis is summarised as follows: Principles of UG (Universal Grammar) are always available throughout the process of language acquisition; the Functional Module is subject to maturation, hence not available at the Prefunctional stage (18-24 months). On the basis of these background assumptions, the predictions of the theory are that Prefunctional grammars are ‘possible’ grammars in the sense defined by UG and that parameterisation is absent. Accordingly, the theory is tested against acquisition data from a number of languages: English, French, Greek, German, Spanish and Irish.

In Chapter 2 I present an account of inflectional affixation in Prefunctional grammars, the basic claim being that Aspect rather than Tense is encoded in early verbal forms. The presence of Aspect at this stage is argued to be motivated by two reasons. The first is that the process of Aspctual affixation involves a morphological rather than a syntactic derivation. On the assumption that lexical processes take place at the interface level, the presence of Aspctual features is expected. The second reason is that Aspect is an argument of the verb, thus necessarily present in early grammars, by virtue of thematic constraints on representations imposed by UG.

In Chapter 3 I discuss Agreement morphology in early verbal forms. The absence of an Agreement projection in the structural representation is argued to give rise to a number of predictions as far as the status of null arguments in Prefunctional grammars is concerned. In particular, the claim put forward is that null subjects and objects are structurally realised as PRO, the underlying motivation being that the availability of this category does not depend on the presence of a functional head in the clause structure. The traditional idea that child grammars are context-bound is formulated in terms of the distinction between discourse- and sentence-oriented languages. Early grammars are thus
argued to belong to the former set in that the referential status of null arguments is not syntactically but pragmatically identified.

In Chapter 4 the issue of word-order in Prefunctional grammars is addressed. In the absence of functional heads in the clause structure, the order of the subject and the object is argued to be unfixed with respect to the verbal head. Moreover, according to the clause structure suggested previously, it is predicted that certain word-order patterns are not available at this stage. Thus, the VSO order is shown to be missing even in acquisition data from languages where it is available in adult speech, e.g. Irish, Greek and Spanish. The account of word-order in early grammars is thus subsumed under the general claim concerning the absence of functional categories, and, consequently, parameterisation.

In Chapter 5, I discuss the interaction of negation and modality at the Prefunctional stage. These two categories are argued to exhibit certain distributional properties in early grammars which are attributed to their underlying semantic compatibility. Thus, distinctions between different categories of modality as well as between modal and non-modal sentences are argued to be expressed in the use of different negative elements in early grammars. The transition from this to the subsequent stage of development is argued to be the result of modal elements and negation emerging as syntactic categories. This account is consistent with the theoretical approach to language acquisition presented in this thesis, whereby transitional stages of development are taken to instantiate the emerging functional structure.
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CHAPTER ONE

THE THEORETICAL FRAMEWORK

1.1. Introduction

The ultimate aim of any adequate theory of language is to account for two basic problems. The first is how languages, despite superficial differences, are identical at some deep and abstract level. The second is to define the range of possible variation among languages in a principled way. In the Principles and Parameters framework (cf. Chomsky (1981), (1982), (1986a), (1986b), (1991), (1992)), the first issue is dealt with by assuming the existence of a set of predetermined principles called Universal Grammar (UG). These principles govern the structural and grammatical properties of all languages of the world by virtue of biological necessity. The fact that languages exhibit fundamental similarities therefore follows from the assumption that they share a common set of grammatical principles, i.e. UG.

The second issue is dealt with in terms of a finite set of parameters with a number of open values associated with them. The fixing of these parametric values in a (finite) number of different ways, results in linguistic differences which are manifest in terms of (clusters of) surface phenomena. Language variation is therefore reduced to variation in the values of parameters. The requirement that the set of parameters and the values associated with them should be finite guarantees that languages differ only in restricted and (formally) defined ways (cf. Chomsky (1986a)).

These underlying assumptions are shared by all researchers who subscribe to the Principles and Parameters theory. Consensus breaks down when the question of the nature of the elements with which parameters are associated is considered. In this respect, there are basically two major hypotheses in the literature. According to the first (cf. Chomsky (1986a)), parameters are assumed to be associated with UG
principles. In the second hypothesis, articulated in Borer (1984), parameters are 
associated with individual lexical items. These two hypotheses have different 
implications for the phenomenon of language variation as well as the process of 
language acquisition. The question of parameterisation (or lack thereof) in early child 
language is the core issue discussed in this thesis. As for language variation, I will 
briefly present some of the syntactic implications that arise under each of the two 
major hypotheses, concentrating in particular on the second one, which I adopt.

In Chomsky (1986a) parameters are conceived of as some sort of switches with 
a number of open positions. The selection of a specific value yields a pattern of 
linguistic properties, while an alternative parametric value yields a different pattern. 
A representative example of this approach to parameterisation is the Head-Parameter 
of X-bar theory.

X-bar schemata are assumed to provide a universal format according to which 
constructions are structurally represented. Configurational notions, such as Specifier 
of X and Complement of X are thus represented as in (1):

\[
(1) \quad X'' \\
| \quad Y'' \quad X' \quad Y'' \\
| \quad Z'' \quad X \quad Z''
\]

According to (1), a complement (i.e. \( Z'' \)) is a sister of the head category while a 
specifier (i.e. \( Y'' \)) is a sister of the single-bar projection of the head category. Note, 
crucially, that directionality constraints on the position of specifiers and complements 
are not defined in the schema in (1). The position of complements in a given 
language is argued to be fixed according to the value of the Head-parameter adopted 
in the language in question. The Head-initial value characterises head-complement 
languages like English, while the Head-final value characterises complement-head 
languages like Japanese. In this way, the Head-Parameter predicts a uniform pattern 
in the ordering of heads with respect to their complements regardless of the 
categorial status of the heads involved.
This prediction, however, appears to be problematic in the light of empirical evidence from a number of languages. In particular, in some languages, e.g. Dutch and German, verbs take their complements to the left, thus giving rise to the OV order, while adpositions take their complements to the right (i.e. PO). It thus seems that the general formulation of the Head-parameter fails to account for the variation attested within head-categories in a given language.

In addition, it has been argued on the basis of crosslinguistic evidences that the general formulation of the definition of governing category (Chomsky (1981)), is inadequate (Wexler & Manzini (1987)). In particular, the distribution of pronominal and anaphoric elements exhibits not only interlanguage variation but also variation within the same language. Thus, the values specified in the governing category parameter are argued to be associated with individual lexical items in order for variation in the distribution of pronominal and anaphoric elements to be accounted for. Such considerations give rise to an alternative theoretical approach to the nature of parameterisation, in particular, the Lexical Parameterisation Hypothesis (Wexler & Manzini (1987)).

1.2. Parameters and functional categories

According to the alternative approach to parameterisation, parameters are associated with individual lexical elements (Borer (1984), Chomsky (1991), Ouhalla (1991a))\(^1\). More specifically, parameters are assumed to be exclusively associated with functional categories. These include the elements standardly referred to in traditional literature as the 'closed-class system' of a language, e.g. Determiners, Complementisers, Inflection (Tense and Agreement) and Negation\(^2\)

Recent syntactic developments have given this approach to parameterisation strong empirical support as the formulation of some of the major parameters involves properties of functional heads. For example, the null-subject parameter (Rizzi (1986), Chomsky (1986a)) is assumed to be regulated by the nature of AGR-S. The distinction
between French-type and English-type languages in the distribution of VP-adverbs and negation has also been associated with properties of the AGR head ('weak' vs 'strong' AGR) (Pollock (1989), Chomsky (1991), Belletti (1990)). In addition, the V2 phenomenon as instantiated in languages like German and Dutch has also traditionally been associated with the functional category C (cf. den Besten (1977), Tomaselli (1989)).

Returning to the issue of fixing the order of a head-category with respect to its complement, it is clear that the original formulation of the Head-parameter is at odds with this theory of parameterisation. In the framework of Ouhalla's (1991a) theory, directionality restrictions, being parameterised properties, are associated with functional rather than substantive elements. Thus, directionality constraints in the selectional properties of functional heads are argued to give rise to crosslinguistic variation in word-order. In particular, the fixed order of the verb and its complement is argued to be the result of a choice formulated in terms of a Directionality parameter (Ouhalla (1991b)). In his framework, the functional category in question is AGR-O which selects its VP complement either to the left or to the right. This gives rise to two alternative possibilities adopted by VO and OV languages respectively:

(2) a. AGR-O''
   Spec AGR-O'
   AGR-O VP
      (DP) V (DP)

b. AGR-O''
   Spec AGR-O'
   VP AGR-O
      (DP) V (DP)

Movement of the verb to the head AGR-O (and thereafter to inflectional heads higher in the clause structure) and of the object DP to (Spec,AGR-O) gives rise to the VO order in (2a), while a similar process in (2b) results in the OV order. In the absence of directionality restrictions associated with substantive elements, in this case verbs,
the order inside $V'$ is assumed to be free. Hence, this parametric choice is also shown to involve the presence of a functional category (i.e. AGR-O).

Movement of the object to the Specifier of AGR-O is motivated by Case considerations. In particular, the object moves to this position in order to receive (Accusative) Case as a result of the Spec-head agreement process in this configuration. Note, moreover, that the Specifier is assumed to occur in a fixed position, namely to the left of the functional head. This is a general requirement on Spec's of functional categories formulated in terms of a directionality constraint on their licensing (cf. Ouhalla (1991a), Giorgi & Longobardi (1990)).

I will assume, following recent developments, that one of the basic properties of functional categories is that they project their own X-bar structure (Pollock (1989), Chomsky (1991) & (1992)). Thus, a fully-fledged functional structure is represented as in (3) (word-order inside VP irrelevant)⁴:

![Diagram](image)

---

4 Why is word order at all the other levels relevant?
Following current syntactic developments (cf. Kitagawa (1986), Kuroda (1985), Fukui (1986), Koopman & Sportiche (1988)), I will assume that subjects are base-generated inside VP where they are assigned a theta-role and, subsequently, move to (Spec,AGR-S) for reasons to do with Case. I will take this assumption to imply that VP constitutes the thematic domain of the verb. Thus, the representation of all its arguments inside the VP projection can be viewed as a result of the requirement for thematic positions to be represented within the projection of the selecting head. This assumption will be shown to have direct consequences for the nature of early grammars and the structural representation involved at the relevant stages.

Going back to the structure in (3), recall that objects receive an account similar to subjects in that their raising from the position inside VP to (Spec,AGR-O) is motivated by Case considerations. Thus, structural Case-assignment to subjects and objects is understood to operate under the Spec-head agreement process in a parallel way. This unified analysis of subjects and objects in relation to the presence of the respective AGR projections will be argued to give rise to a number of predictions in relation to word-order and null arguments in early child grammars.

In sum, the theory of parameterisation adopted here assumes that parameters are exclusively associated with functional categories. Directionality restrictions are parameterised properties attributed to functional rather than substantive elements. In this respect, the order inside the VP projection is predicted to be free. Word-order becomes fixed as a result of verb-raising to the functional categories higher in clause structure as well as movement of the arguments to the Specifier position of AGR-S and AGR-O respectively. Structural Case-assignment of subjects and objects takes place in the Spec-head configuration within each AGR projection.

Bearing the above framework in mind, I will now turn to the discussion of current theoretical approaches to language acquisition and the presentation of an alternative theory which will be defended on both theoretical and empirical grounds.
1.3. Language Acquisition

In the context of the Innateness Hypothesis the language faculty is assumed to constitute part of the biological endowment of the human mind/brain. The internal structure of the Language Faculty, the module of the brain specific to language, is considered to be equipped with certain mechanisms referred to as Universal Grammar (UG). Prior to exposure to linguistic input UG is said to be in the Initial State ($S_I$) while the mature state reached following the interaction of UG with "primary linguistic data" is referred to as the Steady State ($S_S$). The transition from the $S_I$ to the $S_S$ given the relevant input data can be viewed as taking place instantaneously, in that intermediate states do not affect the steady state ultimately attained (Chomsky, 1986:54). This model is, of course, an idealisation of the actual developmental process underlying language acquisition. Recent work concentrating on the grammatical properties attributed to each developmental stage, i.e. $S_1$, $S_2$, $S_3$ etc., has shown that there is a considerable uniformity in the pattern of crosslinguistic data which can lead to interesting generalisations regarding the nature of UG.

Within the Principles and Parameters framework, the standard assumption underlying the theory of language acquisition is that it involves a process of fixing parameters to the values of the target grammar. The range of open values associated with each parameter is defined by UG, whose Principles constrain the nature of the grammars constructed at the various stages of linguistic development. These assumptions are shared by all researchers in the field of language acquisition. Diversity of opinions arises with respect to the availability vs non-availability of UG Principles and/or parameters during the acquisition process.

There are two main theoretical approaches which have been argued to find empirical support from acquisitional data: The Maturation Hypothesis and the Continuity Hypothesis. Maturation assumes that certain grammatical properties are missing in early child speech due to the comparatively late emergence of the grammatical categories or principles regulating their appearance. Within the Maturation Hypothesis there are two distinct approaches: one assumes that
maturation affects the Principles of UG (Felix (1984)) and Borer and Wexler (1987))
while the second position argues that maturation affects functional categories
(Radford (1988), (1990), Guilfoyle & Noonan (1988), Tsimili (1991a)). The theory of
acquisition I will present later on in this chapter is along the lines of the Maturational
approach plus the assumptions made by the theory of parameterisation outlined in
the previous sections.

Continuity, as opposed to Maturation, assumes that UG Principles are available
throughout the process of language acquisition (Pinker (1984), (1987), Hyams (1986)).
In terms of recent theories of parameterisation (see section 1.2.1.) in which parameters
are associated with functional categories, the Continuity Hypothesis claims that, even
in the initial stages of language acquisition, clause structure is similar to the clause
structure defined by the adult grammar (Pierce (1989), Weissenborn (1990), Hyams

In the following section I will outline each of the main approaches and their
claims with regard to specific syntactic phenomena in early child grammar.

1.3.1. The Continuity Hypothesis.

that all UG Principles are available right from the start. The grammars constructed
at all stages of linguistic development are thus argued to be "possible" grammars in
a sense defined by UG. Parameters, on the other hand, are also available, albeit not
as yet fixed to their target value. Parameter-setting relies 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.

Hyams (op.cit.) argues for an account of pro-drop in child speech in terms of
the Continuity Hypothesis. In particular, she claims that the absence of parametric
differences between early child Italian and early child English with respect to the availability of null subjects can be accounted for on the assumption that the initial setting of the pro-drop parameter is to the positive value. If [+pro-drop] is the default value the argument goes as follows: the AG/PRO parameter is initially set to the positive value regardless of the target grammar, hence AG=PRO for both child English and child Italian. The structure inside I consists of both an AUX and an AG node as illustrated in the following tree diagram:

(4) S
   /   \
  NP I   VP
    /   \
   AG/PRO AUX

Given that AG=PRO at the stage under discussion, it follows that modals which occupy the AUX position in adult grammar are not allowed to occur, because of the UG constraint on the distribution of PRO, namely that it be ungoverned. The absence of modals and auxiliaries at the relevant stage is thus accounted for. The emergence of modals as well as the use of expletive subjects in child English, Hyams argues, lead to the parameter being reset to the negative value, i.e. the target value. In other words, modals and expletives serve as "triggering" data for the child to set the parameter to the appropriate value. The situation for the Italian child, however, is different. On the assumption that, in Italian, modals (potere and dovere) are main verbs (base-generated under a V node) and auxiliaries (essere and avere) are similarly base-generated under V, the AUX position remains empty. Thus, in adult Italian AG=PRO, as no lexical element occupies the AUX position, thus avoiding a violation of the PRO theorem. Moreover, in the absence of expletives in Italian, the child is not presented with data that would lead her to reset the parameter from the default value to the marked one, namely [-pro-drop].

More recent work in language acquisition has concentrated on the role of functional categories in early child speech: in particular, the role of Inflection and its
implications for Verb-placement, Negation and the presence of Complementisers. The Continuity Hypothesis crucially assumes that clause structure at the early stages is similar to the clause structure attributed to the adult grammar (Weissenborn (1990), Hyams (1991), among others). In more precise terms, early clause structure consists of both functional and substantive categories with their respective projections.

The crosslinguistic similarities observed in early acquisitional data are assumed to be an effect of the as yet unfixed parameters. Given the absence of parametric variation child speech is expected to deviate from the parametric options adopted by the target grammar. On the assumption that functional categories project, the attested differences between child and adult grammar are taken to be the result of underspecification of the features associated with each functional category. In other words, functional categories assume some sort of "default" feature specification (possibly assigned by UG) at the early stages of development, in particular prior to parameter-setting. According to this line of reasoning, language acquisition is said to involve a "learning" process which basically amounts to matching syntactic features with the appropriate functional category. Parameter-setting can be understood as the result of this "learning" process.

Within the Continuity framework different assumptions have been made about the clause structure of the early stages of language acquisition. Some researchers agree on an impoverished structure which, however, includes a functional projection, namely INFL (Clahsen (1991a), Pierce (1989), Tracy et al (1990), Penner (1990)). Others (Weissenborn (1990), Hyams (1991)) argue for the presence of a CP as well as an IP projection in early grammars. In what follows I will briefly present an account of the former (weak) and the latter (strong) version of the Continuity Hypothesis.

Pierce's (1989) account of subjects in early child English, French and Spanish is formulated in the spirit of the Continuity framework. She argues for the presence of an INFL head which is assumed to assign Nominative Case to the subject inside VP (cf. Koopman & Sportiche (1988), among others). Such Nominative Case-assignment in terms of structural government is contrasted with Case-assignment via
Spec-Head agreement following movement of the subject from the Spec of VP position to the Spec of IP. These two options are taken to be parametric choices of the parameter associated with the governing properties of INFL.

At the early stages of acquisition, Pierce argues, subjects remain in their base-generated position, namely inside the VP projection. Note that movement of the subject to Spec of IP in the adult grammar is motivated mainly by Case considerations. On the assumption that, at the early stages, INFL assigns Nominative to the subject via government, no violation of the Case Filter ensues, so the absence of movement of the subject to the Spec of IP position is accounted for. Given the Case-assigning properties of INFL, null subjects are also assumed to be licensed in the relevant configuration, hence pro subjects are argued to occupy the Spec of VP position. The crucial assumption underlying Pierce's account is that there is an initial default setting of the parameter associated with the governing properties of INFL, namely Case-assignment in terms of structural government. Given that the relevant parameter is not fixed as yet, it is the default setting that is assumed in the early grammar.

With respect to the frequent occurrence of postverbal subjects in early child French and their more restricted occurrence in early child English, Pierce's account goes as follows: the VP-internal parameter (cf. Koepman (1988)) is assumed to be responsible for the ordering of the verb with respect to the VP-internal subject in any given language. French is argued to allow base-generated subjects either to the left or to the right of the verbal head inside VP. Early French is assumed to have fixed this parameter right from the start, hence both pre- and postverbal subjects are available. English, on the other hand, allows base-generated VP-internal subjects to occur only to the left of the verb, thus, Pierce's argument goes, the number of postverbal subjects in early English data is relatively small.

The crucial theoretical implication of Pierce's suggestions is that it is not consistently the case that all parameters assume a default value in the early stages of acquisition. In particular, in early child grammars, the INFL-parameter is instantiated
in its default value, while the VP-internal parameter is set to the target value right from the start. One of the problems with this assumption is that the notion of 'default' remains undefined and, therefore, mysterious. If the notion of 'default' or 'unmarked' is indeed part of UG, then we should expect each parameter to be specified with a 'default' setting, and early grammars should exhibit 'default' settings associated with each parameter if the differences between child and adult grammars are to be accounted for in this way. In other words, if the notion of markedness associated with parametric values does not apply across the board it is devoid of theoretical interest.

Recall that a crucial assumption in the Continuity framework concerns the role of 'triggering' data in the process of parameter-setting. Even leaving aside the question about the unspecified nature of 'triggering' data, and which of these data qualify as 'triggers' for which parameter (cf. Borer & Wexler (1987)) the interaction between 'default' settings and the 'learning' process remains mysterious. In particular, if one assumes that certain parameters are already fixed from the early stages, e.g. the VP-internal parameter, then in the absence of a specification of the relevant 'triggering' data there is no principled way in which any 'learning' process can be shown to take place.

One of the most basic and important implications of the early IP structure advocated by Pierce (among many others), is that it predicts the possibility of the subject intervening between the verb and the object as a result of V-movement to a [+finite] I. In particular, given that verbs in adult French are assumed to move to I in the syntax (Pollock (1989)), the null hypothesis in the Continuity framework is to assume that, given the availability of the relevant projection (IP) and the [+/- finite] features associated with it, this movement process takes place in early clause structure as well. Assuming with Pierce that the subject in early child French can be base-generated either to the left or to the right of the VP projection, the VSO order should in fact be one of the alternative word-order patterns. However, contrary to this prediction, the VSO order is consistently missing in early French data. Pierce acknowledges this problem and suggests that it may have do with the lack of
adjacency for Case-assignment required for the verb to assign Accusative to its complement. This idea can hardly be substantiated given that, on the one hand, the trace of the verb could, in principle, assign Case to the object inside VP and, on the other, adverbs intervening between the verb and its complement in adult French do not give rise to a violation of the alleged adjacency requirement for Case assignment:

\begin{equation}
\text{(5) Les Grecs detestent toujours le despotisme.}
\end{equation}

The Greeks hate-3p always the despotism "The Greeks always hate despotism."

Again, should one resort to an ad hoc filter ruling out the VSO order in early child French? Notice, crucially, that the absence of the VSO order is not restricted to early child French only. As will be shown later on, VSO is not attested even in early speech data from languages in which it is quite frequent in adult speech, for example Spanish and Modern Greek. In other words, what we are dealing with is not a language-specific or parametric choice in early child grammars. Rather, it seems to be a crosslinguistic generalisation about early child speech which requires a UG explanation instead of an ad-hoc stipulation.

More problems with Pierce's analysis come from purely empirical considerations. In particular, the claim that the number of postverbal subjects in early child English is relatively small and occurs with a specific class of verbs, namely ergatives, is problematic, given the evidence presented in Bowerman (1990)\textsuperscript{8} and Braine (1976) (see Ch.5):

\begin{equation}
\text{(6) a. cough Christy (Bowerman)}
\end{equation}
\begin{equation}
\text{b. write Sissy}
\end{equation}
\begin{equation}
\text{c. drink mommy}
\end{equation}
\begin{equation}
\text{d. awa walk daddy}
\end{equation}

Although French postverbal subjects in early data outnumber their English equivalents, there does not seem to be a valid generalisation about the class of verbs that allow the subject to appear postverbally in the English corpus. Moreover, the number of utterances containing postverbal subjects in English early child data is by no means negligible as shown in the above references. In Chapter 5, I will discuss
at length the issue of whether postverbal subjects are allowed in early clause structure crosslinguistically.

Notice, finally, that in Pierce's analysis, English child utterances containing postverbal subjects are analysed as VP-internal arguments, thus supporting the hypothesis that there is neither V-raising nor subject raising to SpecIP as yet. The underlying motivation for the base-generation of postverbal subjects in VP-internal position is consistent with standard assumptions about the thematic structure of ergative verbs (cf. Burzio (1986)). More precisely, ergative (also referred to as unaccusative) verbs are assumed to have a single argument which, moreover, is an internal one. In adult language, movement of this complement from its base-generated position to SpecIP is motivated by Case considerations. As discussed above, in Pierce's account, Case-assignment in early grammars takes place under structural government. Thus, VP-internal subjects are assigned Nominative in this configuration. It seems, therefore, that the parametric choice associated with V-to-I movement is set to the target value right from the start while the INFL-parameter is set to the 'default' value, thus rendering subject movement to SpecIP unnecessary. The obvious question to ask is: If postverbal subjects in English are really base-generated as internal arguments and remain in their D-structure position, how does Case-assignment take place? Given the relevant Minimality restrictions and the presence of a closer governor, namely V, INFL cannot govern and case-assign inside V'. Moreover, it remains particularly obscure, as was discussed above, what exactly allows some parameters to appear already set to their target value (in this case V-to-I raising) while others (the INFL-parameter) assume a 'default' value. Such assumptions although interesting because of their technical complexity and hence of the 'deductive depth' they presuppose, require more theoretical justification before they can qualify as explanatory.

The development of Complementisers and the CP projection in early clause structure has also been addressed by certain researchers in the light of the Continuity Hypothesis (Weissenborn (1990)). It is a widely attested fact in the literature of language acquisition that Complementisers appear fairly late in child speech.
Moreover, I-to-C movement in English interrogatives is also missing at the early stages of development (cf. Brown (1973), Clark & Clark (1977), Bloom (1991)). These facts could be taken to suggest that the landing-site of finite verbs in the relevant constructions, namely C, is lacking at the stage under discussion. In the absence of a C category, Complementisers would also be predicted to be missing, as is indeed the case.

In a strict Continuity framework, however, these facts cannot be taken to imply the absence of the functional category C, as the basic assumption underlying the theory is that a fully-fledged clause structure (with some parameters still unfixed) is available right from the onset of language development. The alternative possibility that Weissenborn (op. cit.) puts forward with respect to early German assumes the presence of a CP projection before Complementisers and V2 appear. His proposal is that the child initially analyses declaratives as IP's and wh-interrogatives as CP's. The implication is that the child’s grammar, at this stage, treats German as a residual V2 language rather than a genuine V2 language. He also argues for a CP projection in embedded clauses which lack a Complementiser and in which the finite verb occupies final position.

His account is based on the assumption that the C position in these cases is specified for certain abstract features that force the verb to remain in its canonical final position. It is only after the child analyses [-wh/non-subject] topicalised constituents that she concludes that German is a genuine V2 language. Weissenborn argues that the developmental sequence attested in the V2 phenomenon in German is consistent with the formulation of the parametric options involved being associated with the features of C and I (cf. Rizzi (1990)). The default parametric options are those in which either C or I, but not both, are positively specified, i.e. [+C,-I] and [-C,+I]. The child initially assumes the default options, hence the analysis of wh-interrogatives as CP's and declaratives as IP's. On the basis of the analysis of non-wh, non-subject preposed elements the child abandons these initial parametric options and adopts the "marked" option of [+C,+I]. These topicalised elements are assumed to act as "triggering" data for the correct parametric setting.
Although the above analysis is a serious attempt to justify a rigid Continuity approach to the facts of early child speech, there seem to be considerable theoretical and empirical problems associated with it. Weissenborn (op.cit.) claims that the reason why topicalised elements other than subjects fail to be analysed by the child has to do with Case or semantic features associated with these elements. So, for example, the child first has to analyse the preverbal adverbial as locative or temporal to conclude that it is a moved element. Moreover, the absence of morphological case distinctions, Weissenborn argues, leads to the failure to analyse non-wh, non-subject constituents as occupying the SpecCP position. However, in the Continuity framework, the absence of morphological case distinctions does not imply the absence of abstract Case features on arguments as required by the Case-Filter or the Visibility Condition which constitute part of UG. Moreover, thematic distinctions between subjects and objects are clearly available even at the earliest stages of development. As far as the particular semantic interpretation of adverbials as being temporal or locative is concerned, this cannot be considered as the factor which determines whether the particular ADV is moved to or is base-generated in the SpecCP or some other position, given that V2 is the only option in such constructions in the adult grammar:

(7) a. Gestern hat John Maria getroffen.  
   yesterday has John Maria met  
   "Yesterday John met Mary."

   b. Dort hat John sein Auto geparkt.  
   there has John his car parked  
   "John left his car there."

It seems, therefore, that the properties of the ‘triggering’ data that are considered responsible for the acquisition of a genuine V2 language are unjustified.

There are additional empirical problems with Weissenborn’s analysis that have to do with child data from languages like Greek (not a genuine V2 language) and English. Adult Greek exhibits I-to-C movement in wh- as well as focus constructions. In other words, non-wh, non-subject constituents can occupy an operator position, in which case I movement to C is required:
a. Ti efage o Yanis?
   what ate-3s the-nom Yanis
   "What did Yanis eat?"

b. * Ti o Yanis efage?
   what the-nom Yanis ate-3s

a. To VIVLIO dhiavase o Yanis.
   the-acc book read-3s the-nom Yanis
   "It is the book that Yanis read."

b. * To VIVLIO o Yanis dhiavase.
   the-acc book the-nom Yanis read-3s

However, topicalisation of adverbials or arguments of the verb does not trigger I-to-C movement:

a. Xthes o Petros sinantise ti Maria.
   yesterday the-nom Petros met-3s the-acc Maria
   "Yesterday Petros met Maria."

b. Vivlia, o Yanis dhiavazi.
   books the-nom Yanis reads
   "Yanis reads books."

In other words, it is not the case in Modern Greek that Verb-raising to C occurs regardless of the nature of the preposed constituents (Operator vs non-Operator). If the ‘triggering’ data for determining whether the target language is a genuine or a residual V2 one is the presence of non-wh, non-subject elements in preverbal position, as Weissenborn claims, then it is hard to imagine how in-between cases like Greek could receive a plausible account.

Additionally, there is abundant evidence from English child data that, in the acquisition of wh-interrogatives in particular, there is a rather long period in which subject/aux inversion is not attested, while the wh-phrase occurs in initial position (cf. Clark & Clark (1977), Bloom (1991), Radford (1990)). Note, crucially, that the absence of subj/aux inversion in wh-interrogatives persists even in stages where inversion in yes-no questions is attested (cf. (13a-d) vs (13e&f)). The data in (11), (12)
and (13) illustrate the lack of subj/aux inversion at three consecutive stages of development (Clark & Clark (1977)):

b. Where pencil go?
c. What kitty doing?
d. What lizard doing?

(12) a. Where me sleep? (Clark & Clark, 1977)
b. What the dolly have?
c. What soldier marching?

(13) a. What I did yesterday?
b. Where the other Joe will drive?
c. Why he don’t know how to pretend?
d. Sue, what you have in your mouth?
e. Will you help me?
f. Are you going to make it with me?

If the default option with respect to the features in C is [+C,-I] which is the choice of a residual V2 language, it seems hard to predict a stage in English, a residual V2 language, where the default option would fail to appear. In other words, if ‘default’ applies crosslinguistically in the absence of the parameter being set to the target value, we would expect a residual V2 language, namely English, to exhibit I-to-C movement in wh-interrogatives from the early stages of language acquisition, contrary to fact.

1.3.2. The Maturation Hypothesis

The notion of Maturation in the theory of language acquisition has been advocated by various researchers in the field (Felix (1984), Borer and Wexler (1987), (1988), Guilfoyle and Noonan (1988), Radford (1988), (1990)). The assumption that there is a maturational process which affects language development is not surprising given the general consensus regarding the Innateness Hypothesis. In other words, that certain properties of a biologically determined program should be available at specific points of time is in conformity with the general idea that biologically
determined developmental processes are subject to maturational constraints (cf. Chomsky (1980) and Borer & Wexler (op.cit.) for a theoretical defence of the Maturational approach with specific reference to language acquisition).

There are basically two ways in which one can defend an account of language development in terms of Maturation. One is to concentrate on the structure of the language at the stage where the grammatical constructs that are considered to be subject to Maturation are not available as yet. At this stage, the absence of certain grammatical principles and/or categories is argued to give rise to differences between child and adult grammars, as well as differences between consecutive stages within the child’s language acquisition process. The other way, is to concentrate on the order of appearance of these grammatical principles or categories in acquisition crosslinguistically. On the assumption that the maturation of the relevant grammatical constructs is biologically determined the implication is that there should be similarity in the sequence of developmental stages of any natural language. In the theory of language acquisition developed in this work, I will try to show that initial stages of linguistic development lack functional categories, presumably as a result of maturational constraints.

The basic implication of the Maturation Hypothesis is that phenomena dependent on categories or principles which are subject to maturation will be absent at stages prior to the emergence in the child grammar of those categories or principles. There are basically two alternative suggestions regarding which grammatical constructs mature. According to the first approach, UG Principles are associated with maturational constraints. This approach has been instantiated in two potentially different ways: first by Felix (1984) who implies that UG is not available at the initial stage; second by Borer & Wexler (1987), (1988) and Wexler (1991) who assume that maturation affects ‘certain notions’ or categories associated with UG. The second approach associates Maturation with a specific set of categories in the grammar, namely Functional categories (Guilfoyle & Noonan (1988), Radford (1988), (1990), Tsimpili (1991a)). In the next section I will briefly discuss each of these alternatives.
1.3.2.1. Maturation of UG Principles
1.3.2.1.1. UG-unconstrained Maturation: Felix

This theory is basically a counterpart of the Continuity Hypothesis in the sense that child grammars are taken to be fundamentally different from adult grammars. On the assumption that UG Principles are not available from the beginning the prediction is that early grammars are not regulated by syntactic principles. In other words, the possibility that early grammars are "wild" is not excluded. Felix (1984) argues precisely along these lines. In particular, he claims that the initial stage of German language acquisition exhibits free word order, which is the result of the non-availability of X'-theory, a UG Principle. He assumes that sentence structure in the early stages is regulated by semantic properties of the lexical elements present in the early utterances.

When X'-theory matures, Felix argues, the possible word-order patterns are all and only those allowed by the X'-schema. VSO and OSV orders fail to appear because their structural representation gives rise to a violation of X'-theory. In order to substantiate this point certain assumptions need to be made regarding clause structure at this stage. In particular, although this is not made explicit by Felix, one has to assume first, that the clause structure at this stage consists of a VP projection only and secondly, that directionality restrictions inside VP are absent:
According to the structures in (14), it is clear that the VSO and the OSV orders are excluded in principle, given the ban against crossing branches. Notice, however, that there is an additional assumption that one has to make: that movement processes at this stage of development are excluded. In other words, substitution movement in (14) is excluded by the absence of landing-sites higher than VP. Adjunction-movement, however, is still available, so, it could be argued that the object moves and adjoins to the left of VP in (14a or c) or to the right of VP in (14b or d). The first adjunction-movement process would derive the OSV order and the second one the VSO order. Felix fails to make any of the four assumptions mentioned above, with the result that his proposal remains vague and the questions related to it remain unanswered.

There are several problems with the UG-Maturation Hypothesis, the basic one being that it can hardly qualify as a constrained theory of language acquisition. The idea that early grammars even at the first stage, are "impossible" in UG-terms is undesirable on purely theoretical grounds. If "free" word-order in early grammars can be accounted for within a UG-constrained theory, then this qualifies it as a better theory, given that no changes in the nature of the acquisition apparatus are required. In particular, the 'semantic' structure suggested by Felix is strikingly similar to the X'-structure that he assumes is available at a subsequent stage\(^1\). The absence of
categorial specification on the lexical items involved is, in fact, the basic difference between the 'semantic' and the 'syntactic' structures.

If a semantic structure is indeed an alternative representation in the absence of X'-theory, it is not clear why maturation of the relevant UG principle should lead the child to abandon the semantic representation. In other words, if structure-building is not an exclusively syntactic process, the non-syntactic options should, in principle, remain available throughout language acquisition. On the other hand, it could be assumed that the emergence of a UG Principle leads to the 'semantic' option not being available as an alternative any more, i.e. a tadpole-to-frog hypothesis. This hypothesis, however, lacks both empirical and theoretical justification. In particular, the problem is that there can be no principled explanation as to what a transition from one stage to a qualitatively different one involves, rendering the whole process of language acquisition mysterious (cf. Gleitman (1981) and Pinker (1984)).

There could be, however, an alternative interpretation of what Felix describes as a "semantic" stage. In particular, the semantic properties that he considers regulate the structure of sentences at the initial stage could be reinterpreted as theta-role assignment which, as standardly assumed, is part of the syntax proper. Moreover, what seems to be clear at the initial stage is that UG Principles are available. In particular, morphological properties of lexical items as well as the c-command condition on Predication are UG requirements which appear to be satisfied throughout all stages of language acquisition (cf. Ch.3 and 4, for further discussion). In other words, one could reinterprete the 'semantic' structure that Felix assumes at the initial stage as a syntactic one which lacks functional categories and, therefore, constraints on word-order possibilities.

As far as the syntactic analysis that Felix attempts is concerned, it is clear from the discussion above that he fails to make any explicit claims as to what excludes the VSO and OSV orders as derived structures. The questions associated with these word-order patterns have to do with both the assumption that early clause structure
consists of a VP projection only and the status of functional projections in early grammars. Notice that if I and/or C is present in the structure, then the VSO order can legitimately be derived via V movement to C and movement of the subject to the Spec of IP. If functional categories are also subject to maturation then it is not clear which grammatical constructs Maturation affects: UG Principles or functional categories?

As far as the free ordering of constituents inside VP is concerned, even assuming that Felix has in mind structures similar to the ones in (14a-d), his assumptions are completely vague. Could it be that the Head-Parameter of X'-theory which is responsible for fixing the order between the head and its complements has not matured yet, despite the fact that X'-theory is already part of the child’s grammar? And, if so, does this imply that parameters mature independently of the UG Principles they are linked to? At this point we are again left to guess what exactly matures and what does not.

As regards the non-availability of a derived VSO or OSV order via adjunction-movement it is hard, given the vague nature of the UG-maturation approach, to conceive of an explanation other than one which stipulates that movement processes are still dormant. All in all, it seems impossible to evaluate Felix's proposal in the absence of explicit claims as to what exactly matures and what the sentential structure of early grammars is. One of the most serious problems with a UG-unconstrained Maturation approach is that the possibility of a Principle of UG being dormant can always be invoked to get around potential problems. This casts considerable doubt on the viability of the theory as a whole.

1.3.2.1.2. UG-constrained(?) Maturation.

Borer & Wexler (1987), (1988) argue for a theory of Maturation which assumes that certain notions or formal mechanisms associated with UG mature in the process
of language acquisition. In particular, their account of the absence of verbal passives in child grammars is based on the assumption that the notion of A-chains is not yet available to the child. It is standardly assumed with respect to passive formation in adult grammars that the object moves to the subject position, thus creating an A-chain. The chain algorithm which links moved arguments to their traces in thematic positions, Borer & Wexler argue, is subject to maturation. Thus, early grammars must involve adjectival rather than verbal passives, given that the formation of the former involves a lexical process rather than a syntactic one.

However, the analysis of passives that Borer & Wexler suggest makes no reference to the basic property of passives, namely that they involve the presence of a passive morpheme which, among other consequences, leads to the absorption of Accusative Case associated with the verbal head that, in turn, triggers object-to-subject movement (cf. Chomsky (1981), Jaeggli (1986), Baker, Johnson & Roberts (1989), among many others). In other words, the account suggested by the authors for the absence of verbal passives in early grammars is based on a consequential rather than a basic property of passives. Moreover, if their account is correct, it predicts falsely that impersonal passives, in languages where they occur, should be available regardless of the maturation of the chain algorithm, given that in these constructions there is no movement of the object to the subject position. An account of the absence of all verbal passives in terms of the absence of the passive morpheme is more consistent with current views on the derivation of passive-constructions while also providing an account of the lack of object-to-subject raising in impersonal passives. Additional problems with Borer & Wexler's account are related to the criteria they use to differentiate between adjectival and verbal passives (for a detailed discussion see Hoekstra (1990)).

A final remark on this analysis concerns the classification of theories of Maturation that Wexler (1991) puts forward. He describes, Felix's approach as UG-unconstrained Maturation which, as discussed above, is an accurate description. The theoretical framework which is put forward in Borer & Wexler (1987), (1988) constitutes, in Wexler's terms, an approach within the Maturation Hypothesis which
no, no grammar can fall
outside UG-principle
is UG-constrained. The justification for this term is that UG principles as such are always available. On the other hand grammatical notions which are not parameterised but constitute part of the information provided by UG, for example A-chains, PRO (Wexler (1991)) are subject to maturation. It seems to me that the alleged difference between the two Maturation theories is not justified at least not as regards the issue of the availability of UG Principles. As is explicitly stated: "[This theory] does not assume that the formal principles available to the child are constant throughout development. Rather, the assumption is that certain principles mature" (Borer & Wexler 1987:124). What could be understood as a difference in the two theories is that Felix clearly assumes that the first stage of language acquisition is not a syntactic one while Borer & Wexler do not mention such a possibility.

However, given that the maturation of UG implies the non-availability of certain principles, both theories allow grammars which are not fully UG-constrained. If, on the other hand, Borer & Wexler’s position indeed constitutes an alternative to Felix’s Maturation account, their claim that certain UG-information is subject to maturation appears to be somewhat obscure. Given their claim that UG Principles and the Parameters associated with them do not mature, it is not particularly clear whether Maturation affects what is taken, in syntactic theory, to constitute a set or submodule of the Language Faculty. Moreover, given that there is no explicit claim delimiting the nature of the notions or categories that mature, the analyses put forward in this framework seem to be exclusively data-driven.

1.3.2.2. An alternative theory of Maturation.

The theory of language acquisition that I put forward is a "mixed" theory in the sense that it combines a Continuity approach as well as a Maturation-type approach. In particular, this theory assumes that maturational processes affect functional categories (cf. Guilfoyle and Noonan (1988) and Radford (1990)) rather than UG Principles. The latter are available to the language learner in their entirety right from the onset of language acquisition. The presence of UG principles ensures
No, etc. Case is associated with focus than in case filter is violated.
that child grammars at all stages of the developmental sequence constitute ‘possible’
grammars as defined in terms of UG constraints. In other words, it is predicted that
at no stage of linguistic development can grammars violate Universal principles, thus
excluding the possibility of constructing ‘wild’ grammars. It is in this sense that the
theory presented here is consistent with the Continuity framework.

Functional categories, on the other hand, are assumed to be subject to
maturation. As is the case with any theory of Maturation, the implication is that at
the early stages of acquisition, functional categories and their respective projections
are absent from child grammars. I will refer to this stage as the Prefunctional Stage
following Radford (op.cit.). This period extends, roughly, from the age of 18 to 24
months, subject to individual differences.

Recall that the syntactic theory adopted here, associates parameters exclusively
with functional categories (see section 1.2.). The set of functional categories
constitutes an independent module of UG, namely the Functional Module (FM)
(Tsimpli & Ouhalla (1990)). The FM is essentially the Lexicon of UG in the sense
that it consists of those elements whose presence defines the nature of (adult)
grammars in terms of parametric options. The reasons why the UG Lexicon is
identified as the FM rather than as a lexicon which includes both substantive and
functional categories have to do with their function in the grammar and their relation
to corresponding concepts in the central/cognitive system.

To make this idea explicit, I wish to presuppose Fodor’s (1975) position of the
Language of Thought and his (1983) modularity hypothesis, together with Sperber &
Wilson’s (1986) relevance theoretic account of the central system, in particular their
view of the mental lexicon, which I will adopt and adapt to my own ends. ( For
background information on these positions, cf. also Fodor (1991), Smith (1989),
Carston (1988), (1989)). One of the shared assumptions in this theoretical framework
is that substantive elements, like verbs, nouns and adjectives are linked to a
conceptual slot in the mental lexicon which is, to a large extent, universal (Fodor
(1975), Sperber & Wilson (1986)). The mapping of the concept onto a
linguistic/morphological representation can be assumed to take place at an interface level between the Language Faculty and the central cognitive system where the categorial specification of the element as being [+V] or [+N] for example is included. I will assume that, in this interface level, the morphological realisation of both functional and substantive elements is included. In other words, this interface level can be understood as the meeting point of categories which are linked to the mental lexicon (i.e. substantives) and categories which are linked to the UG Lexicon (i.e. functional categories). In Sperber & Wilson's (op.cit.) model, the linguistic representation of an item is part of its entry in the conceptual lexicon along with its encyclopaedic and logical entry. Either formulation is consistent with the claim that I am putting forward, namely that substantive elements correspond to conceptual entries included in the mental lexicon.

On the other hand, it is not equally clear, that functional categories, like Agreement or Complementisers, have a conceptual counterpart in the mental lexicon. In this respect, the distinction between functional and substantive categories can be formulated as the presence vs absence of a 1:1 correspondence between categories and concepts. Note, however, that this suggestion does not imply that functional categories lack semantic content altogether. It is only plausible to assume that Negation and Time correspond to a conceptual slot in the mental lexicon given that they play a crucial role in the logical interpretation of a sentence. There are, however, reasons to believe that the correlation between Negation as a syntactic category and the concept of Negation does not involve a 1:1 correspondence as is the case with substantive elements and their corresponding conceptual entry. For example, the Negative interpretation of an utterance can be encoded in the use of either anaphoric negation (probably not part of the FM) or by sentence (constituent) negation.

The concept of Time and the functional category Tense can be shown to lack a 1:1 correspondence in the same way. In particular, natural languages exhibit a variety of syntactic Tense realisations in, for example, subjunctives, infinitives and in constructions where there is tense-dependency (sequence of tenses, conditionals and similar phenomena). At the level of logical interpretation (the Language of
Thought in Fodor's model), however, it is assumed that only deictic/real-time reference is specified. Where deictic Tense is absent the appropriate slot is filled on the basis of pragmatic factors. It is clear, therefore, that the alternative syntactic realisations of Tense although determining the syntactic status of a sentence (grammatical vs ungrammatical) do not have a corresponding value when it comes to the representation of the concept Time at the level of logical interpretation.

On the basis of the above discussion, it is plausible to argue that functional categories as opposed to substantive ones assume a distinct status with respect to their correlation with concepts in the mental lexicon. Moreover, as discussed in the presentation of the syntactic framework, the role of functional categories in the grammar as exclusively responsible for crosslinguistic differences, in terms of parametrisation as well as their grammatical properties, justifies their distinct position as an independent UG module.

Going back to the theory of language acquisition, the claim about maturation can be viewed as the availability vs non-availability of the FM in the language acquisition process. In particular, it is assumed that the properties associated with each functional category are not accessible to the child at the Prefunctional stage. Notice, crucially, that the non-accessibility of the FM does not necessarily imply complete absence of functional morphemes in early sentences. As noted above, the morphological realisation of any grammatical category whether functional or substantive is included at the interface level. The presence of a functional morpheme, however, does not imply that it has been acquired by the child, in the sense that abstract properties or features associated with this functional morpheme are not present in the child grammar.

So, for example, it is well-known that the -t ending (i.e. third person singular) is attested from the early stages of acquisition of German (Clahsen (1991a, 1991b)), Jordens (1990) among many others). It is also a common observation, however, that the complete agreement paradigm is missing at the same stage and that agreement errors are often attested (Clahsen & Penke (1991)). Moreover, null subjects are
allowed to occur with both finite and non-finite verbs. Similar observations have been made for a number of other languages like Dutch (de Haan & Frijn (1990)), Spanish (Pina (1984)) and Greek (Katis (1984), Roussou (in prep.) and my own corpus). The presence of functional and, in particular, inflectional morphemes at the Prefunctional stage will be discussed in the following chapter.

On the assumption that functional categories are responsible for parametric variation and that they are missing in early child grammars, Prefunctional grammars should exhibit certain similarities crosslinguistically. In the absence of parameterisation one would expect differences between child and adult grammars to be attested while, on the other hand, similarities across child grammars are predictable given that the latter are exclusively UG-constrained. On the basis of these predictions, the crosslinguistic availability of null arguments and word-order variation, among other things, will be discussed.

Before I turn to the properties of clause structure at the Prefunctional stage there is an additional question which needs to be addressed concerning the issue of Maturation. Specifically, what are the characteristics of the stage subsequent to the Prefunctional one? Is it the case that all functional categories mature at the same time or is there a specific order of emergence, and if so, what regulates this order?

The first option, namely that maturation affects all functional categories simultaneously, although theoretically possible, is factually wrong. In other words, it is not the case that, from the age of two, children construct grammars with all functional categories available. Complementisers, for example, fail to appear until, roughly, the age of three while agreement, determiners and clitics appear much earlier. Passives are standardly assumed to appear even later than complementisers, while consistent subj/aux inversion in interrogatives appears earlier than passives but later than subject agreement. Such evidence suggests that functional categories appear in a specific order, though what exactly determines this order of maturation remains to be investigated.
Guilfoyle and Noonan (1988) suggest that the maturation of functional categories is a Structure-Building process in the sense that functional categories that are, configurationally, closer to VP appear before others. This is a plausible suggestion which, however, leaves passives unaccounted for, if one assumes that their syntactic derivation is a result of the presence of a passive morpheme in the clause structure. According to standard analyses of passive constructions (Baker (1988), Baker, Johnson and Roberts (1989) among others) the passive morpheme is structurally represented under I. However, in the framework of the Split-Infl Hypothesis (Chomsky (1991), Pollock (1989)), each category previously generated under I is assumed to head its own projection in the clause structure. It follows that similar considerations would apply to the structural representation of the passive morpheme. According to analyses of passives within the Split-Infl framework (e.g. Ouhalla (1991a)) it seems that the projection of the Passive morpheme immediately precedes VP. If this structure is correct then the Structure-Building Hypothesis requires certain modifications.

One possible way to reformulate it is to assume that the order of appearance of functional categories is subject to c-selectional properties only. In other words, functional categories can, in principle, appear in any temporal sequence provided that their subcategorisation requirements are fulfilled in any given structure. It follows from this, that a Passive Phrase headed by the passive morpheme will appear immediately above VP on the assumption that VP is c-selected by the head of the Passive phrase.

In order to establish the Structure-building hypothesis as a feasible approach to the language acquisition process, close examination of crosslinguistic data from stages immediately following the Prefunctional stage needs to be undertaken. If a uniform pattern of emergence appears, then the assumption that a pre-programmed maturational process is available will be strongly supported.
1.3.2.2.1. Clause Structure

The prediction that the theory of Maturation of functional categories makes with respect to clause structure at the Prefunctional stage is that it consists of projections of substantive categories only. My analysis concentrates on sentences that include a verb and its arguments. In this case the clause structure is argued to consist simply of a VP projection as illustrated in the following tree diagram\(^\text{14}\) (Radford (1990), Lebeaux (1988)):

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

Following recent suggestions in the literature (Kuroda (1985), Kitagawa (1986), Fukui (1986), Koopman & Sportiche (1988)), I assume that subjects are base-generated inside the VP projection. In the structure in (12) subjects are shown to occupy a VP-joined position either to the left or to the right of the verbal projection in order to satisfy the Predication requirement (Chomsky (1986)). The latter is a UG condition that requires predicates to be licensed by a c-commanding subject. Recall that the crucial claim that this theory makes is that UG principles are available in their entirety from the onset of language development. It thus follows that the Predication requirement should be met in the Prefunctional grammar. Subjects in the VP-joined position are thus argued to license the VP predicate. In this position, subjects are also assigned the external theta-role by the verb.

There are additional questions that need to be addressed in view of the structure in (12). In particular, the lack of substitution movement to the Specifier position of AGR-S and the Specifier position of AGR-O of subjects and objects respectively, requires further discussion. These derivations are excluded, in
Prefunctional grammar, by the absence of any functional projections outside VP. On the other hand, in adult language, the relevant movement processes are assumed to be motivated by Case considerations (Ouhalla (1991b), Chomsky (1992)). Assuming that the Case Filter which renders the assignment of Case-features to arguments obligatory, is a UG requirement, its availability at the Prefunctional stage is predicted. The implication of this assumption, however, is that arguments at this stage fail to be assigned Case in violation of the relevant UG constraint. This statement, although problematic at face value, will be extensively discussed in relation to the categorial status of arguments in the Prefunctional stage (see Ch.4). For the moment, it suffices to mention that the correlation between functional categories and Case-features assumed for adult language, will be shown to account for the apparent contradiction in relation to the availability of the Case-filter at the Prefunctional stage.

As far as the issue of word-order is concerned, recall that, in the theory of parameterisation adopted here, objects and subjects acquire a fixed position in the clause structure as a result of their movement to the Spec positions of AGR-O and AGR-S respectively. Moreover, the assumption that directionality restrictions are exclusively associated with functional heads gives rise to certain predictions as regards alternative word-order possibilities in Prefunctional grammars.

The flexibility of word-order patterns and the relevant crosslinguistic data will be extensively discussed in Chapter 5. The non-fixed position of subjects and objects will be shown to be supported by crosslinguistic data from the stage under discussion. Moreover, constraints on word-order patterns associated with the absence of functional categories will be emphasised in relation to the VSO order in languages like Greek, Spanish and Irish. Data from early German will be argued to show precisely that OV and VO options are instances of objects being base-generated to the left and right of the verb respectively. The argument depends crucially on the idea that the correlation between finiteness and verb-placement in early child German (cf. Clahsen (1991a), Jordens (1990), Weissenborn (1990) among others) is not an adequate characterisation of the situation.
One of the crucial underlying motivations for the VP structure in (12) has to do with the assumption that VP is the thematic domain of the verb (see section 2.4.). The structural representation of all arguments of the verb inside its projection is therefore necessitated by a conspiracy between thematic requirements of the verbal head and UG requirements such as the Projection Principle. In this respect, I will assume, following Higginbotham (1985), that information in the thematic grid of a verb includes an additional argument which, in Higginbotham's terms, is referred to as the E-position of the verb. According to Higginbotham's (op.cit.) analysis, the E-position is assumed to be discharged at the point where VP meets INFL in the structure. In the context of the theory presented here and in particular, of the clause structure in (15), a similar account regarding the discharging of the E-position is not available. I will maintain, however, that this E-position is indeed present in the theta-grid of the verb as part of a uniform requirement of UG on the thematic structure of verbs. On the assumption that VP constitutes the thematic domain of the verb, it follows that the E-position is represented in early grammars, albeit already saturated within the VP projection.

My account of the saturation of the E-position is closely related to the issue of inflectional affixation in Prefunctional grammars. In Chapter 3, the lack of finiteness in Prefunctional grammars will be discussed in the light of the inflectional morphology attested at this stage. Given, on the one hand, the absence of inflectional projections in early clause structure and, on the other, the UG requirement associated with the saturation of the E-position of the verb, an alternative account of this process will be put forward.

Another implication that arises from the VP structure in (15) concerns the absence of elements associated with the INFL-position. In particular, modals, auxiliaries, the copula/auxiliary and the "dummy" element 'do' in English, are predicted to be absent given that they belong to the functional class (cf. Ouhalla (1991a)). Note, crucially, that the common property of these INFL-elements in clause structure is that they carry inflectional, and, in particular, Tense and Agreement features. One of the common observations in the descriptive literature of language
acquisition is that these functional elements fail to appear in early stages of development crosslinguistically. In the theory presented here, this observation receives a straightforward explanation, given the absence of Inflection as a syntactic head. Alternatively, if it was true that finiteness was available at the Prefunctional stage, as argued in Continuity accounts on the basis of the inflectional morphology on main verbs, the absence of typically INFL-elements would remain mysterious.

To summarise, the basic assumptions of the theory presented here are the availability of UG Principles throughout the language acquisition process and the non-availability of functional categories due to maturational constraints. The predictions that follow from these claims have to do with the clause structure at the Prefunctional stage which consists of projections of substantive categories only. The absence of functional positions in the clause structure has a number of consequences regarding the crosslinguistic availability of null subjects, the absence of substitution-movement, the absence of Case-assignment, and the possibilities associated with word-order properties. On the other hand, the availability of UG Principles necessitates that thematic arguments of the verb be represented in the VP structure, on the assumption that VP constitutes the thematic domain of the verb. The thematic structure includes external and internal arguments as well as the E-position in the theta-grid of any verb. In configurational terms, the structural position of the subject is regulated by Predication and the EPP while the Projection Principle regulates the representation of complements.

1.4. Maturation of functional categories vs Continuity revisited.

In the two theories outlined in the preceding sections of this chapter, it is clear that there is some consensus among researchers about the theory of parameterisation concerned. In particular, a shared assumption is that properties of functional categories define parametric variation. Moreover, both theories agree on the availability of UG Principles throughout the process of language acquisition. However, the assumption that parameters are exclusively associated with functional
categories is not shared by both theories thus resulting in considerable differences in
the structural representation of early child speech. So, for example, in the syntactic
theory adopted by the Maturation hypothesis, the position of the complement with
respect to its head is assumed to be regulated by the presence of an AGR-O
projection outside VP, the implication being that in Prefunctional grammars both OV
and VO orders are possible. This is a straightforward prediction of a theory of
language acquisition which assumes the absence of parameterisation in the early
stages.

No such assumption, however, is made in the Continuity framework, where
it is implicitly assumed that the OV or VO order is not a derived but a base-
generated order probably regulated by the Head-Parameter of UG. Thus, according
to all Continuity accounts of early German the order of the verb and its complement
inside VP is head-final as in adult German. This assumption is necessary in order to
account for the alleged correlation between finiteness and verb-placement which is
assumed to instantiate V-movement to I in finite contexts while no such movement
is possible in infinitival contexts where the verb appears in final position.

Notice, crucially, that the assumption that the base-generated order is OV in
the early stages implies that whatever parameter is involved must appear already
fixed at the initial stage. In other words, no default value is assumed to be associated
with the parameter in question. On the other hand, it is assumed that the functional
head specified for finiteness occurs to the left of VP, otherwise no Verb-fronting in
finite contexts can be assumed. In principle, there are two choices as far as the
categorial status of this functional head is concerned, namely I or C. In the first case,
the presence of a CP projection requires independent evidence given that verb-
fronting can be argued to involve verb-raising to I. Furthermore, depending on the
syntactic analysis assumed for the target language, this assumption can either
conform with it or not. More precisely, if IP is assumed to be head-initial in adult
German (cf. Travis (1984), Haider (1992) among others), it follows that early German
appears with the target value right from the start. On the other hand, if IP is
assumed to be head-final in adult German (cf. Koopman (1983), Haegeman (1991)),

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early clause structure deviates from the adult choice for unspecified reasons. The position of I with respect to VP is not explicitly accounted for in terms of a parametric option. In other words, it is not clear whether this is another instance of the Head-parameter being set to the Head-initial as opposed to the Head-final value that it adopts with respect to the verbal head. If this is the case, then additional stipulations have to be made as to why some heads appear with the target value while others deviate from it, even though both are regulated by the same parameter.

Alternatively, it could be assumed that directionality restrictions associated with I are specified as parametric features on this functional category. In this case, the obvious question to ask is whether the occurrence of I to the left of VP instantiates a default setting while the adult option is 'marked' in the relevant sense (if I is head-final in adult German). All in all, it seems that although the underlying assumption in any Continuity approach is that the clause structure of early grammars is similar to the adult equivalent there are differences which, at best, can be attributed to a default vs non-default setting. The question again is why some parameters appear already set (e.g. the Head-final option inside VP) while others assume a default value.

With respect to the empirical evidence, the early child data that both theories have to account for involve certain crosslinguistic similarities (e.g. null subjects) and certain differences from their respective target grammars (e.g. null subjects in early English but not in adult English). Note that both the attested crosslinguistic similarities and the differences between child and target grammar receive uniform explanations in each theoretical framework. Continuity postulates the notion of default values in the definition of parameters which, in turn, are used to account for the choice of child grammars and any possible deviation from the adult grammar. The crucial point is that the notion of 'default' or 'unmarked' should apply across the board rather than to a subset of parameters. If UG makes the notion of 'unmarked' available then the null hypothesis is that there is one value in the formulation of each parameter associated with it. If this assumption is correct, then early grammars should instantiate default options across the board in the absence of parameters set
to the target value. This assumption is clearly contradicted by the claim in the Continuity account that the Head-parameter is already fixed with respect to the order inside VP (see references in section 1.2.1.).

The Maturation of functional categories hypothesis accounts for crosslinguistic similarities in early grammars and their deviations from the respective target grammars by assuming that the categories responsible for parametric variation are absent. Given that UG is not parameterised and is available right from the start, early grammars are predicted to exhibit common patterns in terms of syntactic options which differ from the options of adult grammars as these involve parameterisation. Thus, an analysis within this framework in principle predicts the nature of child grammars across languages.

This prediction, though never explicitly stated, could be argued to hold for an account within the Continuity Hypothesis as well. If early grammars instantiate UG options and default parametric values, it follows that any analysis suggested for early child data from a given language should account for data from the same stage in other languages. So, for example, if the default value of the parameter that regulates the governing properties of I is structural government, then it follows that this parametric option should be attested in crosslinguistic data of the same stage (cf. Pierce (1989)).

It seems, therefore, that the basic difference between Continuity and Maturation is reduced to the issue of the presence vs absence of default values in the grammar. In a strict Continuity framework, default values are necessary given the presence of functional heads and their projections (but see fn.5). These, however, can only be argued to exist if their role in early grammars is evidenced by specific syntactic phenomena (e.g. movement). In order to attribute a set of properties to a functional category it is necessary that such properties be instantiated in the grammar as 'defaults' in the formulation of the relevant parameter.

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Moreover, the absence of morphological realisation of a given functional category in terms of distinctions similar to the ones attested in the morphological paradigm of the target grammar is not crucial in a Continuity framework. Rather, the restricted presence of functional morphemes could be the result of the child being a 'conservative' learner in the sense that learning takes place in the form of an item-by-item process (Manzini, p.c.). Regardless of the morphological forms attested in early data, the claim is that abstract properties associated with each functional category are realised as (default) features on the functional head.

As far as the Maturation of functional categories approach is concerned, the absence of functional morphemes is just one indication of the absence of functional heads. In other words, it is not the case that the absence of the Agreement paradigm alone confirms the absence of an AGR-S projection. Rather, it is the properties associated with AGR-S in adult languages that do not appear to be available in child grammars: for example, the requirements for the distribution of null subjects. Similarly, the absence of a TNS projection is partly indicated by the absence of morphological Tense distinctions but, most crucially, by the absence of syntactic constraints regulating the distribution of finite/non-finite constructions in early child data. In particular, the occurrence of infinitival clauses as matrix clauses in child grammars is not found in adult grammars. In terms of the theory of Maturation defended here, Tense is not as yet grammaticalised in the sense that the functional category TNS is not available to the child.

Going back to the issue of 'default' values in the grammar, it seems clear from the discussion above that they are necessarily invoked in a Continuity approach while this is not the case according to the Maturation Hypothesis. As extensively and convincingly argued by Borer & Wexler (1987) the notion of 'default' can not receive a plausible justification within linguistic theory. In other words, there seem to be no a priori criteria in the formulation of a parameter according to which the 'unmarked' as opposed to 'marked' values can be defined. In Wexler & Manzini (1987) it is argued that the notion of 'default' in a set of parametric choices is basically regulated by the Subset Principle (cf. Berwick (1985)). This postulates a hierarchy in terms of
subset languages generated with respect to the construction associated with a certain parameter. The smallest language according to this hierarchy would constitute the 'default' value of the parameter in question.

Notice, however, that it is not the case that all parameters, as currently formulated, can be reinterpreted in terms of 'marked' and 'unmarked' values according to the Subset Principle. For example, neither the null subject parameter nor the INFL-parameter nor, for that matter, the Head-parameter of UG, all of which have been adduced to account for language acquisition data, can be shown to involve a 'default' value other than by stipulation. In the absence of any linguistic explanation as to what constitutes the 'default' choice of a parameter the only option is to assume that 'default' is the choice available in the absence of parameters set to the target value, i.e. the choice of early grammars. This, however, gives rise to circularity in the argumentation: The answer to the question why the child uses this parametric choice is that this constitutes the 'default' value. The answer to the question what constitutes a 'default' value is that this is the first choice of the child.

In sum, it seems that the claim that the Continuity approach constitutes the null hypothesis for an instantaneous model of language acquisition is not justified. If the null hypothesis is that child grammars are minimally different from adult grammars in terms of parameters not yet being set to the right value, this is a hypothesis shared by both theories. The crucial difference is that, in the Continuity framework, this hypothesis is interpreted as necessitating the presence of functional projections plus the burden of the dubious notion of 'default' values. The implementation of the notion 'default' as well as its inconsistent use in most analyses provided within the Continuity approach lacks theoretical justification.

According to the Maturation framework, however, parameter-setting is directly associated with a Structure-Building process which need not refer to 'default' values but rather, accounts for the data in terms of a UG non-parameterised grammar. It thus seems to me that on the basis of coherence and theoretical consistency, the Maturation of functional categories approach is to be favoured. What remains to be
shown is the empirical support for the predictions made by the theory of Maturation presented in this thesis. This is my task in the following chapters.
1. Borer (1984) argues that linguistic variation can be reduced to properties of the inflectional system. This includes inflectional categories as well as ‘inflectional rules’, such as the rule inserting a preposition before the NP in Hebrew Clitic Doubling constructions. The approach adopted in this thesis differs from Borer’s in a number of respects, as will become clear in the discussion.

2. Functional structure has been also argued to include categories such as Mood (Tsimpli (1990)), Aspect (Ouhalla (1991a), Tenny (1987)), Number (Ritter (1991), Rouveret (1990)) and Focus (Choe (1987), Brody (1990)).

3. Ouhalla’s (1991a) analysis of word-order variation across languages also involves different hierarchical positions of functional heads in the clause structure. These positions are the result of parameterisation associated with c-selectional properties of functional categories. Thus, the VSO order of languages like Berber and Arabic is argued to be the result of TNS being higher than AGR-S in clause structure. In SVO languages, the reverse hierarchical order of these functional categories is assumed.

   One of the underlying criteria that motivate Ouhalla’s assumptions regarding the order of functional categories in clause structure, is the order of the functional morphemes. Thus, the verbal complex \([V+AGR]+TNS]\), arguably found in VSO languages, is taken to reflect the underlying structural hierarchy of the categories involved, namely AGR-S lower than TNS. This is consistent with Baker’s (1985) Mirror Principle which formalises the assumption that morphological derivations reflect syntactic ones.

   As will become clear in the rest of this thesis, my view of the relation between syntax and morphology is incompatible with this approach. In particular, I will maintain that morphological processes are only indirectly associated with syntactic derivations (possibly in terms of SPELL-OUT in Chomsky’s (1992) model). Parameterisation is expressed in terms of abstract properties of functional categories which do not necessarily involve a 1:1 correspondence with the respective morphemes. Nevertheless, there is sufficient evidence to substantiate the claim that functional structure may differ in terms of the hierarchical position of inflectional elements (cf. Tsimpli (1990)), although most of the following discussion does not pertain to this issue.

4. The position of AGR-S higher than TNS has also been argued for in Belletti (1990) as far as the structure of the Romance languages and English is concerned. Pollock (1989) argues for a different structure where TNS is ordered higher than AGR-S in the clause structure. I will assume that the structure in (3) is the appropriate one for SVO languages as the relevant word-order is accounted for in a straightforward way.

5. The terms ‘underspecification’ and ‘default’ specification are not, strictly speaking, synonymous (Manzini, p.c.). A ‘default’ value is assumed to be one of the values associated with a given parameter. Thus, the ‘default’ value will also be the target value in certain languages. For example, in Hyams’s analysis, the positive value of the pro-drop parameter is the ‘default’ value as well as the target value in adult null subject languages. ‘Underspecification’, however, does not necessarily imply the
availability of parametric choices. Assuming, for example, that a certain parameter is associated with a functional category, the presence of the latter in clause structure may be characterised by feature-underspecification, i.e. neither positive nor negative specification. If this is the case, however, syntactic processes, such as verb-raising to a [+finite] I, are predicted to be inoperative given that they are triggered by the presence of specific features on the relevant head. In this respect, the assumption that functional projections are available, albeit underspecified, gives rise to predictions similar to the approach that assumes functional projections are absent. In other words, it is difficult to see in terms of empirical evidence, which approach is to be favoured. Theoretically speaking, however, the debate revolves around the question whether maturation can be invoked to account for language acquisition or not. In this respect, my position remains neutral.

6. Clahsen & Penke (1991) argue that the functional category in question is F(inite), rather than INFL. This distinction is based on the assumption that the categorial status of this functional head is not as yet specified as C or I, both of which, in adult language, can be associated with finiteness.

7. Weissenborn (1990) assumes that declaratives including verbs with finite morphology, in early German, have an IP status while interrogatives are CP's. Moreover, he argues that non-finite declaratives are VP’s.

8. I am greatly indebted to Melissa Bowerman for providing me with an extensive corpus of her data.

9. Although Weissenborn (op.cit.) does not discuss data from languages other than German, his claim that the ‘default’ value is the one adopted initially, gives rise to predictions that should, in principle, hold crosslinguistically. This implication arises in any analysis which assumes the notion ‘default’ in parameterisation (see discussion in section 2.3.)

10. The terms ‘UG-unconstrained’ and ‘UG-constrained’ maturation are taken from Wexler (1989).

11. The semantic structure that Felix (1984) suggests is argued to represent any kind of semantic relation at this stage. For example, a phrase such as ‘here more paper’ is as in (i):

\[
\begin{array}{c}
R'' \\
R \\
R \\
R \\
X
\end{array}
\]

R, called a ‘Relational’ category is assumed to project onto the phrasal level, hence the single/double-bar notation. Unlike X' -structure however, the status of the phrasal category in (i) is assumed to express the modifying relation involved, hence its identity with the (semantic) status of the modifiers.
12. The assumption that there exists an independent module inside UG, referred to as the FM, is an attempt to formalise the distinct status of functional as opposed to substantive categories. If it is true that parameterisation is associated with the closed-class elements exclusively, it is plausible to assume that this set constitutes a natural class. Independent evidence for the existence of the FM can be adduced from second language acquisition (Smith & Tsimpli (1991) Tsimpli & Smith (1991), Tsimpli & Roussou (1991)) as well as from pathological cases of language impairment (Ouhalla (1990a)). As for first language acquisition, if future research provides further evidence supporting a maturational account of the emergence of a functional structure, the assumption that the FM is affected gives rise to a more specific, coherent and explicit theory of language. Nevertheless, the empirical evidence discussed in this thesis as well as the analyses suggested, do not depend on assumptions concerning the presence of the FM in the language faculty.

13. An apparent problem for this suggestion is that Complementisers appear in the highest structural position crosslinguistically. It could, thus, be argued that the Structure-building process, as constrained by selectional restrictions, fails to apply to all functional categories as no variation exists in the case of Complementisers. It seems to me, however, that the case of Complementisers does not falsify the general assumption concerning the Structure-building hypothesis. One possibility would be to argue that Complementisers do not have c-selectional properties as suggested by Ouhalla (1991a), their role being that of nominalising the clause. If this is correct, their hierarchical position would necessarily be the highest in the structural representation. On the other hand, it has also been argued that C exerts selectional restrictions on the [+/-finite] features on I (cf. Agouraki (1991)). In this case, the position of C presupposes the presence of an I (or TNS) category in the clause structure. The invariable position of C could, in this case, be accounted for along the lines suggested for other functional categories.

14. Early sentences which include nouns, adjectives and prepositions will not be discussed in detail. My intuition, about this set of data is that verb-deletion (possibly at the phonetic level) is not a desirable option as such an assumption can be neither supported nor falsified by empirical evidence. I will, therefore, assume along with Radford (1988), (1990) that these sentences can be argued to involve a Small-Clause structural representation although, I think, more needs to be said with respect to their temporal or aspectual specification.

15. The assumption that the order inside V' is unfixed and that the presence of an AGR-O projection gives rise to a fixed ordering between the verb and the complement could, in principle, also be assumed within a Continuity approach (Manzini, p.c.). Given that this assumption is associated with the syntactic theory adopted, it could be argued that the issue of whether parameterisation is exclusively associated with functional categories is independent of a Continuity vs Maturation account for language acquisition. In this hypothetical situation, I assume that a more elaborated functional structure in early grammars should be adopted (e.g. including an AGR-O projection) given that the claim within a Continuity account remains the same, namely that the Verb-complement order is fixed right from the start. To the
16. Note that, if IP is the only functional projection assumed to be available from the beginning and is also head-initial, the verb-fronting process cannot be argued to be an instance of the V2 phenomenon. The latter is standardly associated with movement to C and presupposes the presence of an element in preverbal position. In this case, however, verb-raising to I in German would be subsumed under a more general analysis of V-to-I movement also including other languages, e.g. French.
2.1. Introduction

In the absence of functional categories, in particular, in the absence of inflectional heads from the clause structure two alternative predictions are made about the occurrence of verbal forms in data from the Prefunctional stage. The first is that inflectional affixation will be all but absent from the relevant data. This claim is consistent with the findings of traditional approaches (Brown (1973), Clark & Clark (1977) among others) with respect to early English. Radford (1990) provides a detailed description of the absence of the infinitival marker 'to', modals, auxiliaries, the dummy element 'do' as well as any morphological Tense and Agreement distinctions.

Although these facts strongly suggest a one-to-one correspondence between morphological forms and their structural realisation, crosslinguistic data from the same stage as well as some other English data do not seem to support this claim. In particular, data from early German, French, Greek, Irish, Spanish and English involve a certain amount of variation in the inflectional affixation that appears on the verbal stem, even though this is very limited compared to that of the target grammars.

The alternative prediction made by the theory presented here, is that the absence of functional projections implies the absence of the abstract properties associated with the respective functional heads. It does not, however, imply the complete absence of functional morphemes whose morphological realisation is necessitated by certain UG requirements, already operative at the Prefunctional stage. In what follows, I will try to show that the second prediction is actually supported by the facts of early child speech drawn from English, French, German, Spanish, Greek and Irish.
The restricted set of inflectional affixes that appear in the early data from each of these languages includes forms that correspond to morphologically non-finite inflection (infinitives, participles, gerunds) as well as finite forms (basically, present tense inflection). Given the crosslinguistic similarities in the choice of inflectional morphology used at the Prefunctional stage as well as the absence of, in particular, the finite paradigm, vis-a-vis the corresponding adult forms, it will be shown that temporal specification in early grammars involves aspectual rather than tense distinctions. The descriptive account of verbal forms in Prefunctional grammars is based on Smith’s (1991) approach to Aspect. The analysis put forward in section 2.4. is formulated in the framework of the theory suggested in this thesis.

2.2. On the notion of Aspect

The notion of Aspect has received considerable attention in both traditional and more recent approaches to the temporal structure of sentences (Comrie (1976), Vendler (1967), Dowty (1979), Lyons (1977), Tenny (1987)). In many cases, Aspect has been viewed in terms of its semantic and/or syntactic role in clause structure and interpretation.

For current purposes, I will restrict myself to a brief discussion of the various possibilities that Aspectual information encodes with the aim of analysing early verbal forms in a principled way. The terminology and definitions I will adopt are drawn, to a large extent, from the extensive study of the notion of Aspect and its grammaticalisation across languages in Smith (1991).

Aspectual meaning is assumed to contribute to the temporal information conveyed by the sentence; that is, it can be viewed as the element that provides the temporal organisation of the sentence. According to Smith (1991), there are two independent aspectual components whose interaction gives rise to the overall aspectual meaning of a given sentence; situation type and viewpoint. Of
these components, morphological affixation encodes primarily viewpoint aspect, while situation types are assumed to be conveyed by substantive elements:

"The viewpoint is generally indicated morphologically, with affixes or special forms; the situation type is indicated by a composite of verb, arguments, and adverbials. Thus the forms that specify each aspectual component coexist in a sentence" (Smith 1991:Introd.).

In other words, situation types include what is also referred to as synthetic aspect which involves the use of aspectual adverbials (e.g. 'already', 'yet' in English) as well as the inherent aspectual meaning of verbs. The basic situation types include distinctions between states, accomplishments, achievements, activities, and semelfactives:

(1) a. know the answer (state)
b. stroll in the park (activity)
c. build a house (accomplishment)
d. cough (semelfactive)
e. reach the top (achievement)

Situation types are further identified in terms of the interaction of three features [+/- static], [+/-telic] and [+/- durative] (Smith (op.cit.)).

Viewpoint aspect involves a basic tripartite distinction of perfective, imperfective and neutral. The differences among the three viewpoints concern the presence vs absence of initial and final points in the description of the situation (adapted from Smith 1991:6):

(2) a. Perfective specifies initial and final points
b. Imperfective does not specify initial or final points
c. Neutral specifies the initial point and at least one internal stage

The interaction of situation types and viewpoints gives rise to a (finite) number of possibilities in aspectual interpretation, subject to crosslinguistic variation. Crucially, however, it is assumed that aspectual situation types are not language-dependent "...but are based in human cognitive abilities. People distinguish between the basic situation types on the basis of their perceptual and cognitive
faculties..." (Smith 1991: Introd.).

In the context of the acquisition theory presented here, this claim can be viewed in terms of the distinction suggested in Ch.1, between functional and substantive elements. If situation types are universal in the sense suggested for substantive elements, their availability in Prefunctional grammars follows. As far as aspectual morphology, encoding viewpoint aspect in Smith's terms, is concerned, its grammaticalisation differs from one language to the other. The distinct status of situation types and viewpoint aspect, in terms of their realisation within the grammar (synthetic vs morphological), can possibly be argued to reflect an underlying difference in their representation in the mind.

In particular, the observed difference could be argued to reflect a distinction between functional and substantive categories. In this case, situation types are assumed to be part of the mental lexicon while morphological (viewpoint) aspect is assumed to be part of the Functional Module (FM). I will come back to this issue in section 2.4. For the moment, it should be emphasised that, if the interface (morphological) level includes both substantive and functional morphemes, the possibility of aspectual morphology at the Prefunctional stage is accounted for.

Before I move on to the discussion of data from particular languages, certain preliminary observations need to be made. It is common ground in the traditional literature of language acquisition that early verbal forms from the stage under discussion, exhibit distinctions between aspectual categories in a consistent way. Brown (1973) points out that the progressive form in early English is consistently used with non-stative verbs from the very beginning. Overgeneralisation, giving rise to ungrammatical sequences such as 'I am loving you' fail to occur, contrary to later overgeneralised patterns involving the use of Tense morphology. Aksu (1978) makes similar remarks with respect to the use of aspectual markers in early Turkish. Again, the use of the perfective and imperfective morphemes appear initially with non-stative verbs. Antinucci &
Miller (1976) also argue that the distinction between stative and non-stative verbs is one of the earliest to appear in early Italian. Their account of the use of the past participle is expressed in terms of aspectual notions (situation type in Smith’s (1991) terms):

"They seem to have assigned a function of ATTRIBUTION to the past participle. In other words, the children treat the past participle as an adjective: it describes a state of the object...The children are using the past participle to describe the END-STATE of a process or action" (Antinucci & Miller, 1976:172).

In sum, aspectual distinctions observed in early data crosslinguistically involve an interaction between situation types and viewpoints. Participle forms can be argued to express accomplishment/achievement situation type, while perfective/imperfective morphological distinctions belong to viewpoint aspect. The stative/non-stative distinction (situation type) is also exhibited in connection with the progressive/non-progressive one. The latter is assumed to be part of imperfective viewpoint aspect, hence the interaction between situation types and viewpoints is illustrated in these cases as well.

Recall that, in the tripartite distinction in (2), the third viewpoint aspect suggested by Smith (1991), is referred to as ‘neutral’. Note, crucially, that the term ‘neutral’, according to the author, does not entail the absence of aspectual viewpoint. On the contrary, she rules out the possibility of aspectually vague sentences having no viewpoint and, thus, allowing free interpretation (Smith, 1991:120).

The crucial characteristic of neutral viewpoint is that it allows for contextual information to determine a specific reading (open vs closed): "The neutral viewpoint allows both open and closed readings. Its span includes the initial point and at least one internal stage of the situation...Thus, unlike the imperfective the neutral viewpoint allows closed readings by inference" (Smith, 1991:123).
Examples of aspectually vague verbal forms (neutral viewpoint), according to Smith, are the Present and the Future tense forms in French, which can receive an open or closed reading depending on the context (see fn.1). Note that, in this respect, it could be argued that infinitival forms, at least in early grammars, are neutral as alternative readings can be obtained depending on contextual information (also subject to the situation type that the verbal element belongs to). Assuming that Tense is not part of the early grammar at this stage, the aspectual meaning associated with infinitival forms is vague.

Similar assumptions can be made with respect to the use of 'finite' forms, mainly restricted to Present tense in early data. Their aspectual meaning, however, also depends on language-specific morphological properties. A fully-fledged account of all verbal forms used at the Prefunctional stage requires a closer look at the data from each language, to which I turn immediately.

2.3. Tense or Aspect?

2.3.1. Modern Greek

In adult Greek verbs do not exhibit a form without aspectual specification. Aspect is marked by a change in the vowel and/or the final consonant of the verbal stem (cf. Philippaki-Warburton (1970), Mirambel (1959) for a detailed discussion of the morphological structure of verbs in Modern Greek). Ignoring cases of lexical suppletion where the two aspectual forms of the verb do not share a common root, verbs in Modern Greek can be classified into three groups according to the pattern they exhibit.

The first group, exemplified in (3a) involves a change in the vowel, with the result that the two forms do not share a syllabic root. The second group involves a contrast in the final consonant of the verbal stem thus showing a common syllabic root (3b). The third group uses both of the above patterns in that aspectual distinctions involve both a change in the vowel and in the final
segment of the stem. The result, again, is that no syllabic root is shared by the
two aspectual forms in (3c):

(3)  
a. men-o / min-o  
    stay-imperf-1s / stay-perf-1s
b. ski-z-o / ski-s-o  
    tear-imperf-1s / tear-perf-1s
c. dhi-n-o / dho-s-o  
    give-imperf-1s / give-perf-1s

The morphological distinctions involved indicate that Aspect is included in the
verbal stem as it is impossible to define a verbal stem in Modern Greek independently of Aspect.

Tense is not morphologically marked in all possible Tense interpretations in Modern Greek. In particular, [+/- Past] distinctions are specified (subject to phonological constraints) by the presence vs absence of a prefix e- on the verbal stem. The combination of the past tense prefix and aspectual marking results in the two verbal forms known as the Imperfect and the Aorist, corresponding to the English Past progressive and Simple Past tense respectively:

(4)  
e-men-a / e-min-a  
past-stay-imperf-1s / past-stay-perf-1s
"I was staying" / "I stayed"

Present tense is not morphologically marked by an independent morpheme in Modern Greek. Rather, the verbal form marked for imperfective aspect is interpreted, probably as a result of underspecification of tense features, as Present tense. Present tense could, thus, be considered the ‘default’ interpretation in the absence of any morphological tense specification.

Future tense involves the use of a modal particle tha with the verbal form marked for either + or - perfective:

(5)  
tha meno / tha mino  
will stay-imperf-1s / will stay-perf-1s
"I will be staying" / "I will stay"
Na is another particle which introduces constructions whose distribution partly overlaps with that of infinitival clauses in English\textsuperscript{5}. It is also used as a Mood marker in imperatives and subjunctives (cf. Ingria (1981), Veloudis & Philippaki-Warburton (1983), (1984), Rivero (1987), Tsimpli (1990)). Notice, crucially, that, in certain cases, the absence of the particles na or tha gives rise to an ill-formed structure. In particular, verbal forms which are [+Perfective], [-Past] require the presence of one of the particles in order for the resulting structure to be grammatical:

\begin{equation}
\begin{array}{l}
 *(na) / *(tha) \text{ ghiriso} \\
 \text{prt. return-perf-1s}
\end{array}
\end{equation}

Bearing these facts in mind, let us now turn to the facts of Greek language acquisition.

The central observation about the modal particles na and tha is that they are not productively used in the early stages. According to her corpus, Katis (1984) claims that the first stage of acquisition shows no particles whatsoever. The marking of modal vs non-modal forms, she argues, is accomplished through Aspectual specification. As far as the use of forms which denote an event in the past is concerned, Katis observes the failure, on the child’s part, to differentiate between perfective past and non-past forms\textsuperscript{6}. She claims that in a number of cases, completion of an event is marked by the use of the past participle rather than the corresponding main verb marked for past tense. She concludes that reference to Past time by morphological tense distinctions is not operative at this early stage.

In the corpus of data from the two children studied here, there are a few verbs that do appear in the Past form:
Notice that, the form 'epese'="fell" and 'teliose'="finished" occur in more than one case. However, these verbs do not appear in the Present (imperfective) form at this stage. This fact, as well as the limited number of verbs in Past form at this stage indicates that Past tense is not as yet productively used by the child.

Stephany (1986) makes similar observations, focussing specifically on the use of modality and aspectual marking in early Greek. As far as the productivity and appropriate use of aspectual distinctions is concerned she claims: "A detailed analysis of the verb forms of all ten transcripts of child speech has shown that perfective and imperfective verb stems are already formally distinguished in more than 90 per cent of all tokens by period I" (Stephany, 1986:379).

The examples in (8) are representative of the stage under discussion:

\[(8) \]
\[
a. \text{zoso katali (1;7)} \quad \text{give-Perf-1s spoon} \\
b. \text{valueme musiki (1;8)} \quad \text{put-Perf-1p music} \\
c. \text{kopeles hoevune (1;9)} \quad \text{girls dance-Imp-3p} \\
\]
As shown by the above examples, verbal forms at this stage are morphologically marked for both Aspect and Agreement in that order. Leaving aside the presence of morphological Agreement for the moment (see Ch.3), notice that the examples in (8a&b) are marked for perfective aspect while neither the past tense prefix nor the modal particles are present. Their interpretation in terms of time reference is present/future, but the absence of a modal particle gives rise to ungrammaticality vis-a-vis the adult system, like that in (6). The well-formed counterparts of (8a&b) are given in (9a&b) respectively:

(9) a. Tha dhoso to kutali.
   will give-perf-1s the spoon
   "I will give the spoon."

   b. Na/Tha valume musiki
   prt. put-perf-1p music
   "Let's put on some music./We will put on some music."

The verbal form used in (8c), on the other hand, is a possible one in adult speech, the interpretation being present (+/-progressive). In other words, the difference between (8a&b) and (8c) is basically a difference in aspeccual specification. (8c) is in the imperfective form which, in adult speech, is used to mark Present or Future time in the absence of overt Tense morphology.

What seems to be missing in the child utterances in (8a&b) is a modal/tense marker which, in adult speech, is realised syntactically as the head of IP/TNSP (or MoodP). It should be mentioned that examples like (8a&b) are abundant in the corpus of Greek child data. Further 'ungrammatical' examples are given in (10):
To summarise the discussion so far, data from early Greek show that Aspectual distinctions are operative at the Prefunctional stage while Tense distinctions are missing. If the [+/-finite] distinction is identified with a difference in the morphological make-up of the verbal form then it is far from clear that this distinction is available at this stage of acquisition. Notice, crucially, that, in adult speech, na and tha occur in both non-finite and finite contexts. Their absence, therefore, suggests that the absence of an appropriate syntactic position in the clause structure is associated with the binary feature [+/-finite]. The presence of aspectual distinctions at the Prefunctional stage will be discussed in section 2.1.3.:

Before I move on to discuss data from French and German there is an additional point that I would like to stress concerning Aspectual vs Tense distinctions. Greek, as shown above, instantiates the two categories, Aspect and Tense, using distinct morphological affixation. In this sense, Greek resembles Russian and other Slavonic languages which make use of both aspectual and tense morphology, while it contrasts with languages like French and German which merge aspectual and tense distinctions in the same inflectional affixes.

The prediction made for the Slavonic languages is that, as in Greek, the emergence of inflectional Aspectual morphology should precede the emergence of Tense marking. According to one study (Radulovic (1975)) on the acquisition of Serbo-Croatian, this prediction appears to be confirmed. Radulovic claims that
distinctions such as the perfect-imperfect are acquired quite early and precede tense distinctions.

2.3.2. German and French

The absence from early Greek data of an overt modal or Tense marker is reminiscent of data from early child German and French where verbs in the infinitival form can occur in matrix clauses. Examples are given in (11) and (12) from German and French respectively:

(11) a. mädi lafen (Miller, 1976)
    girl sleep
b. sofa fahren
    tricycle ride
c. lala suchen
    pacifier look-for
d. mone schlafen
    Mone sleep
e. papa suchen
    daddy look-for
f. mama sitzen
    mummy sit

(12) a. promener bebe (Pierce, 1989)
    walk baby
b. encore manger la poupee
    again eat the doll
c. papa reparer le tracteur
    daddy fix the tractor
d. Michel dormir la
    Michel sleep there
e. vider la terre moi
    clear the ground me
f. monsieur conduire
    man drive

What these data and the Greek ones in (10) share is the absence of a [+finite] feature marked on the verb or on an independent auxiliary/modal element in the sentence, thus giving rise to ungrammatical structures.

Along with examples where the verb appears to be in the infinitival form,
early German and French also exhibit verbal forms with finite endings as shown in the following examples:

(13)  
   a. licht seh (Clahsen, 1991a)  
       licht see-0  
   b. mone weint (Miller, 1976)  
       Mone cries  
   c. das auch passt  
       this also fits  
   d. mone auch läft  
       Mone also sleeps  
   e. oma kommt  
       granny comes  
   f. hier bett leg (Jordens, 1990)  
       here bed lay-0

(14)  
   a. lit maman (Pierce, 1989)  
       reads mummy  
   b. fait du bruit la voiture  
       makes noise the car  
   c. papa travaille  
       daddy works  
   d. pleure pas garcon  
       cries not boy  
   e. mord moi  
       bites me  
   f. bebe veut papa  
       baby wants daddy

(15)  
   a. est tombe moi  
       is fallen me  
   b. le disque est ferme  
       the record is closed  
   c. est casse  
       is broken

As shown by the French data in (14) and (15) it appears that Present tense forms as well as compound Past forms are used at the early stages of acquisition. It is noteworthy, however, that the latter appear rarely with and frequently without the auxiliary verb (Gregoire (1947), Clark (1985)). Similarly, Meisel (1985) points out that the use of participial forms without an auxiliary is attested from the age of 1;6 onwards. On the basis of contextual information, he concludes that the use of participial forms does not always encode change-of-state. Rather, participles
are also used to attribute a state to the object in the context.

This is consistent with Antinucci & Miller’s (1976) observation about the use of participles in early Italian (see section 2.1.1.). In terms of aspectual categories, participial forms can be argued to encode stativity as well as accomplishment or achievement. All of these categories belong to the situation types in Smith’s (1991) classification of aspectual meanings. Early verbal forms in French can thus be argued to encode the distinction between [+-Past] by the use of Aspectual rather than Tense markers. In adult French the marking of Aspectual and Tense features is morphologically merged in the same inflectional affixes. Thus, the interpretation of the use of inflectional affixation in early French is not as clearcut as in languages like Greek where Aspectual and Tense specifications are morphologically distinct. The earliest verbal forms used in French are, in the vast majority of cases, infinitival forms of the first conjugation, though the use of Present tense endings on a par with participial forms has also been attested (Gregoire (1937), (1947)).

Despite the morphological overlap of Tense and Aspect in French, it seems that Aspectual distinctions are used quite early in early French while Tense and Mood distinctions appear after the ages of 2;0 and 3;0 respectively: "French speaking children appear to make relatively few aspectual errors. Initially they use the compound past (at first in the form of the past participle alone) for results and changes of state" (Clark, 1985:720) (emphasis mine).

As far as the ‘finite’ forms in (14) are concerned, recall that they are assumed to have a neutral aspectual viewpoint (Smith (1991)). Thus, unlike Modern Greek, where Present is overtly marked for imperfective aspect, in French the corresponding forms are aspectually vague. Given that the aspectual reading in verbs with neutral viewpoint is determined by contextual information, the forms in (14) are also interpreted in this way. The crucial point to stress, however, is that these forms also encode an aspectual meaning.
Concerning the status of the infinitival forms in French, Lightbown (1977) points out the difficulty in transcribing infinitival forms in '-er', which in oral production are generally indistinguishable from participial forms. The criterion she uses to classify them as infinitives is their temporal reference to an ongoing activity rather than a completed event. Notice, however, that completion vs non-completion of an event should be interpreted as an aspectual rather than a tense distinction. If ongoing activity is expressed in child speech by either a finite or a non-finite form, the two forms cannot be viewed as denoting a deictic distinction of tense.

Moreover, given that the distribution of finite and non-finite forms overlaps, there is no principled reason to assume that the child makes use of the two forms as the realisation of a + or - finite feature associated with the functional head INFL (or TNS). Rather, it appears that infinitival forms used in the context of a description of an ongoing activity denote imperfectivity, as is also the case with finite forms with a present tense affix.

We can further distinguish infinitival forms with the imperfective reading as denoting the progressive vs non-progressive contrast. This distinction is assumed to be based on the nature of the verb, in particular, state vs action verbs (Tenny (1987)). Assuming that state verbs (situation type) are inherently compatible with imperfective viewpoint, their aspectual interpretation would be that of imperfective, -progressive. Action verbs, on the other hand, when occurring in the infinitival form, have an imperfective, +progressive aspectual interpretation. This is consistent with Lightbown’s context-driven suggestion, that those (locative) action verbs in the infinitival form found in the early French data were used to describe non-completed events.

In this respect, it is clear that the interaction between situation type and viewpoint aspect is available in the case of infinitival forms. Note, however, that, as with the 'finite' forms in (14), the aspectual meaning of infinitival forms is not morphologically marked. Rather, it depends on contextual information at the
time of utterance. It could, therefore, be suggested that the aspectual viewpoint of infinitives is also neutral. The imperfective reading attributed to their use is contextually, rather than morphologically deduced. If this is the case, it is possible that the use of infinitival forms may also convey a closed reading. In such cases, the interpretation is incompatible with imperfectivity (cf. Smith (1991)). Thus, both the ‘finite’ forms in (14) and the infinitival ones in (12) receive a similar account in terms of neutral aspectual viewpoint. If this is correct, the attested overlap in the distribution of ‘finite’ and infinitival forms receives a straightforward explanation.

To summarise the discussion so far, I have argued that the use of different inflectional affixes in early French encodes Aspectual rather than Tense distinctions. All forms used are unspecified for Tense features while the distinction between [+/-Past] is reinterpreted in terms of completion vs non-completion of an event, i.e. aspectual specification (situation types). Verbal forms that appear with the infinitival or present tense ending are aspectually unmarked, thus qualifying as aspectually vague forms.

On the other hand, participial forms encode the aspectual meaning of accomplishment, stativity or achievement, all of which denote situation types. Clearly, there exists interaction between the verb’s inherent aspectual meaning (e.g. stative/non-stative) and the neutral viewpoint in the case of Present and infinitival forms. On the assumption that Tense distinctions are not operative at the Prefunctional stage the occurrence of apparently finite and infinitival forms in matrix clauses ceases to be problematic.

The fact that infinitival verbs in matrix contexts are excluded from adult grammars probably stems from the requirement that independent temporal reference (deictic tense) is necessary for the logical interpretation of a proposition. In syntactic terms, this can be interpreted as a requirement imposed on a functional head (INFL) which, in matrix clauses, bears tense features. In embedded infinitival or Tense-dependent contexts, however, the relevant
requirement is fulfilled by the presence of these tense features on the matrix verb. The temporal interpretation of the embedded clause is thus 'dependent' on the matrix INFL (Picallo (1984)). If INFL was available at the stage under discussion it would follow that the relevant constraints on the distribution of infinitival verbs in matrix clauses should be observed, contrary to fact.

As far as the German data are concerned, verbs with the -t ending have been argued to predominate in early stages in constructions other than infinitival ones (cf. Clahsen (1991a, 1991b), Felix (1987)). Jordens (1990) argues that in some cases where the -t ending appears, it is not intended to express third person singular but rather, a participial form. In Tracy (1991), it is also suggested that in some cases where the -t ending appears it is used to denote the completion of an event or action. If this is correct, we should exclude from the so-called 'finite' forms the ones that stand for participles. The latter are standardly assumed to be specified for aspectual morphology and, in particular, the perfective reading.

Moreover, as in French, the use of participles may vary according to situation type. The relevant interaction between the latter and viewpoint aspect is available as in the case of French participles. In this respect, Meisel (1985) points out that the use of participial forms in early German is not as frequent as in early French. In particular, he claims that a comparison between the German and French data from the same stage is suggestive. More precisely, early German makes use of adjectives or adverbials in contexts where early French would use participial forms (Meisel 1985:346):

(16) a. parti : weg, alle
gone away, finished (adv.)
b. casse : kaputt
broken broken (adv.)
c. tombe : runter
fallen down (adv.)
d. fini : fertig, alle (alla)
finished finished (adj.) finished (adv.)
e. ouvert : offen, auf
opened open (adj.) open (adv.)
Whereas in the corpus of French data, participles are used from the age of 1;6, in the corpus of German data, the first occurrences of (morphologically correct) participles is from the age of 2;1 onwards. These facts can be readily accounted for in the light of the assumptions concerning aspectual meanings. Recall that, situation types (or synthetic aspect) are encoded by non-morphological means (e.g. verbs, adverbs). If participial forms are, in some cases, used to convey situation types (e.g. accomplishment, achievement, stativity), adverbials and adjectives can also be used as they can also convey similar aspectual readings. Thus, the data in (16) provide further support for the assumption that it is the availability of Aspect in early grammars which is responsible for the realisation of certain verbal forms as well as for the crosslinguistic differences in its lexical representation.

The distribution of finite and infinitival forms in German seems to overlap, as in early French. In other words, both finite and infinitival forms occur in matrix clauses whereas no apparent distinction in terms of the presence vs the absence of the deictic use of tense seems to be available. As we will see in the discussion of null subjects, the presence of finite and non-finite forms does not give rise to differences in the distribution of null subjects, contrary to standard assumptions about adult grammars. All in all, it seems that, although morphologically the child seems to use +/-finite forms, the constraints on their distribution in adult grammars are not available at this early stage. On the assumption that functional heads, and in particular, INFL is available in the clause structure, these differences between child and adult grammars remain mysterious.

On a par with early French data, German data from the stage under discussion involve the use of the same inflectional affixes, namely infinitival, present tense and participial forms. In the context of the current theory, the observed parallelism in verbal forms can be accounted for in terms of Aspectual meanings. Completion of an event or action (situation types of accomplishment or achievement) as well as stativity is encoded in the participial form (cf. Tracy
Infinitival and finite forms, on the other hand, are assumed to have a neutral aspectual viewpoint with the closed or open reading determined by contextual information, as in early French.

2.3.3. English

There have been numerous extensive studies of the acquisition of English, which basically make similar observations as to the impoverished nature of the inflectional system at the stage referred to here as the Prefunctional stage (Brown (1973), Clark & Clark (1977), Bloom (1991), Radford (1990) among others). Despite this fact, verbal forms in early English data do not lack inflectional morphology altogether. In particular, verbs marked for -ing and -en forms are frequently used along with verbs in their bare form. On the other hand, regular verbs marked for past tense with the -ed ending as well as modal verbs, auxiliaries, the dummy 'do', the infinitival marker 'to' and the copula are not productively used (cf. Radford (1990)).

These facts clearly indicate that elements that are standardly assumed to encode finiteness in terms of Tense and Agreement features on a functional head are missing at this stage. Notice, however, that the absence of Inflectional features does not account for the presence of the set of verbal forms used in the early data. This is the issue I will address next, concentrating on the presence of the -en and -ing endings as opposed to the absence of the -ed form.

Some illustrative examples of the verbal forms available at the Prefunctional stage are provided in (17)-(19):

70
(17) a. Baby talking (Radford (1990))
b. Bee going window. Wayne sitting gate.
e. Her going on walk.
f. Her bringing me more.
g. Roland coming as well.

(18) a. Daddy gone. It gone in.
b. Baby gone out.
c. Him gone.
d. Bunny broken foot.
e. Wayne taken bubble.
f. teddy fallen over. Tractor broken. Drink gone.
g. Daddy drawn. Mummy thrown it.

d. Me have biscuit.
e. Pig go in. Baby Laura eat it. Man go up there.
g. Geraint push me. Me want one. That go round.

The examples in (17) and (18) are ungrammatical in adult English due to the absence of the copula and the auxiliary respectively. Radford’s account of the absence of these elements is based on the assumption that they are functional categories, hence not available as yet at the Prefunctional stage. The question why these inflectional endings are used at this stage, however, remains open.

In other words, if the copula and the auxiliary are indeed excluded from child grammars, the possibility of the bare form of the verb being the only choice in child grammars is not excluded. The assumption that finiteness is not morphologically (or syntactically) realised at this stage, true though it may be, fails to make any predictions about the availability of one or more verbal forms at this stage.

Ignoring, for the moment, the status of verbs in their bare form, the standard assumption about the categorial status of the -en and -ing forms is that
they are aspectual elements denoting the perfective and the imperfective progressive respectively. Moreover, these morphemes are assumed to get attached to the verbal stem by a process of lexical rather than syntactic affixation (??). In adult English, aspectual marking is, to a certain extent, merged with tense marking, as is the case for example with the -ed ending which is specified both for perfective and past tense features.

Similarly, Present tense is morphologically underspecified, being basically identical to the bare form (apart from the -s in the third person singular). This form also has an aspectual, in particular, an imperfective reading. This imperfective reading is shared with the -ing form which it contrasts with it in terms of progressive vs non-progressive (i.e. habitual) reading. It thus appears that the only pure cases of aspectual marking are the participial and the progressive forms.

Going back to early English data, the overall picture of inflectional morphology is quite consistent with the facts of Greek, French and German. The basic distinctions made by verbal affixation are, again, aspectual, specifically marking the binary choice between perfective and imperfective. Perfectivity is encoded in the use of the participial form which denotes completion of an event or action. In this case, perfective viewpoint interacts with the situation type to which the verb belongs.

V+ing as well as bare forms encode the imperfective reading with a further subdivision of [+/-progressive] assumed by the former and the latter respectively. In these cases, also the interaction between situation type and viewpoint gives rise to different aspectual meanings. Activity, accomplishment and achievement verbs can be associated with the imperfective progressive viewpoint, contrary to statives. As discussed in section 2.1.1., early English data do not show any overgeneralisations in the combination of situation types and aspectual viewpoint.
In sum, the presence of aspectual rather than [+/-finite] features readily accounts for the set of verbal forms used in early English. If Inflection was indeed available as a functional position outside VP in early clause structure then the non-availability of tense morphology as opposed to the presence of aspectual morphology, would remain unaccounted for.

2.3.4. Irish and Spanish

Irish is a particularly interesting case for the claims of the theory presented here for two reasons. First, it is assumed to be a strict VSO language (cf. McCloskey (1983)), which makes Irish acquisition data a challenge for the theoretical prediction that VSO is excluded in principle at the Prefunctional stage. If VSO is the only input available while its structural representation in early grammars is not, acquisition data should reflect in a direct way the extent to which what is ‘possible’ in terms of abstract representations overrides both individual variation and the role of the input.

Secondly, Irish presents an interesting case with respect to verbal morphology and, in particular, aspectual affixation. Along with fully inflected main verbs in initial position, the use of Vns (Verbal nouns) and Vadj (Verbal adjectives) in combination with the copula is also available. Vns are assumed to instantiate the progressive, while their structural representation involves a VP structure (ProgP in McCloskey’s terms). Similarly, Vadjs are participial forms which are also represented in terms of a VP structure. The VSO order in these cases involves the use of the (inflected) copula in initial position, followed by the subject, followed by the Vn/Vadj form. The issue of word-order in Irish will be discussed in Chapter 4. For the moment, I will concentrate on the nature of the morphological forms that verbs exhibit at the Prefunctional stage.

Hickey (1984) claims that, at Stages I and II (roughly up to the age of 2;0), the verbal forms used include Vns, Vadjs and synthetic verbal forms as shown
by the following examples:

(20) a. ta capailli ("I want the horsie") (Hickey, 1987)
   be horsie [from-me] VS
b. ta bo (= there is a cow) VS
   is cow
c. thit se (=he fell) VS
   fell he

(21) a. mise dul SVn
   me going
b. baby ag gol SVn
   baby prt.-crying
c. leorai ag imeacht SVn
   lorry prt.-going

(22) a. Aoife shiul abhaile (McKenna & Wall, 1986)
   Aoife gone home
b. leabhar Eugene stroichte
   book Eugene torn (=Eugene's book torn)
c. beebeep briste anois
   car broken now

With respect to the limited presence of finite verbal forms at the first two stages, Hickey points out that the first use of the copula in the past tense appears at the age of 2;0: "... and a synthetic verb+person marker bhis (be-past-you) 'you were'. As yet there has been no development in the use of other verbs in other tenses" (Hickey 1987:127). Regarding the past tense form in (20c) she claims: "His [Eoin's] regular past thit 'fell' occurred alone spontaneously, but was a variant of several pronunciations, so its lenition may not have been a meaningful attempt at the past tense" (Hickey 1987:121).

Hickey suggests a correlation between the occurrence of subject-initial utterances and the absence of the copula in these data. Given that the equivalent adult sentences would require the presence of the copula, this is a valid observation. There remain, however, several questions unanswered. First, why is the copula missing, given that, at least morphologically, it is used at the same stage in constructions which do not involve Vns or Vadj (cf. (20a&b)).
Secondly, regardless of the absence of the copula in these constructions, their availability at this early stage contrasts with the lack of any distinction in terms of [+/-finite] associated with an inflectional head. Thirdly, the availability of the progressive, the participial and the ‘finite’ form bears a striking resemblance to the English acquisition data which, as shown above, exhibit aspectual rather than tense distinctions. If SVn utterances are covert BeSVn utterances, as Hickey suggests, the observed common patterns attested in both English and Irish remain unexplained. Recall that, the absence of the copula/auxiliary (due to its categorial status) was invoked by Radford (1990) to account for the ill-formedness of the early English data involving participial and progressive forms. As was shown, however, the absence of the copula does not entail the presence of the aspectual affixation attested.

I would thus like to suggest that early Irish exhibits aspectual distinctions in the use of the verbal morphology along the lines suggested for English. Vadj's mark perfectivity or stativity/accomplishment according to the situation type that the verb belongs to. Vns are imperfective progressive. As far as ‘finite’ forms are concerned, many of the VS sentences include the copula, as well as the verb ‘to fall’ in the Past. Assuming that in the case of synthetic verbs, viewpoint aspect is neutral (as it is not morphologically marked), aspectual meaning can be derived on the basis of contextual information.

According to Pina (1984), Spanish data from the same stage of acquisition exhibit a variety of verbal morphological forms. Verbs in the Present tense constitute the vast majority of the relevant examples. Infinitives, Gerunds, participles, imperatives and a very restricted number of verbs (5 occurrences) in the past tense were also used. Pina notes that the use of auxiliaries, of the future and productive use of the past tense all appear after the age of 2;0. Some examples of the verbal forms used at the early stages are provided in (23):
As is clear from the above examples, aspectual distinctions are morphologically conveyed in the case of gerunds and participles with the imperfective progressive and perfective reading respectively. As far as the infinitival forms are concerned, Pina observes that, in some contexts, they could be interpreted as being the complement of a verb of volition (e.g. agua beber=
'quiero beber agua' = "I want to drink water"), while in other cases their function is that of a purpose-clause (e.g. asientos sentar = 'los asientos son para sentarse' = "Chairs are for sitting on"). Although contextual cues contribute to the semantic/pragmatic interpretation they can hardly be assumed to give any clues to the syntactic representation of the infinitival clause.

Pina's observations on the possible interpretation of infinitival forms, however, can be reinterpreted as suggesting that they convey a modal reading which is standardly assumed to refer to a potential rather than actual situation, and further, modality can be assumed to interact with all aspectual viewpoints. Moreover, as argued above with respect to infinitival forms in German and French, aspect is not morphologically marked. If infinitival forms have a neutral viewpoint aspect, it follows that aspectual meaning will differ depending on situation type as well as the intended modal interpretation, when this is appropriate.

This is consistent with the account suggested for infinitival forms in early French and German above. Recall that, in the case of French, Lightbown's criterion for classifying the oral production of -er forms as infinitival (rather than participial) was the fact that they were used in the description of an ongoing activity. This, apparently, is not compatible with Pina's suggestions for the relevant Spanish data if the distinction drawn is in terms of modality. If, on the other hand, the relevant distinction is drawn in terms of neutral viewpoint aspect, the use of infinitival forms in these languages can be accounted for.

The examples in (26) include verbs in the 'present' tense. These verbal forms are not marked for the [+/-progressive] feature, as is the case in the corresponding Greek forms. Unlike Greek, however, Spanish does not make a morphological distinction between perfective and imperfective in the Present tense. Assuming that, like French, Present in Spanish is aspectually vague, situation types depending on the verb, as well as contextual clues determine their aspectual meaning. Note that, if this is correct, the overlap in the
distribution of infinitival and 'finite' forms is predicted to be possible. As for the possibility of a modal interpretation in the case of infinitival forms, this is assumed to be independent of, but compatible with, aspectual interpretation. In this respect, note that a modal interpretation with a 'finite' form is also not excluded.

To summarise, in the discussion of the verbal affixation attested in Greek, French, German, English, Spanish and Irish I have tried to show that the notion finiteness with its binary values fails to account for the set of morphemes present at the Prefunctional stage. In particular, Tense specification appears to be exclusively associated with adult 'present' tense forms while 'past' time is conveyed by the use of aspectual categories rather than tense morphology. The use of infinitival morphology is indicative of the absence of the requirement for Tense features in matrix clauses at this stage. Moreover, its distribution overlaps with that of 'finite' as well as clearly aspectual forms, thus suggesting that formal syntactic phenomena associated with each value (e.g. verb-movement, null subjects, Tenseless matrix clauses) are not operative at this stage.

On the basis of data from Greek, French, German, Irish, English and Spanish, I have suggested that Aspect rather than Tense is encoded in Prefunctional verbal morphology. Aspectual specification is conveyed by a combination of situation types expressed by the verb (or other substantive categories) and by aspect viewpoint. As far as viewpoint aspect is concerned, all possibilities are argued to be instantiated in early verbal forms. In particular, perfective viewpoint is associated with the Greek verbal forms overtly marked for perfective aspect, as well as participial forms. Imperfective progressive aspect is marked on gerunds while infinitival and 'finite' forms have neutral viewpoint aspect, thus allowing for both perfective and imperfective readings depending on contextual information and situation type.

In contexts which favour a modal interpretation, this is assumed to interact with aspectual meaning. If modality was syntactically realised at this
stage, then the absence of the modal particles in early Greek data would remain unaccounted for. As shown above, modal forms in adult Greek can cooccur with either perfective or imperfective verbal stems, thus none of the attested morphology at the prefunctional stage would indicate whether the form is + or - modal. In this respect, I suggest that although contextual information is suggestive as far as the interpretation of the utterance involved is concerned, it can hardly be used to determine the formal status of syntactic properties available at this stage.

Assuming that Aspectual distinctions are indeed operative at this stage the obvious question that arises is why Aspect (but not Tense) is part of early grammars. If children fail to make syntactic distinctions between past and non-past events in terms of a functional head (IP or TP) why is it that they do encode such distinctions morphologically and do not restrict themselves to a single unspecified form. In the following section I will address these questions and suggest that Aspect not only can but must be used to satisfy UG requirements and constraints on representations.

2.4. A theory of Aspect

Recall that one of the basic claims of the theory presented here is that functional categories and their respective projections are absent at the Prefunctional stage. Moreover, functional categories determine parametric variation. In the absence of parameterisation, UG imposes uniform constraints that, a priori, do not involve the presence of a functional head in the clause structure.

What this implies, in particular with respect to the Tense projection, is that its presence in adult grammars is not necessitated by UG but by independent requirements that apply to parameterised properties of adult grammars. For example, the structural position of the TP in different languages
is regulated by directionality restrictions associated with this functional head (see Ch.1). In addition, if T is assumed to be responsible for Nominative Case assignment this also involves parameterisation associated with the governing properties of this functional head: structural government vs Spec-head configuration (cf. Koopman & Sportiche (1988)).

Notice, however, that Tense is assumed to be independently required in the clause structure: first, because of its Operator-like status (Pollock (1989)) and, secondly, because of its blocking function with regard to certain syntactic phenomena like wh-movement and the licensing of polarity items (cf. Manzini (1992)). On the assumption that Tense has an Operator-like status it should be present in the clause structure regardless of the parametric values associated with it. In this respect, it could be argued that the presence of a TP projection is a uniform requirement imposed by UG.

With respect to the blocking effects attributed to Tense, we may be dealing with a parameterised value, in that languages differ as to whether the present of finite features blocks movement or not. In addition, in certain languages, known as Aspect-languages (e.g. Arabic, Berber and, possibly, Greek), Tense specification is linked to the presence of modal elements e.g. future and subjunctive particles. In these languages, it appears that Tense specification is associated with the head of a MP (Mood Phrase). It thus follows that the presence of a Tense projection is not universally required as long as the relevant Tense features are realised on a compatible functional head\textsuperscript{10}. If this assumption is correct, then the blocking effects of Tense can be attributed to the functional head specified for Tense features.

On the other hand, the Operator-like status of categories such as Tense/modals, Negation and wh-phrases can be assumed to be independent of their syntactic realisation as functional heads. Elements that have inherent Operator-like properties can be argued to be structurally represented in terms of the c-command requirement on their binding domain, where the Operator is
linked to an element within its scope. Assuming that this is a UG condition on the representation of Operators, it follows that the presence of an independent functional projection is not necessitated by the Operator-like status of these elements. For example, it has been argued that the structural representation of Negation and modals in early Dutch involves a VP-adjunction structure (Hoekstra & Jordens (1991)). Similar considerations could, in principle, apply to the representation of all Operators in Prefunctional grammars.

The most compelling argument for the presence of an inflectional (I or T) head in clause structure concerns the notion of an E-position in the theta-grid of the verb, along the lines suggested by Higginbotham (1985). The crucial claim in Higginbotham's analysis is that the thematic structure of verbs includes an open position which is referred to as the event thematic position in the theta-grid (E-position). (27) exemplifies a lexical entry for the verb 'see', in these terms:

(27) (see, +V -N, [1,2,E]) (Higginbotham, 1985)

As shown in (27), the information in the theta-grid of the verb includes the number of arguments associated with it as well as the E-position, which invariably appears in the thematic structure of any verb. The requirement on thematic roles is that they be discharged in the course of syntactic derivation. The theta-criterion is thus reformulated as in (28):

(28) Every thematic position is discharged. (Higginbotham, op.cit.)

All thematic-roles are assumed to project from the lexicon onto the syntactic level as open positions, which are to be 'closed' in the structural representation. The internal theta-role is discharged at the point where the verbal projection, namely V', meets DP. This is an instance of discharging a theta-role in terms of theta-marking. A distinct process by which a theta-role is discharged is theta-binding which, according to Higginbotham, is instantiated with respect to the
E-position, when VP meets INFL. When theta-roles are discharged they are said to be saturated. As is obvious from the above, the process of discharging a theta-role operates at the syntactic level.

It has been independently argued, however, that saturation of a theta-role can take place in the lexicon (cf. Borer (1984)). So, for example, in the case of morphological reflexivisation or the formation of adjectival passives, the saturation of the internal theta-role is the result of lexical affixation of the reflexive or passive morpheme (Borer & Wexler (1987)). In these cases, the affected theta-role does not project onto the syntactic structure. The process of saturation at the lexical level can be reinterpreted in Higginbotham’s terms as the affected open-position of the theta-grid being ‘closed’ prior to the syntactic level. Thus, we can assume, diverging from Higginbotham’s assumptions, that the formulation of (28) should not refer to the level at which it is operative. Thus, both lexical (morphological) and syntactic processes conform to the requirements of the Theta-criterion as specified in (28).

Bearing the above discussion in mind, I would like to go back to the clause structure assumed for early grammars at the Prefunctional stage. Recall that the underlying motivation for the VP structure is that it constitutes the thematic domain of the verb where all its arguments are represented. Therefore, both the external and the internal arguments are structurally realised, subject to X-bar constraints. I will also assume, following Higginbotham, that the theta-grid of any verb includes an additional argument, the E-position, which is subject to (28) given that this is a UG requirement. As the E-position appears irrespective of the thematic nature of the verb (i.e. transitive, intransitive, ergative), I will maintain that the presence of the E-position is required by UG in the sense that it is a uniform requirement on the well-formedness of thematic specification. In this respect, the prediction about early clause structure is that all thematic positions are saturated inside VP in order to satisfy (28).

On the assumption that functional heads and, in particular, IP (or TP) are
absent at the relevant stage the question arises as to how the E-position gets discharged, to fulfill the relevant UG requirement. I would like to suggest that this is precisely the role of Aspect in Prefunctional grammars. The process of saturation of the E-position takes place at the lexical level as a result of morphological affixation of Aspectual features onto the verbal head. Note that the crucial implication is that Aspect does not project as an independent head in the clause structure either in child or in adult grammars. In other words, it is not the case that Aspect is attached to the verb as a result of lexical affixation in child grammars while in adult grammars the possibility of syntactic affixation is available. This assumption would not only give rise to ad hoc stipulations, but it is also theoretically incoherent, and problematic with respect to standard learnability claims. I thus suggest that the status of Aspect differs from the status attributed to other functional heads in the grammar.

The distinct status of Aspect is assumed to be characterised by the following properties; first, it is part of the argument structure of the verb. Secondly, there are no parametric values associated with it. Thirdly, it never projects as an independent head in the clause structure. Fourthly, its status in the grammar is similar to that attributed to derivational affixes, in the sense that both involve lexical rather than syntactic processes of affixation. I will now deal with each of these properties separately.

As suggested above, the presence of Aspect in the grammar is motivated by the presence of the E-position in the theta-grid of the verb in combination with the Theta-criterion. As discussed in section 2.1.1., Aspect denotes the internal temporal bound of an event which is the result of an interaction between the inherent (semantic) properties of verbs (i.e. situation types) and the perspective of the situation (partial vs complete) as encoded by viewpoint aspect (i.e. perfective, imperfective, neutral). On the other hand, Aspect interacts with the external temporal bound of an event denoted by the use of (deictic) Tense features.
The presence of an Aspectual specification in the description of an event can be realised by morphological as well as by lexical means. The latter is referred to as situation (or synthetic) Aspect and includes the use of temporal/aspectual adverbs, like 'yet' and 'already' in English, as well as the use of verbal particles and verbs. In the present theoretical discussion, however, I refer only to viewpoint Aspect, given that morphological specification is restricted to this aspectual component.

The assumption that Aspect is responsible for the saturation of the E-position in the verb's theta-grid implies that Aspect is an argument of the verb in the sense that its presence is required by thematic rather than structural requirements. This, in turn, implies that the presence of Aspect is regulated by UG requirements, as expressed in the form of the Theta-criterion in (28), rather than by language-specific properties.

Turning now to the non-parameterised nature of the Aspect category, notice that, as opposed to other inflectional morphemes, Aspect appears crosslinguistically to occur in a fixed position with respect to the verbal head. In particular, in languages where Aspect is morphologically realised, it appears to be the element closest to the verbal stem (cf. Baker (1988), Ouhalla (1991a)).

In this respect, there seem to exist two sets of languages where Aspect is morphologically present. The first set involves languages where Aspectual morphology has a non-concatenative nature, while the second set includes languages where Aspect is attached to the verbal stem. In the second set (e.g. English, French, German, Spanish), Aspect is marked by the morpheme occurring in the closest position to the verbal stem. As shown by Ouhalla (1991a), the Aspect affix in these languages appears invariably inside the other inflectional morphemes. This follows if the verb projects from the lexicon already inflected for aspect and subsequently moves to attach to the other inflectional categories higher in the structure.
If parameterisation accounts, among other things, for the hierarchical ordering of functional categories in the clause structure of different languages (see Ch.1), Aspect appears to lack any variation in these terms. If one assumes the presence of an ASPP in the clause structure the attested common pattern exhibited in the Aspectual morphological make-up of verbs crosslinguistically remains an unexplained generalisation. On the other hand, if Aspectual morphology is assumed to be the result of a lexical process of affixation the above mentioned facts are accounted for in a straightforward fashion.

The assumption that Aspectual affixation involves a lexical rather than a syntactic derivation is consistent with the facts of the first set of languages mentioned above, where Aspect has a clearly non-concatenative nature. Modern Greek as well as the Semitic languages, where the verbal stem appears already marked for Aspectual features, are representative examples. In Semitic languages, in particular Arabic, but also in Berber, Aspect is encoded into the vocalic melody of the verb, whereas the rest of the inflectional morphemes have a clearly concatenative nature. If the process of mapping the vocalic melody onto the consonantal root takes place in the lexicon, as is emphatically argued by students of Semitic morphophonology, in particular McCarthy (1979), then it must be the case that the verb is projected from the lexicon already marked for aspectual features.

If aspectual affixation is a lexical process then it is expected to have certain properties in common with derivational morphology, standardly considered to take place in the lexicon (cf. Anderson (1988)). In the case of morphological causative formation, for example, the causativised verb projects from the lexicon as a morphological unit (Zubizarreta (1987), Marantz (1984), Gibson (1980)). The assumed differences between the derivation of inflectional and derivational morphology with respect to the level at which each of them applies, are predicted to be evident in terms of differences in syntactic behaviour.
In particular, in languages where verb/VP-focussing or predicate clefting is available we should expect that verbal affixes attached to the verb at the lexical level should appear with the preposed predicate while inflectional affixes may not. As far as aspectual affixation is concerned, the English examples in (29) are particularly suggestive:

(29)  
\[ \begin{align*} 
\text{a. } & \text{Finishing his thesis is what John will be doing.} \\
\text{b. } & \text{Finish his thesis is what John will do.} \\
\text{c. } & \text{Kissing Mary is what John was/is/will be doing.} \\
\text{d. } & \text{Mark the exams is what John did.} \\
\text{e. } & \text{*Was kissing Mary is what John was doing.} \\
\text{f. } & \text{*Will be finishing his thesis is what John will be doing.} 
\end{align*} \]

On the basis of these examples, it is clear that in pseudo-cleft constructions where the VP predicate is affected, aspectual affixation is marked on the preposed predicate while inflectional morphology is carried by the dummy element 'do', the modal, and/or the copula in the lower clause. These facts can be accounted for if we assume that the verbal head together with the aspectual morpheme behave as a morphological unit. On the basis of these facts we can conclude that Aspectual affixation involves a lexical derivation and is subsumed under the class of morphological processes which take place prior to the syntactic level of representation.

Notice that in the model of grammar I adopt, the morphological realisation of both substantive and functional categories is argued to be instantiated at the interface level (see Ch.1). The distinction between functional and substantive categories lies, among other things, in the different modules in which either set is included. In particular, the mental lexicon includes the set of substantives while the FM (functional module) is the lexicon of UG which consists of the set of functional categories.

Given the above discussion on Aspect and morphological processes the question that arises is how the latter fit in the general picture of the grammar. Given that the interface level is basically characterised as the meeting point of
both functional and substantive categories in terms of morphology, it is only natural to assume that lexical processes of affixation take place at this level. This raises a number of questions regarding the categorial specification of morphemes as well as the nature of the lexical rules of affixation involved. The second issue has been extensively addressed in the literature and a detailed discussion is beyond the scope of this thesis, as it does not pertain in any crucial way to the claims put forward.

As far as the first issue is concerned, the categorial status of morphemes is necessarily specified at this level as rules of derivational morphology presuppose categorial specification. In other words, the categorial status of Verbs, Nouns and Adjectives as well as causative and aspechual morphemes, for example, is specified at the interface level. The basic implication of the role attributed to the interface level is that both functional and substantive elements are accessible via the morphology even though they are not necessarily incorporated in the grammar in the syntax proper. Given that substantive categories are part of the mental lexicon, the distinction between a morphological and a syntactic role pertains only to functional categories. In other words, the use of, for example, agreement endings, does not entail the mastery of the abstract properties that agreement has in a given language. The latter involves parameterisation which is assumed to be available from the FM exclusively (see Ch.3). Evidence for this claim can be derived from L2 acquisition where the correct use of inflectional affixes does not necessarily imply parameter-setting as suggested by Clahsen (1988) and Clahsen & Muysken (1986) with respect to German L2 data.

Bearing the above discussion in mind, let us concentrate on the theoretical implications of the presence of Aspectual morphology. On the assumption that Aspect is instantiated in the morphological component there are two logical possibilities concerning its status. One is that Aspect belongs to the FM, although its morphological realisation does not entail accessibility of the FM. Rather, as will be suggested for the morphological presence vs syntactic absence of
agreement, Aspect is morphologically realised due to the accessibility of the interface level. The fact that Aspect, as opposed to Agreement, is appropriately used, has to do with the fact that its affixation to the verbal stem is a lexical rather than a syntactic process, thus it does not require a fully-fledged structure in terms of both functional and substantive categories. The latter presupposes the availability of the FM given that functional categories project as a result of their lexical entries and their corresponding abstract properties in the FM being accessible\textsuperscript{14}.

The second logical possibility is that Aspect does not belong to the FM. Rather, it is a substantive category which, like all members of this set, is morphologically instantiated at the interface level. Though this possibility differs radically from recent assumptions in linguistic theory about the status of Aspect (cf. Lefebvre (1986/1987), Tenny (1987), Ouhalla (1991a)), it constitutes a valid alternative, in my opinion. Given the properties attributed to Aspect, namely the fact that it does not project in the clause structure, no parameterisation is associated with it and that it involves a lexical process of affixation, it is clear that Aspect has a status distinct from that of other functional categories. Most crucially, in the framework suggested here, Aspect is an argument of the verb due to its role with respect to the E-position in the theta-grid. This last property contrasts Aspect with the rest of the functional categories on the ground that thematic requirements are associated with substantive categories as well as UG (but see fn.13).

Although I consider both alternatives plausible, I favour the second possibility as being more readily integrated into the framework of the theory of grammar suggested here. A final choice between the two alternatives, however, requires further evidence and argumentation which go beyond the scope of this work. I will, therefore, maintain a neutral position given that either alternative serves the purposes of the current discussion concerning the status of Aspect in Prefunctional grammars.
In the presence of Aspectual features specified on the verbal head, the abstract representation of the verbal projection (ignoring subject and objects), is illustrated in (30):

\[
(30) \quad \text{VP} <e^*>
\]

\[
\quad \text{V'} <e^*>
\]

\[
\quad (V,\text{Asp}) <e^*>
\]

The head-node is morphologically complex in that it consists of both the Verbal stem and aspectual features. The ‘e’ notation refers to the E-position of the verb and the asterisk denotes that this position is saturated. As shown in (30), this thematic position appears in the syntax already saturated, indicating that it has been discharged at the lexical level. Thus, VP is shown to be the thematic domain of the verb, given that the representation of all thematic arguments is included in its structure. This is consistent with UG requirements, in the form of the Theta-criterion in this case, in combination with the thematic specification of verbs.

In the light of the discussion so far, the facts of early grammars can now be accounted for. The attested predominant use of Aspectual rather than Tense morphology is motivated by two basic reasons; first, Aspect is required by UG as it is responsible for the saturation of the verb’s E-position. Secondly, Aspect is available at the Prefunctional stage given that it involves a lexical rather than a syntactic process of affixation. The second reason accounts for the availability of Aspect in Prefunctional grammars. The first necessitates it.
1. The criteria she uses for establishing the existence of a neutral viewpoint are based on semantic tests on the interpretation of the sentence. Accordingly, she considers sentences such as the ones in (i) and (ii) for which it is possible to have either an open or closed reading (compatible with imperfective and perfective interpretations respectively):

(i) Jean chantera quand Marie entrera dans le bureau.
   Jean will sing when Mary will enter the office

(ii) Jean dormira quand Marie entrera dans le bureau.
   Jean will sleep when Marie will enter the office

On the basis of such examples she concludes that the aspectual viewpoint in these cases is neither perfective nor imperfective. On the other hand, she considers examples such as the one in (iii) which, if they involved no aspectual viewpoint, should be possible:

(iii) # Le cheval gagnera le course mais il ne gagnera pas
    "The horse will win the race but it won't win"

Future Tense in French is assumed to be of the neutral viewpoint class. Smith argues that, if (as in (i) & (ii)), the open reading is possible, in the absence of an aspectual viewpoint, the contradictory statement in (iii) should be acceptable: "the examples illustrate: if the preliminary reading were available, it should be reasonable to conjoin a Futur achievement sentence with an assertion that the event will not occur" Smith (1991:122). She then concludes that neutral, perfective and imperfective are all instances of viewpoint aspect.

2. The distinction between open and closed readings refers to the final point of the situation expressed. The open reading is associated with the imperfective viewpoint aspect, whereas the closed reading with the perfective one (cf. (2)).

3. It is also possible to assume that infinitival forms are aspectually vague even in adult grammars. What needs to be established in order to evaluate this assumption is the extent to which a [-Tense] specification can interact with aspectual meaning in infinitives. For current purposes, I will restrict myself to the aspectual meaning of infinitival forms in Prefunctional grammars on the assumption that the absence of Tense does not give rise to a possible interaction with Aspect.

4. The question whether the prefix e- is a Tense morpheme or not is fairly controversial. In Standard Modern Greek, the prefix -e appears obligatorily with verbs with a monosyllabic stem which begin with a consonant (cf. (4)). In cases where the verb begins with a vowel, Past tense is encoded in a change in the
position of the stress:

(i) anigh-o/ anigh-a/ aniks-a
    open-Imp-1s/ open-Imp-1s/ open-Perf-1s

(ii) laven-o/ (e)-laven-a/ *(e)-lav-a
    receive-Imp-1s/ receive-Imp-1s/ Past?-receive-Perf-1s

In the second example, it is clear that the presence of the prefix becomes obligatory due to the change in the stem of the verb as a result of aspectual specification. It, thus, seems that two alternative positions can be put forward; the first assumes that Tense specification is never morphologically marked independently but, rather, is encoded in distinct stress patterns. The other option is to assume that Tense is morphologically marked by the prefix e- which, depending on individual phonological properties of verbs, may or may not surface as an independent morpheme.

5. Modern Greek does not have non-inflected infinitives, as verbal forms are always marked for Aspect and Agreement. Distinctions comparable to the finite vs non-finite of Romance languages, for example, operate in terms of "dependent" vs "not-dependent" tense specification (cf. Agouraki (1991)).

6. Katis’s corpus consists largely of data from children over 2 years old. However, she points out in the case of, one child in particular that, despite his MLU which was average for his age (2:7), his linguistic maturity was similar to the one attributed to a two-year old child, N., also studied in Katis’s thesis. Any data presented from this thesis will be drawn from the corpus of these two children which Katis characterises as late-starters.

7. Modern Greek, unlike English, does not mark morphologically the progressive/non-progressive distinction. Thus, the appropriate interpretation of Present tense forms (which are always imperfective) is determined by the context in combination with the situation type aspect encoded by the verb (e.g. stative/non-stative).

8. The claim that na is a modal particle heading its own projection has been put forward by various researchers in the literature (cf. Ingria (1981), Veloudis and Philippaki-Warburton (1983), (1984), Rivero (1987), Campos (1989), Tsimpli (1990)). Given that the other modal particle, tha, can occur in contexts which are not specified for deictic Tense (e.g. conditionals), it could be argued that both elements occupy the same functional position. In particular, a MoodP with + or - finite features or a TNSP are both, in principle, possible host categories for the two modal elements.

9. It is also a well-known fact that imperatives are among the earliest verbal forms used. Their aspectual interpretation differs across languages, given the variation in morphological realisation of aspectual viewpoints. For example, imperatives in Greek are marked for perfective/imperfective, while in languages
like French they are not. An additional property associated with imperatives is modality. Further discussion of the status of imperatives, in connection with their modal interpretation, is provided in Ch.5.

10. Alternatively, if functional structure has a universal format as suggested in Chomsky (1992), it follows that TNS projects independently of language-specific (syntactic or morphological) properties. In this case, parameterisation would still be associated with functional heads, albeit not with their hierarchical position in the functional structure. In this respect, the assumption regarding clause-structure in Prefunctional grammars remains unaffected. As far as the status of functional elements that have an Operator-like status is concerned, their representation in early grammars can be argued to involve an adjunction structure which would meet the relevant requirement on c-command. Thus, negation in early grammars can be represented in a VP-adjunction structure (see Ch.5). The presence of a Tense-Operator can be assumed to be structurally realised in a similar fashion. Note, however, that there does not appear to be any independent evidence for the assumption that Tense is indeed available in early grammars. Moreover, if Aspect provides a temporal organisation of a sentence, as argued in this Chapter, the question as to the presence of a null Tense Operator depends on the theoretical perspective that one adopts.

11. Smith (1991) discusses crosslinguistic variation as regards the morphological realisation of viewpoint aspect in terms of parameterisation. It is certainly a fact, that languages differ as to which aspectual categories are morphologically realised, if any. Assuming that aspectual meaning (situation type and viewpoint) involves a (finite) number of possibilities the choice of which depends on language-specific properties, the possibility of a parametric account is not excluded. Note, however, that the crosslinguistic variation is mainly morphological in that aspectual meanings can be conveyed irrespective of their grammaticalisation. This is consistent with the idea that the temporal format that Aspect provides is based on our cognitive rather than our linguistic abilities (Smith (1991)). In addition, if we assume that clause structure is uniform across languages, morphological properties are dissociated from syntactic ones (cf. Chomsky (1992)). In this theoretical perspective, aspectual differences are reduced to the morphological component. If this is correct, the projection of an ASPP is redundant if its presence in clause structure is aimed to account for morphological properties exclusively.

12. Note that sentences such as the ones in (i) and (ii) are also ungrammatical:

(i) * Fix the car is what John will be doing.
(ii) * Fixing the car is what John will do.

It, thus, seems that there is a requirement regarding the presence of aspectual viewpoint on both the clefted predicate and the matrix clause. It could be argued that the ungrammaticality of these sentences has to do with a contrast in aspectual meaning. More precisely, if it is true that verbs in English do not have neutral viewpoint, as suggested by Smith (1991) then the ill-formedness of such
constructions is readily accounted for. Smith (op.cit.) argues that the Present form in English (identical to the bare form), is necessarily imperfective non-progressive. Thus, if the progressive meaning is intended it is obligatory that the -ing form be used. Thus, the ungrammaticality of (i) and (ii) can be attributed to the contrast in aspectual meaning conveyed by the two verbal elements.

13. The authors point out that the correct use of tense and agreement inflection does not correlate with the acquisition of word-order in root and subordinate clauses. More precisely, the L2 data indicate that the SVO order is used regardless of the relevant constraints associated with the V2 phenomenon, which is mainly restricted to root clauses. Such data contrast with the pattern observed in L1 data, where a correlation between the acquisition of agreement and word-order is arguably attested (Clahsen (1988)). In the context of the current discussion, it can be argued that the L2 data exhibit precisely the lack of a 1:1 correspondence between morphological and syntactic properties. In other words, the mastery of morphology in a given language does not necessarily imply acquisition of the abstract properties associated with the functional categories involved. It, thus, follows that morphological evidence does not reflect the presence or absence of parameter-(re)setting (cf. Smith & Tsimili (1991), Tsimili & Smith (1991), Tsimili & Roussou (1991)).

14. Note that the assumption that Aspect belongs to the FM, is difficult to substantiate independently, assuming that its availability in early grammars is due to the properties discussed here. In other words, if Aspect is an argument of the verb (in the sense discussed here), and moreover, it appears to be correctly used in early grammars in contrast with other functional categories, evidence for or against its presence in the FM depends primarily on the overall theoretical approach to acquisition one adopts. In a Continuity approach, the contrast between the availability of Aspect but not Tense in early grammars, remains unaccounted for. More precisely, there do not seem to exist a priori criteria which would predict the availability of Aspect but not of Tense in Prefunctional grammars, assuming that both are functional elements and that functional structure is available right from the start. The only crucial property attributed to Aspect but not other functional categories is its presence in the theta-grid of verbs. Assuming that this is the main reason for the availability of Aspect, the question as to whether it belongs to the set of functional categories or not remains unanswered. Aspect is available because of its argumenthood but regardless of its categorial status. This is the sense in which I meant earlier that independent evidence for the functional status of Aspect is necessary.
3.1. Introduction

Recall that, according to the Split-Infl Hypothesis, inflectional heads and, in particular, Tense and Agreement, project independently in the clause structure (see Ch.1). With respect to the properties of the head AGR-S, the assumption is that it bears certain features, referred to as phi-features which include specifications for person, gender and number (Chomsky (1986), (1992)). In the course of syntactic derivation, subjects are assumed to move from their base-generated position (SpecVP) where they are assigned the external theta-role to (Spec, AGR-S), the canonical subject position. In this position the subject enters into a Spec-head agreement relation with the [V+AGR] head which leads to the phi-features being shared by the two elements. The process of Nominative Case assignment is subsumed under the same Spec-Head configuration in the projection of AGR-S.

As argued earlier (Ch.1), a syntactic account of objects has been suggested along the same lines. The presence of an AGR-O category in the functional structure is motivated by the requirement on structural Case-assignment to complements. Movement of the object to the (Spec,AGR-O) position gives rise to a Spec-head configuration, the result of which is feature-sharing between the elements in head and Spec positions. In this way, subjects and objects receive a unified analysis.

The availability of pro as a parametric option is also associated with the AGR-S head (cf. Rizzi (1986)). Null subjects are assumed to be syntactically realised as pro, a pronominal empty category. The requirements on the distribution of pro are twofold: licensing and identification. The process of licensing involves the null subject being in a Spec-head configuration with an
appropriate licensing head, in this case Agreement. Identification, on the other hand, is independently required by UG in the form of a condition on the recoverability of features on empty categories. In this respect, it is the presence of phi-features on the Agreement head, in the relevant set of languages, which satisfies this requirement, in that it leads to the identification of the content of the null subject.

The occurrence of pro in object position in languages like Italian, is also subject to a licensing requirement associated with the governor of the null object, namely V (Rizzi (1986)). Thus, as in the case of subject pro, the availability of object pro is defined as a parametric option. Recoverability of the content of a pro argument is subject to a general convention which refers to the presence of a feature specification on the licensing head. In the case of null objects, Rizzi postulates a general rule assigning arbitrary features to the direct theta-role, i.e. the only theta-role that a verb directly theta-marks (not compositionally or by the presence of an autonomous theta-marker in the case of subjects and indirect objects respectively). This rule is assumed to apply either in the lexicon or in the syntax. Thus, according to the parametric value associated with the licensing properties of verbs, the affected theta-role may either project as pro [arb], or be saturated prior to the syntactic level. In languages like Italian, verbs are licensing heads, thus pro [arb] in object position is available. Note crucially, that recoverability in this case is met by assigning a collection of features associated with the arb theta-role, namely [+human, +generic, +plural], hence there is an overall parallelism between the requirements on the distribution of both object and subject pro.

Note, moreover, that by assuming the presence of an AGR-O projection in the clause structure, the parallelism between null subjects and objects becomes clearer. In particular, in the presence of AGR-S and AGR-O, licensing of pro in subject and object position can be argued to be exclusively associated with properties of the respective AGR heads. Thus, a unified analysis of null arguments can be reached along the lines suggested for the structural
representation of overt subjects and objects. The arbitrary interpretation of pro
in object position is accounted for by the absence of agreement features on AGR-
O which are required for the recoverability condition to be met.

Bearing the above theoretical background in mind, let us now turn to
eyearly child grammars, concentrating on the presence of Agreement affixes and
null arguments in crosslinguistic data.

3.2. Agreement
3.2.1. Greek

Greek is a null-subject language, rich in terms of both inflectional and
Case morphology. Agreement specification includes both person and number
marking in combination with Tense, Mood and Aspectual marking. As pointed
out in section 2.3.1., the verbal form in Greek includes both Aspect and
Agreement affixes in that order. Moreover, there are no non-inflected infinitives
in the language, in that verbs used as the equivalent of infinitival clauses in
English are obligatorily marked for Agreement (and Aspect) though they are
underspecified for Tense features (see section 2.3.1. and fn.5 in Ch.2)).

As far as the appearance of agreement in early Greek data is concerned,
the main observation at the Prefunctional stage is that the agreement paradigm
is restricted to the third person singular for most verbal forms:
Katis's (1984) findings are consistent with the above observation; she distinguishes three developmental stages with respect to agreement marking, of which the first is characterised by "attestation of the basic 3.SG form only" (Katis 1984:98). Notice, however, that other agreement affixes, mostly singular, are also attested (though in restricted cases) in both my and Roussou's corpora.

The question, therefore, is whether the impoverished nature of agreement morphology is a result of the child being a 'conservative' learner of inflectional affixation, or whether the absence of the complete agreement paradigm could be understood as indicating a lack of the syntactic properties associated with the agreement head. Again, the question is to what extent morphology can be taken at its face value to represent the status of syntactic categories in early grammars. In terms of the theory presented here, the issue remains unresolved if the basis of the argumentation is merely the presence vs absence of morphological marking. On the assumption that morphology reflects only indirectly the availability of functional heads, data violating abstract properties of the agreement head constitute evidence against its presence in the clause structure. In this context, data which involve agreement 'errors' are suggestive:

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(2)  
   a. miizi katses  
      smell-3s socks  
   b. epese ola  
      fell-3s all-pl  
   c. pji olo ego  
      drink-3s all I  
   d. i randjes pesi, mama  (Katis, 1984)  
      the braces fall-3s mummy  
   e. aba ftani ego  
      not reach-3s I  
   f. feji i nani apo tipe  
      leave-3s the dwarfs from holes  

If the presence of an Agreement head entails feature-sharing between the verb and the subject in the form of Spec-head agreement, as assumed for adult grammars, the 'ill-formed' sentences in (2) involve violations of this condition.

Notice that, agreement 'errors' are more frequent in the data from one of the two children studied. She uses agreement affixes other than third person singular, on a more regular basis:

(3)  
   a. pedho Elli  
      play-1s Elli  
   b. a kanum palilato i Elli  
      do-1p bicycle the Elli  
   c. ehis mataki i Elli  
      have-2s eye-dim the Elli  

The fact that the number of sentences which are ungrammatical in terms of agreement 'errors' appears to be related to the number of different agreement endings used by the child at this stage is interesting for two reasons. First, it supports the idea that morphological agreement in early grammars does not reflect syntactic properties. Secondly, it correlates individual variation with morphological facts rather than with the syntactic properties of early grammars.

In the theory presented here, the above data are accounted for in a straightforward way. Subjects appear in their base-generated position where they are assigned a theta-role. In the absence of an AGR-S projection, there is no
landing-site available where the subject could enter into a Spec-head agreement relation with the functional head, so lack of agreement is predicted at this stage. With respect to the predominant use of third person singular in the early data, I suggest that this form instantiates the form unspecified for agreement features. Notice that, in adult Greek, as in many other languages, third person singular is the form used in impersonal constructions where no thematic subject is involved. This can be understood as implying that, given the absence of a referential subject in these cases, phi-features, are not relevant. With respect to the early Greek data, however, it seems that forms other than third person singular are also unspecified if this term is taken to imply the absence of syntactic features. In other words, the overall frequency of use of the third person singular is of no theoretical importance. It simply reflects the morphological identity of the syntactically unspecified form used in the adult grammar. Given that Agreement as a functional head is not available, all forms used by the child assume the same status in Prefunctional grammars.

The question as to why agreement affixes are present at all in early Greek data is related 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. This UG requirement is referred to in the literature under different names like Lasnik’s Filter (Pesetsky (1989)), The Affix Principle (Ouhalla (1988)) and the Stray-Affix Filter (Baker (1988)). It is basically a well-formedness condition on bound morphemes, assumed to apply at S-structure. Notice that the standard assumption about this requirement is that the relevant level at which it applies is S-structure. In other words, it presupposes a syntactic process of derivation. With respect to early grammars, however, and in particular, the absence of functional heads in the clause structure, this requirement cannot be assumed to hold exclusively at the syntactic level. On the standard assumption that derivational morphology is a lexical process of affixation, it could be argued that m-selectional properties of lexical items can
If the dissociation of morphology and syntax is
correct, then any discussion of the morphology becomes
irrelevant (i.e., whether they are offenses, in what
order, whether the forms are correct etc.) but
may all be correct and still there may be
no functional syntax. How do we know that
adults have functional syntax? Are considerations
relevant in answering this question, relevant for
early grammars?
be satisfied either in the lexicon or in the syntax.

In terms of the present theory, however, morphological processes are only indirectly linked to the syntactic representation, in that any affixation is reflected in the structure via the presence of feature specification. It could thus be assumed that the interface level which includes the morphological realisation of both functional and substantive categories is the level at which the m-selectional properties of lexical items are satisfied. Thus, any process of morphological affixation, either derivational or inflectional is operative at this interface level.

This claim is obviously necessitated by the Prefunctional status of early grammars. The question, however, is whether, when functional projections become available, inflectional affixation as required by the relevant UG condition mentioned above, is operative at the syntactic level as well. This is a plausible and coherent assumption, as the formulation of the UG condition on bound morphemes can apply either in the morphology or in the syntax.

Alternatively, it could be argued that morphological processes involving both derivational and inflectional affixation are restricted to the lexical level, while the presence of functional projections is independently required given the abstract properties associated with functional heads. For example, the presence of an AGR-S projection is motivated by syntactic considerations that have to do with configurational constraints on the representation of null and overt subjects as well as structural Case assignment, among other things. If morphology is dissociated from syntactic representations, then morphological conditions on well-formedness are predicted to apply at a different level, probably the morphological (interface) level. The specification of Agreement features, for example, as morphologically encoded in some languages, is made relevant at the syntactic level in terms of a checking mechanism on the verbal and the inflectional head as a result of a head-movement process (cf. Chomsky (1992)). If this approach is correct, then constraints on morphological well-formedness, as specified in the m-selectional properties of lexical items, for example, are
restricted to the interface level. In theoretical terms, this possibility is optimal in that differences between child (Prefunctional) and adult grammars are reduced to the (non)-availability of the abstract properties of functional categories. No further stipulations on the appropriate level or constraints on representations are required.

3.2.1.1. Null subjects in early Greek

Early Greek provides a paradigm example of the availability of missing subjects in Prefunctional grammars:

(4)  
   a. kani padhl  
       make-3s puzzle  
   b. thelis tili  
       want-2s cheese (=I want cheese)  
   c. kani gata  
       make-3s cat (=YOU draw a cat)  
   d. en selis  
       not want-2s (=I don’t want)  
   e. ehi sokolata  
       have-3s chocolate  
   f. ftiaksume supa  
       make-1p soup  
   g. kopsi...tuto kopsi  
       cut-3s this cut-3s (=YOU cut this one)  
   h. ehi paputsi  
       have-3s shoe  
   i. kubela pame  
       swing go-1p  
   j. ipjes-to  
       drank-2s-it (=I drank it)
As shown by the above examples, missing subjects are attested on a quite frequent basis in early Greek. The interesting question is whether the syntactic realisation of null subjects in sentences such as the ones in (4) is the one assumed for null-subject languages, namely a pro subject (cf. Hyams (1986)). Recall that the distribution of this empty category depends on the licensing and identification conditions associated with the AGR-S head. As far as identification is concerned, notice that early data involve agreement 'errors' in sentences with null subjects. In particular, as shown by the gloss in sentences (4 b,c,d,g,j,k,n,o), the intended subject does not bear the same agreement features as the verbal head. This is reminiscent of cases with overt subjects where lack of agreement between the subject and the verb was also attested (see previous section). In the null-subject sentences, however, the requirement that appears to be violated is the identification condition on pro. If null subjects were indeed realised as this empty category, the above mentioned 'errors' would remain unaccounted for.

Notice, crucially, that identification of pro subjects is subsumed under UG requirements, in the sense that the recoverability of the content of empty
categories is a uniform condition. In the case of pro subjects in adult languages, it is assumed to be fulfilled by the presence of phi-features on the AGR-S head. Thus, the relevant violations obtain regardless of assumptions concerning the licensing properties of, in this case, agreement in a language. More precisely, even if one assumes that the ‘default’ value of the pro-drop parameter consists in INFL being a licensing head for pro subjects (cf. Pierce (1989)), hence their availability in early grammars, the attested agreement ‘errors’ still require an independent explanation.

In the context of the theory presented here, the absence of an AGR-S head in the clause structure excludes the possibility of null subjects being syntactically realised as pro. Given that the presence of agreement is morphologically required in Greek, there is, in principle, no difference between the attested lack of agreement in the case of null and overt subjects. The distinction between the two, in adult grammars, stems from parameterisation as well as configurational constraints (Spec-head agreement), both of which are lacking in Prefunctional grammars.

Given the VP structure illustrated in (5), subjects are not in a Spec-head relation with the agreement head (irrelevant details omitted):

(5) VP
   NP VP
     V
   (V,Asp) Agr

Even if we assume that subjects are in (SpecVP) rather than adjoined to the verbal projection, the categorial status of the head-adjunction structure is V, so, the relevant agreement features are not in the appropriate configuration with the subject.

An additional point that should be made regarding the structure in (5)
has to do with the head-adjunction structure involved. Recall that both Aspect and Agreement are attached to the verb by a process of lexical affixation. The crucial difference between them, however, is that the status of Aspect in the grammar is independently defined, Aspect being an argument of the verb (see Ch.2). The presence of Agreement, on the other hand, is motivated by the nature of the verbal head in a language, namely whether it is a bound morpheme. In the case of Greek, Agreement is responsible for the morphological well-formedness of the verbal head. In other languages, English for example, morphologically bare forms are allowed to surface without any inflectional affixation.

In other words, the difference between Aspect and Agreement stems from a difference between the requirements on their representation. Aspect is always specified (morphologically overt or null) while Agreement is required by morphological considerations in certain languages. It would thus seem necessary to represent the lexical affixation involved in terms of feature-specification (in the case of Aspect) and in terms of head-adjunction (in the case of Agreement).1

Obviously, the question as to the syntactic status of the empty category involved, in the case of subjectless sentences in early grammars, remains open. The crucial point to retain from the discussion so far, however, is that the distribution of the empty category involved may not depend on the presence of a functional head, hence pro is excluded. A detailed discussion of null subjects in child grammar is included in section 3.4.1.

3.2.2. German

According to Clahsen & Penke's (1991) discussion of the acquisition of agreement in German, data up to the age of 2;0 fail to exhibit appropriate use of agreement markers. Given that the suffix -st, marking second person singular, is the only suffix marking agreement exclusively, its use in early German is
assumed to indicate the acquisition of the agreement category. This suffix appears after the age of 2;0 which correlates, roughly speaking, with the end of the Prefunctional stage in our terms. Apart from this, agreement marking in German is fused with that of Tense, so no claim about the emergence of either of these categories, on the basis of morphological evidence, is as clearcut as in languages like Greek. Recall, however, from the discussion on Tense and Aspect (see Ch.2), that it is Aspectual rather than Tense distinctions that seem to be operative in early German.

Turning now to the use of the inflectional endings -0, -n and -t, it appears that their presence in early grammars does not mark agreement as it does in adult grammars\(^2\). In adult German, the -0 ending is used for the first person singular, the -t ending for third person singular and second person plural and the -n ending marks either plural or infinitival forms. In Clahsen & Penke's (1991) discussion of the early data involving verbs marked for the -n or -0 ending, it is clear that the appearance of (main) verbs so inflected involves agreement errors. The authors claim that only 56% of verbs inflected for the -0 ending denote first person singular up to Corp.10 (age 2;4). Similar observations of low percentages (32%) are made with respect to the correct use of the -n ending in early German (Simone's corpus in Miller (1976)).

The claim that inflectional endings do not encode agreement marking in early German is also supported by the results from longitudinal studies reported in Clahsen (1986) and (1991b). The general finding is that, in the early stages, there is no correlation between the grammatical subject and the inflectional marking used by the child. As far as the verbal forms with the -t suffix are concerned, the data seem to indicate that it too is not used as an agreement marker (for the singular form). Rather, its presence is argued to correlate with the semantic nature of the verb used; specifically it occurs with one-place predicates (Clahsen & Penke (1991)). All in all, agreement specification seems to be missing in early stages of German acquisition.
Some examples of agreement ‘errors’ from the relevant stage are provided in (6):

(6) a. Mone auch Lump ausziehn. (Miller, 1976)
    Mone too rag take off
b. Mone auch Stuhl holen mal
    Mone too chair fetch just
c. mädi lafen
    girl sleep
d. mone schlafen
    Mone sleep
e. ich schaufel haben (Jordens, 1990)
    I shovel have
f. da papa anrufen
    there daddy phone
g. die auto hier boot umkipp
    the car here boat overturn

Given the lack of morphological agreement marking in early German, one of the questions that arises is whether AGR-S is present as a functional head in the clause structure. Recall that in the discussion of inflectional endings in German (Ch.2), I argued that, on the common assumption that finiteness encodes a binary value of Tense specification, the alleged correlation between finiteness and verb-placement is problematic. In most of the recent work on German language acquisition, the presence of an IP (or F(inite)P) is assumed to be available even at the earliest stage of development (see references in Ch.4). If Inflection encodes both Agreement and Tense features, the presence of the former can hardly be substantiated by the evidence available.

On the basis of data such as those in (6), it is clear that the Spec-head agreement process which results in the phi-features being shared by the subject and the verbal head is inoperative at this stage. Notice, moreover, that unlike Greek, infinitival forms are available in German. Contrary to the non-availability of overt subjects with infinitival verbs in adult German, however, early data show overt subjects with verbs marked for either finite or non-finite morphology. The latter are clear cases where no agreement specification is, in principle, available.
If, despite the facts of morphological agreement marking, we assumed that the child makes syntactic distinctions between finite and non-finite inflectional endings, we should not expect overt subjects to appear in infinitival contexts, contrary to fact. It thus appears that abstract properties associated with functional heads, in this case Agreement, are missing at the stage under discussion. If IP or AGR-S is present at this stage, the above mentioned facts remain mysterious. Unless the Spec-head agreement configuration is assumed to emerge independently of functional heads, an unlikely situation, it appears that child grammars consistently violate syntactic constraints on the representation of subjects.

In the framework of the theory presented here, these facts are consistent with the claims about early grammars at the Prefunctional stage. If functional heads, and in particular, Agreement, are missing from the clause structure, subjects are represented due exclusively to thematic requirements and Predication. In the absence of a canonical subject position, in the sense standardly assumed for adult grammars, no Spec-head agreement relation is available. Thus, given the lack of the relevant configuration, early grammars allow for lack of agreement between subjects and verbs.

As far as null subjects in early German are concerned, their availability is argued to be, to a large extent, related to the acquisition of agreement (Clahsen & Penke, op.cit.). Some illustrative examples of subjectless sentences are provided below:
As shown by these examples, null subjects can occur with verbs in the infinitival and the finite form. These facts are problematic if one assumes that the empty category involved is a pro subject. The problem again lies in the identification requirement, partly responsible for the distribution of pro. If agreement marking is not available at this stage, then null subjects always fail to be properly identified in the sense of feature specification via the Spec-head relation with the Agreement head. In the case of ‘non-finite’ forms the presence of null subjects is even more problematic. If the child is indeed aware of the syntactic distinction between finite and non-finite forms, the attested overlap in the contexts where null subjects are used requires an independent explanation. In terms of agreement features, infinitival forms bear negative specification inherently, thus lack of agreement is invariably involved in these cases.

Within the theory presented here, however, the presence of different inflectional endings does not correlate with different agreement (or Tense)
...in finite sentences, there are no $\emptyset$-subjects, but only $\emptyset$-topics.

But word order clearly correlates with the finiteness distinction. How can you account for this?
specification. The latter presupposes the presence of functional heads on which the relevant abstract features are encoded. The presence of null and overt subjects, therefore, is dissociated from syntactic constraints available in adult grammars. On the assumption that the functional structure is not available, the presence of different inflectional affixes as well as the availability of null and overt subjects are issues to be dealt with separately.

If inflectional morphemes at this stage do not encode Agreement features, their presence in Prefunctional grammars must relate to independent syntactic information. As shown in the previous chapter, the relevant set of morphemes used at this stage conveys Aspectual rather than Tense properties. Verbal forms available in the input include both the bare form of the verb (used in imperatives and first person singular) as well as stem plus suffix forms. Child data are thus expected to exhibit both morphological possibilities. This is consistent with the assumption that morphological properties of lexical items do not necessarily involve syntactic information. If Agreement and Tense features are appropriately specified only when the relevant functional categories are available, it follows that early verbal forms reflect morphological but not syntactic options. Accordingly, Aspectual features are encoded in the use of functional morphemes that in adult language mark Tense and/or Agreement (see discussion in Ch.2).

3.2.3. Spanish and French

Early Spanish is characterised by a variety of inflectional morphemes, which, as shown in the previous chapter, include both finite and non-finite endings. As far as the finite forms are concerned, Pina (1984) notes that up to the age of 24 months, the child predominantly uses the third person singular form of the indicative:
The use of first and second singular forms appears later (25 months) while the complete paradigm including plural forms appears even later (30 months). According to Pina (op.cit.) there is a restricted number of agreement 'errors' at this stage. The question, as before, is whether the use of the third person singular indicates the child's 'conservative' learning of morphological forms. If this is the case then the presence of a single form may not necessarily imply the absence of a functional head (AGR-S). Notice, moreover, that overt subjects are attested with non-finite verbal forms and, in particular, infinitives, gerunds and participles:

(9)  
a. nenes sentar  
children sit  
b. cantar nene  
sing baby  
c. carruto montar  
pram climb-in  
d. papa (es)tudiando  
daddy studying  
e. haciendo torre  
making tower  
f. hombre hablando  
man talking  
g. papa durmiendo  
daddy sleeping  
h. puerta cerrada  
door locked  
i. roto caja  
broken box  
j. rodilla limpiada  
knee washed
What is clear from the above examples is that the distribution of subjects in early Spanish is not regulated by the presence vs absence of agreement on the verbal head. If \textsc{agr-s} was available as a functional projection outside VP, the relevant requirements associated with the Spec-head agreement relation would be violated in the cases where overt subjects appear with inflected forms negatively specified for Agreement features.

In the context of the theory presented here, these facts are predicted to be possible at the Prefunctional stage. On the assumption that functional heads, in this case \textsc{agr-s}, are not available as yet, the distribution of subjects is independent of the inflectional form of the verb. As far as the presence of finite and non-finite forms is concerned, notice that Spanish does not allow morphologically bare forms to appear in either finite or non-finite contexts. Given that the range of non-finite forms attested at this stage exceeds by far the range of finite forms (imperatives, infinitives, gerunds and participles vs present forms) it seems that the relevant distinctions conveyed do not involve finiteness in the sense of either Tense or Agreement features. The (inherent) absence of agreement in non-finite forms and their productive use at the Prefunctional stage, casts doubt on the assumption that the impoverished nature of agreement is due to morphological constraints. Rather, it supports the idea that the distinctions conveyed by early verbal forms encode feature specification of an Aspectual nature. If this is correct, then the affixation of both the agreement suffix (3s) and the non-finite suffixes reflects lexical processes projecting morphologically incorporated units onto the syntactic level.

The facts of agreement in early French are less clear. Clark (1985) notes that, as in early Italian, Portuguese and Spanish, number contrasts in early French involve an imperative form (singular or plural) and a third person indicative. Notice that the singular imperative is identical to the first three persons of the indicative while the plural imperative of the first conjugation is identical to the infinitival form\(^4\). Given that the vast majority of verbs used at this stage belong to the first conjugation (\textit{-er}) (cf. Lightbown (1977)) among
others), only contextual cues would help to disambiguate the choice of the
inflection in a given utterance. In those cases where the form used is clearly
infinitival (rather than imperative), overt subjects are just as available as with
finite forms (see section 3.2.2.2.). With respect to agreement features, this fact
indicates that the child fails to make the relevant distinctions which are available
in adult grammar.

Null subjects in early French appear to be used in both finite and non-
finite contexts (43% overall):

(10) a. tomber (Lightbown, 1977)
    fall
b. pas manger
    not eat
c. lancer la balle
    throw the ball
d. veut pas lolo
    want not water
e. avant veux chocolat
    before want chocolate
f. boit
    drink

Given that agreement marking in the finite forms used is restricted to a single
form (in oral production), it is difficult to illustrate cases of lack of agreement
between the intended subject and the verb. Clark (1985) notes that early finite
forms appear only occasionally with a subject like 'bebe' or the child's name if
the child refers to its own activities. "If the actor is someone else, however,
children appear more likely to supply a subject, typically a noun with no article
at all. (Bloch, 1924, Cohen, 1969, Guillaume, 1927, Lightbown, 1977)" (Clark,
1985:723).

As non-finite forms are negatively specified for agreement features,
agreement 'errors' are invariably present on these forms. The relevant violation
in these cases involves the identification requirement on pro, in the absence of
specification for phi-features associated with an AGR-S head.
Similar observations hold for null subjects in early Spanish which are available both with finite and non-finite forms. This is consistent with the data of German and French which have non-inflected infinitives:

(11) a. agua beber
    water drink
b. bus montar
    bus climb
c. puede abrir
    can open
d. es grande
    is big
e. quiero pastel
    want cake
f. tira
    draw

All in all, it appears that the occurrence of null subjects in early grammars exhibits a common crosslinguistic pattern, rather than a parameterised choice as in the equivalent adult grammars. If one assumes that the latter depends on a parameterised property of the AGR-S head, one possible way of explaining the facts of child grammars is to assume that this property constitutes the 'default' value of the parameter involved (cf. Hyams (1986) among others). Notice, however, that this possibility could, arguably, be invoked as far as the licensing properties of AGR-S are concerned.

Identification, on the other hand, being an independent condition on the distribution of pro, could not be subsumed under this default value. If we assume that the use of non-finite forms reflects the child's syntactic awareness of the negative value of Agreement features, we should expect the occurrence of null subjects to be restricted to finite contexts, contrary to fact. Moreover, as we saw above, the use of finite forms does not indicate agreement properties, as their use is very restricted and the choice of the morphemes is, occasionally, wrong. We could thus conclude that Agreement is not yet part of the early grammars in the sense that its abstract properties specified on the functional head are not acquired.
In the theory presented here, this is predictable given that morphological affixation does not necessarily reflect the syntactic availability of the relevant category. Thus, in the case of early Greek, Agreement is invariably present for reasons that have to do with the morphological well-formedness of the verbal head. In other languages, like German, French and Spanish, Agreement marking is not obligatory (in non-finite forms), while the inflectional affixation on finite forms conveys, in adult grammar, Tense and/or Agreement specification. Given that early grammars of this group of languages, fail to show syntactically operative agreement, it follows that the syntactic properties associated with this functional category are not available. Thus, the common occurrence of null subjects crosslinguistically is dissociated from parametric variation, clearly a desirable conclusion. What remains to be explained, however, is the structural representation of null subjects in the absence of the appropriate functional head. Before I move on to discuss this issue, I will briefly discuss the other property associated with Agreement heads, namely structural Case-assignment.

3.3. Case

Following recent work in the syntactic literature, I will assume that Nominative Case is assigned to subjects under the Spec-head configuration with Inflection (AGR-S in our terms). Movement of the subject from its thematic position inside VP to the Specifier position of AGR-S is thus assumed to be partly motivated by Case considerations. Moreover, structural Accusative has been argued to be assigned under Spec-head agreement inside the AGR-O projection (Ouhalla (1991b), Chomsky (1992)). Thus, a uniform account of structural Case assignment is reached on the basis of abstract properties associated with agreement heads (see Ch.1).

The UG constraint that requires arguments to be assigned Case is standardly referred to as the Case Filter (cf. Chomsky (1981)). I will assume, following Abney (1987), that its formulation refers to DP’s rather than NP’s on
the ground that Case-features are primarily associated with Determiners. In this respect, the formulation of the Case Filter presupposes the categorial status of the arguments that are subject to it.

With respect to Case-assignment in Prefunctional grammars, the obvious question is how, in the absence of functional categories, arguments of the verb can be assigned structural Case. Given that the Case Filter is part of UG, hence expected to be available at this stage, the absence of AGR-S and AGR-O does not render the UG requirement inoperative. It simply excludes the possibility of structural Case-assignment taking place in a way similar to adult grammars. I will maintain that the lack of Case-features has to do with the categorial status of the arguments at the Prefunctional stage. In particular, the absence of functional categories, in this case Determiners, implies that arguments in early clause structure have the status of NP's. This, in turn, implies that the Case Filter, though operative in principle, applies vacuously at this stage.

There is an additional point concerning the non-availability of Case in Prefunctional grammars. In particular, it has been argued that Case-features belong to the set of functional categories. This can be viewed either as Case projecting as an independent category in the clause structure (KP in ?? work), or it being realised as features on a functional head (Abney (1987)). Either representation is, in principle, excluded in early grammars on the ground that the availability of a functional head is presupposed in both cases

Turning now to the facts of early Greek, it is clear that both determiners and Case-marking in terms of Case-distinctions are absent at the Prefunctional stage:
(12)  a. mama ceta (=tis mamas i zaketa)
mummy jacket (=the-gen mummy the-nom jacket)
b. papaki tuto (=tu papaki ine tuto)
daddy this (=the-gen daddy is this)
c. kubela pame (=stin kunia-bela pame)
swings go-1p (=to-the swings go-1p)
d. Atsia apto (=tis Alexias ine aifo)
Alexia this (=the-gen Alexia is this)
e. delo pezi Atsia (=me tin tileorasi pezi i Alexia)
television plays Alexia (=with the television ...)
f. pu'i baba? (=pu ine o babas?)
where daddy (=where is the daddy?)
g. nato kalotsi Atsia (=nato to karotsi tis Alexias)
there pushchair Alexia (there the pushchair the-gen Alexia)
h. ponane pojalakja (=ponane ta podharakia)
hurt-3p legs-dim (=hurt the legs-dim)

Note that, the presence of determiners in adult Greek is obligatory even with
proper names, while Case distinctions (Nominative, Accusative, Genitive) are
morphologically marked primarily on the determiner and, more restrictedly, on
the Noun complement. As shown by the examples in (12), however, Nouns at
this stage appear in a form which is neutral for Case. Morphologically, this form
is identical, in some cases, to the Nominative or Accusative. In the absence of
determiners where Case is distinctly marked, Nouns appear morphologically
underspecified for Case. This is particularly clear in possessor-possessed
constructions, as in (12a,b,d,g), where no genitive marking appears. Thus, we
can conclude that the Case system is not as yet operative at this early stage.

Similar observations on the impoverished nature of the Case-system up
to the age of 2;0, have been made with respect to early German data (Tracy
observation is that, prior to the appearance of morphological Case-distinctions,
nouns and noun phrases in early German appear in the Nominative which,
however, is identical to the bare form of the noun. It thus appears that the use
of this form indicates lack of specification for Case features, rather than
Nominative Case.
This becomes clear with the arbitrary distribution of nouns marked for 'Nominative'. In particular, this form appears in contexts where Accusative or Dative are required in the adult language (Mills (1985)). In Clahsen, Eisenbeiss & Vainikka (1991), it is argued that there exists a correlation between the acquisition of prenominal possessive genitive marking '-s', nominal agreement and the DP structure. The genitive ending is the first Case to be acquired while accusative and dative follow in that order. The explanation argued for has to do with structural representations (in terms of positions of arguments) being crucial for the acquisition of Case-features associated with each argument.

The absence of Case-distinctions in early German and its correlation with the absence of a Determiner system is consistent with the Greek data discussed above. Child data from languages with an impoverished Case-system, like English, are not as clearcut as regards morphological Case-distinctions. The Nominative-Accusative distinction, in adult speech for instance, is evident only in (first and third) person pronouns which appear in totally distinct forms according to their Case-features, (e.g. I/me, he/him, she/her etc.). Genitive Case, on the other hand, is overtly marked either by the presence of the suffix '-s' or by the insertion of the Case-marker 'of':

(13) a. the city's destruction
    b. the destruction of the city

With respect to early English data, it is a well-known fact that genitive marking fails to appear, while personal pronouns, in the vast majority of cases, appear in the Accusative form, regardless of their structural position:

    b. Big teddy bear supper.
    d. Nana key.
    e. Claire pencil.
    f. Cup tea ready (=the cup of tea is ready)
    g. Want cup tea.
    h. Want piece bar (=I want a piece of the chocolate bar)
    i. Colour crate (=the colour of the crate)
The lack of an overt Nominative/Accusative Case distinction as indicated by data such as those in (15), is, in theoretical terms, a result of the lack of positions responsible for structural Case-assignment. In particular, in the absence of IP (or AGR-S) and AGR-O, the canonical subject and object positions cannot be structurally defined. This implies that properties associated with these positions, such as structural Case-assignment, cannot be instantiated.

Recall, however, that this conclusion does not account for the absence of genitive Case-marking in early data, as this does not involve the presence of the agreement heads AGR-S or AGR-O. As was discussed above, with respect to early Greek and early German data, the lack of determiners as functional heads entails the absence of Case-features if these are assigned to D heads. In this respect, it has been argued that the genitive morpheme -'s in English is generated under a D head and subsequently cliticises onto the element occurring in (Spec,DP) position (cf. Fukui (1986)). As far as early clause structure is concerned, the absence of D's, due to their status as functional categories, implies the absence of the genitive Case-marker, illustrated by the examples in (14). Thus, the correlation between Determiners and Case-features is supported by the facts of early English on a par with the facts of early Greek and early German.
3.4. Null arguments in Prefunctional grammars

3.4.1. Null subjects

As argued in section 3.1., the distribution of null and overt subjects in Prefunctional grammars overlaps in that they can invariably occur in both finite and non-finite contexts. Moreover, the absence of the agreement (AGR-S) projection renders the pro account problematic, as the requirements for the distribution of this empty category are associated with properties of AGR-S. In addition, Case-assignment properties requiring the Spec-head configuration inside an agreement projection (AGR-S and AGR-O) have been argued to be missing at the Prefunctional stage. Accordingly, we can conclude that the pro analysis for missing subjects in early clause structure is inadequate on theoretical grounds.

In the theory suggested here, an account of null arguments, in this case subjects, is independently motivated. First, the structural realisation of null subjects is necessitated by UG considerations, in particular, Predication and the Theta-criterion. Secondly, in the absence of functional projections, the empty category involved is predicted to be made available directly by UG, in the sense that its distribution is regulated by configurational constraints, defined by UG, in terms of c-command.

In this respect, the possibility of the empty category involved being instantiated only in child grammars (cf. Radford (1990)), and not in adult language, is excluded in principle. In other words, the assumption that UG is available throughout the language acquisition process has two distinct implications. One is that early clause structure conforms to UG requirements as discussed previously with respect to the representation of arguments and X'-theory for example. Thus, child grammars are a subset of the possible grammars generated by UG.

The other implication is that the presence of UG excludes the
representation of categories other than the ones available in adult language. In this regard, child grammars are not allowed to be 'enriched' by the postulation of categories or representations not made available by UG. This assumption is independently motivated by considerations of learnability. If we assumed that child grammars could be 'enriched' with categories that fall outside the set defined by UG, it would follow that early grammars could be unconstrained in terms of the (infinite) number of alternative representations they allowed. Moreover, it is not obvious how these alternative possibilities could be made unavailable in the process of development. At best, they could be argued to remain optional when adult structure became available: an undesirable result if the underlying motivation for the presence of UG is to provide constraints on possible representations.

The repertoire of empty categories that exist in adult languages is standardly assumed to include pro, PRO, wh-trace (variables) and NP-trace. Of these, wh-trace and NP-trace are excluded given that in the subjectless sentences under discussion, no movement process seems to be involved. If the presence of pro is excluded, as argued above, the remaining choice is PRO.

The assumption that null subjects are realised as PRO in Prefunctional grammars is to be favoured for a number of reasons. First, PRO is an empty category whose distribution does not depend on the presence of a functional head in the clause structure. In adult grammars, PRO is found in non-finite contexts as, for example, in the subject position of infinitival clauses and gerunds. On the assumption that finiteness, characterised in terms of syntactic features realised on a functional head, is not available in early grammars, the implication is that PRO can occur in the early VP structure.

Secondly, the requirement on the occurrence of PRO is that it be in an ungoverned position (PRO theorem, Chomsky (1986)). In the VP structure suggested for early grammars, the subject position is represented in terms of adjunction to VP:
In this structure, c-command of the subject is blocked by the presence of the first VP node. Thus, as required, PRO occurs in an un gover ned position (but see discussion in section 3.4.2. and fn.12). Assuming that the only condition that UG imposes on the distribution of PRO is that it occurs in an un governed position, the representation involved in early grammars is consistent with this requirement.

Thirdly, the requirement that PRO occurs in un governed positions entails that these positions are not Case-marked. Given that Case is assigned under government, PRO does not require Case. This property of PRO is an additional reason for its appearance in early grammars. As argued in the previous section, Case-assignment is not operative at this stage, so the presence of an empty category which does not require Case is compatible with general properties attributed to early clause structure. I will come back to this in section 3.4.2..

Notice, however, that the choice of PRO as the structural realisation of null subjects gives rise to certain problems regarding standard assumptions about its interpretation. In adult language, the interpretation of PRO is assumed to be either coreferential with an antecedent in the sentence or arbitrary. In particular, in control constructions, PRO is coreferential with the appropriate antecedent depending on the nature of the matrix verb (subject/object control):

(17) a. John promised Mary [PRO to leave].
    b. John asked Mary [PRO to leave].

(17a) is an instance of subject control. PRO, in this case, is coreferential with the subject of the matrix clause, namely ‘John’. In (17b), PRO is understood to be coreferential with ‘Mary’ as the matrix verb is an object-control verb. As shown
in Manzini (1983), however, in some cases of control constructions, the choice of the controller seems to be largely determined by pragmatic factors. Thus, constructions which are standardly classified as subject-control or object-control can instead involve an object or subject controller respectively:

(18) a. John promised Bill [PRO to be allowed to come].
    b. John asked Bill [PRO to be allowed to come].

In (17a) and (18a), PRO is coindexed with the matrix subject and the matrix object respectively, despite the fact that the same verb is involved in both cases. A similar situation holds for (17b) and (18b). Thus, strictly speaking, the choice of the controller does not appear to be determined by exclusively syntactic criteria.

In cases where PRO does not have a specific referent, it is assumed to have arbitrary interpretation:

(19) a. It is difficult [PRO to leave].
    b. [PRO eating chocolates] is a bad habit.

However, in certain contexts where the arbitrary interpretation is assumed to be the only choice, it appears that PRO can, after all, have independent specific reference, as argued in Bresnan (1982):

(20) a. Mary was happy and excited. PRO to have involved herself in the group was a risky action.
    b. She sighed and looked around the empty room. It was unclear what PRO to do with herself now that Molly was gone.
    c. PRO to involve oneself in a political group is a risky action.

In (20a&b) the occurrence of the anaphor 'herself' does not give rise to ungrammaticality, thus indicating that the referential status of PRO, which binds the anaphor, cannot be arbitrary. The underlying difference between (20a&b) and (20c) is arguably one between specific and non-specific temporal reference, which leads to the definite vs arbitrary interpretation of PRO (Thompson (1973)). In particular, the assumption is made that the interpretation of PRO "is
predictable from temporal or aspectual and contextual properties of the sentence in which it occurs" (Bresnan, 1982:329). The restriction on temporal/aspectual features is similar to the one found in middles and generic constructions where the arbitrary interpretation of the subject requires non-specific temporal reference. It thus seems that the arbitrary features on PRO are not the only choice in non-control constructions. Rather, the interpretation of PRO, in these cases, can be construed as coreferential with an antecedent selected from the context.

Going back to null subjects in Prefunctional grammars, it is clear that their interpretation is specific in the sense that the intended referent is easily recoverable from the context. Given that subjectless sentences do not always involve control constructions, the question that arises is how PRO receives a specific interpretation. I suggest that a possible explanation can be formulated in terms of my basic theoretical assumption concerning the lack of functional categories at the relevant stage.

Manzini (1983) argues that PRO is an anaphoric element which, in obligatory control constructions, is bound by the matrix subject/object. Like all anaphoric elements it is subject to Binding Condition A which requires them to be bound inside their Governing Category. In obligatory control constructions, the Governing Category of PRO is the matrix clause which contains the binder i.e. the matrix subject/object. In the case where arbitrary features are assigned to PRO, the assumption is that the matrix clause, i.e. the Governing Category, does not contain a suitable binder. As a result, PRO is assigned an arbitrary interpretation by a default mechanism of the grammar. The point to stress with this analysis is that in both the case of obligatory control and arbitrary interpretation, PRO can be taken to have a Governing Category, differing as to whether it contains a suitable binder.

According to the discussion so far, PRO, like all empty categories, is assumed to be subject to the requirement that it have a Governing Category. The
definition of this has been argued to involve AGR, i.e. a functional category (cf. Chomsky (1981) and Aoun (1985)). In fact, most of the categories listed in Wexler and Manzini (1987), which determine Governing Categories across a broad range of languages are functional, e.g. Tense and Mood. This fact can be understood to imply in general that the notion of Governing Category is crucially defined by a functional category of some sort, the choice being subject to parametric variation, as Wexler and Manzini argue.

Going back to the structure in (16), the absence of functional categories implies that PRO lacks a Governing Category. This situation results in its failure to find an antecedent within a syntactically defined domain, thus opening the possibility of finding an antecedent in a discourse context. In other words, this reasoning leads to the conclusion that PRO in early grammars is controlled by a discourse antecedent. Notice that, as shown by the example in (20a&b) the possibility of PRO being coreferential with an antecedent in the context is not excluded in adult grammars. Hence, early grammars instantiate a choice available in adult language.

As regards the arbitrary interpretation of PRO, it seems unlikely that it is ever intended in the early stage. This is consistent with the well-known observation that child speech is basically context-bound in the sense that information conveyed is drawn from the immediate context. This claim, though probably true, does not explain in any significant way the lack of arbitrary interpretation for null subjects. Nevertheless, evidence for this assumption can be derived independently. In particular, the absence of arbitrary features associated with arguments in early grammars is a general phenomenon, and not one restricted to the interpretation of PRO. This could be argued to reflect general properties of the conceptual system, in the sense that the [arb] feature is not as yet part of the conceptual apparatus of the child, or at least, it is not as yet grammaticalised.

In particular, there are other means of expressing arbitrary interpretation
which are instantiated in adult language while they are missing in child grammars. In some languages, like Greek, subjects assigned the [arb] feature can be either overt or null. In the first case, a pronoun, ‘kanis’, is used in generic (or gnomic) constructions, as in (21a) (cf. Tsimpli (1989)). In the case of null subjects with arbitrary interpretation, the agreement marking used is second person singular, as in (21b):

(21) a. Apo edho, vlepi kanis tin Akrópoli.  
from here see-3s one the Acropolis  
"One can see the Acropolis from here."

b. Apo edho, vlepis tin Akropoli.  
from here see-2s the Acropolis  
"One can see the Acropolis from here."

The use of the pronoun ‘kanis’ in child grammars is extremely rare even at quite late stages of acquisition. This could be argued to reflect a general delay in mastering the semantic information associated with the pronoun system (cf. Chiat (1978)). The second possibility of arbitrary interpretation illustrated in (21b), presupposes that Agreement is syntactically available, given that the [arb] features assigned to pro are the result of it being in a Spec-head relation with the functional head. Thus, this possibility is independently excluded in Prefunctional grammars.

All in all, it appears that the grammatical means of expressing arbitrary interpretation in adult language are not attested in child grammars. This may be understood as indicating that the lack of arbitrary interpretation in subjectless sentences stems from general, possibly semantic, constraints on the acquisition of the relevant feature. Thus, PRO subjects in early grammars are predicted to always have a specific referential interpretation, the antecedent being provided by the context.

An additional question that arises with the above analysis of null subjects concerns the transition from the use of contextually identified PRO to the use characteristic of the target language. In particular, if, as argued above, the status
of null subjects in child grammars is a possible one in adult language what excludes the use of PRO subjects in, for example, finite contexts? The answer, I suggest, lies in the emergence of a functional structure. More precisely, when functional categories, in this case AGR-S, project, the identification requirement on empty categories is fulfilled by syntactic means and, in particular, the Spec-head agreement relation. In this configuration, however, PRO would be governed, hence the construction is ruled out due to a violation of the basic requirement on the distribution of PRO. If the target language allows null subjects, a parametric choice, the syntactic realisation of the empty category would be pro. If not, then the choice of a null subject is excluded in finite contexts.

This account of the status of null subjects in Prefunctional grammars could be viewed in terms of a distinction between discourse- and sentence-oriented languages (Tsao (1977), Huang (1984)). In this respect, the claim that child language is context-bound could be reinterpreted as it being a discourse-oriented language. One of the basic properties of this set of languages, referred to as 'cool' languages (Huang (1984)) is that they are topic-prominent as opposed to subject-prominent, where topic is more of a discourse notion than subject, typically a syntactic notion. Moreover, in these languages, empty categories appear to be available to a much larger extent than in sentence-oriented languages. Identification in these cases is assumed to be the result of coindexation of the null topic with a compatible element present in the discourse or context. The distinction between discourse- and sentence-oriented languages is argued by Huang to capture in a formal way a descriptive generalisation about the interaction between pragmatics and syntax. According to Comrie (1983) the difference between Chinese (a discourse-oriented language) and English (a sentence-oriented language) can be viewed as a difference in the extent to which pragmatics can override grammar.

In this respect, it could be argued that, in certain cases, syntax allows for pragmatic factors to filter-in a given representation. This, apparently, is one of
the properties attributed to languages like Chinese, Japanese and Korean as far as the availability of empty categories in these languages is concerned. In view of recent proposals regarding the properties associated with functional categories, this observation could be understood to imply that certain requirements, like identification, can be fulfilled either by syntactic categories (in 'hot' languages) or by a combination of syntax and pragmatics (in 'cool' languages). Note that the latter is not an absolute distinction given that contextual antecedents can be used for identification even in sentence-oriented languages (cf. (18a&b) and (20a&b)). The crucial point to retain, however, is to what extent syntax allows for the possibility of pragmatics determining the well-formedness of the construction involved.

Going back to Prefunctional grammars, it is clear from the discussion above that they display properties of discourse-oriented languages. In the absence of Agreement as a functional head, the identification requirement fails to be met by syntactic means. It thus seems plausible to assume that, in Prefunctional grammars, the role of context-provided antecedents in identification is a legitimate alternative given that this choice constitutes a valid one in adult languages as well.

When the functional structure emerges, the distinction between finite and non-finite contexts becomes available. In the former case, a parametric option instantiated in the availability of pro subjects is involved. In null subject languages, identification is met by AGR-S. In non-null subject languages, pro is excluded due to the absence of an appropriate licensing head. The choice of PRO in finite contexts is excluded given that, in a functional structure, PRO would be governed in the Spec-head configuration. Movement of PRO to this position is obligatory given that the presence of an agreement projection is the first choice for the identification requirement to be met. In these cases, however, PRO is governed, thus the representation is ruled out. In non-finite contexts, on the other hand, both null and non-null subject languages allow for PRO to occur given that, according to standard assumptions, the canonical subject position is,
in these cases, an ungoverned position. Thus, identification is met either by control relations or by context-provided antecedents.

3.4.2. Null objects

The assumption that Prefunctional grammars are included in the set of discourse-oriented languages gives rise to predictions concerning the availability of null objects. It is a well-known fact that languages like Chinese allow for empty categories in both subject and object position, as extensively discussed in Huang (1984). In the context of the theory presented here, early grammars exhibit similar properties to 'cool' languages in the sense that they also allow for the occurrence of empty categories which meet the identification requirement by reference to an antecedent provided in the context or preceding discourse.

If this assumption is correct, it should generalise to both subjects and objects as the relevant distinction is not accounted for by parameterisation. Rather, on the assumption that AGR-S and AGR-O are not as yet part of the clause structure, subjects and objects both lack canonical positions, in that the configuration responsible for structural Case-assignment and identification is not available. Thus, both arguments can, in principle, be null given the classification of early language as being discourse-oriented.

Early data which involve missing objects have been attested in a number of languages:
(22) Greek:
   a. ego zeno (Katis (1984))
      I spank-1s
   b. visi (=esvisa)
      switch-off-3s (=switched-off-1s)
      (when asked what he did to the light)
   c. toi ego. fao.
      eat-Imp-3s I eat-Perf-1s
      (when asked what he wants to do with the chewing gum)
   d. vexi (=na to vreksis)
      wet-3s (=sub. it wet-2s)
      "I want you to wet it"
   e. mazesi, foesi (=na tis mazepsis/na tis foresis)
      gather-3s wear-3s (sub.them-gather-2s/sub.them wear-2s)
      "You gather the clothes and put them on me"
   f. valo (= na me vgalis)
      take-1s (=sub.me-take-off-2s)
      "take me off the swing"
   g. zoso (=na (mu) (to) dhosis)
      give-1s (=sub. me-it-give-2s)
      "Give it to me"
   h. en selis (=dhen thelo)
      not want-2s (=not want-1s)
   i. selo valis (=thelo na to valis)
      want-1s put-on-2s (=want-1s sub.it-put-on-2s)
   j. skisis (=to-skisa)
      tear-2s (=it-tore-1s)
      "I tore it"

(23) English (Radford, 1990)
   b. Jem put back (in reply to 'Please put that back')
   c. Lady read (handing book to recordist for her to read to him)
   d. Jem have (reaching for pot of yoghurt)
   e. Wayne got.
   f. Want again (wanting bubble container again)
   g. not reach (=I can't reach it)
   h. Have (in reply to 'You want a drink?')
   i. Put on (wanting his mother to put his shoes on)
It is noteworthy that the number of missing objects in early grammars is relatively smaller than the number of missing subjects. On the basis of the acquisition data from Brown (1973), Hyams & Wexler (1991) claim that the percentages of missing subjects and missing objects in contexts where, in adult grammar, their presence would be obligatory, indicate that the two phenomena cannot be viewed as similar in nature. In particular, they claim that missing subjects are consistently used in early grammars while missing objects occur to a much more limited extent.

Radford's (1990) observations, however, contrast sharply with the above. He claims, on the basis of an extremely extensive corpus, that, on a par with null subjects, there are numerous examples in early English data that involve null objects. Objectless sentences can be found in Bowerman's corpus of data as well:
In view of these data, it seems that the occurrence of objectless sentences in early grammars is by no means negligible and, for two reasons, their availability cannot be attributed to performance errors. The first is that objectless sentences are attested in a number of languages. This seems to imply that we are not dealing with a restricted, possibly language-specific deviation from the target language, but with a generalised pattern. The second reason is that objectless sentences become extremely rare after the period referred to here as the Prefunctional stage.

This does not contradict the claim that missing objects occur less frequently than missing subjects. The question, however, is to what extent frequency of occurrence is theoretically interesting in any way. A standard assumption underlying the formulation of any competence theory is that frequency of occurrence is not predictable, and predictions are only made about ‘possible’ vs ‘impossible’ patterns. The occurrence of a pattern is significant to the extent that it can lead to a generalisation accounted for by the theory in question. The frequency with which this pattern occurs, however, is determined by performance factors, e.g. individual variation.

There could be additional pragmatic reasons for the difference in frequency of occurrence. One of the most common phenomena of early speech is the tendency for the child to talk about her own activities. In these cases, the
child may omit subjects or, less frequently, use her own name to refer to the agent of the action. When a different referent is involved the child typically does not omit the subject (Clark (1985)). This observation has been made with respect to French data (Bloch (1921), (1923)) as well as Italian (Antinucci & Parisi (1973), Bates (1976)), Spanish (Eisenberg (1982)) and Portuguese (de Lemos (1975)). This suggests that the frequency of use of null vs overt subjects is determined by pragmatic factors which, in this case, would reflect the child’s perception of given/new information. Although descriptively this is an interesting observation, theoretically it can hardly qualify as an explanation for the availability of null subjects as a syntactic choice.

With respect to the omission of objects, on the other hand, notice that, at least with the Greek data in (21) as well as some of Bowerman’s data in (24), they are produced in the form of an answer to a preceding question which includes the intended object. This is quite suggestive as regards the assumption that given/new information regulates the omission of arguments at this stage. In other words, when the referent of the missing argument is provided in the context or preceding discourse, it constitutes given information, thus its omission is expected 11. Apart from objectless sentences with overt subjects, there are also transitive verbs with both arguments missing. This is reported in Clark (1985) for Romance data as well as Radford (1990) for English data.

(26) (Radford, 1990)
   a. Get out (getting shapes out of box)
   b. Push (pushing toy bus)
   c. Cuddle (cuddling his mum)
   d. Not reach (=“I can’t reach it”)
   e. Want again (wanting to be tickled again)

In the absence of contextual cues concerning the production of such utterances it is hard to speculate as to whether the omission of both arguments is a result of them being perceived by the child as given information. Nevertheless, it appears that the omission of arguments, either subjects or objects, is partly determined by pragmatic factors. In terms of their theoretical implications,
however, the above considerations are devoid of interest. The crucial point is
that the possibility of omitting arguments, at this stage, is grammatically
available and any theory of acquisition must address this issue if it is to provide
an account of what constitutes a well-formed construction in early grammars.

In the theory suggested here, the occurrence of objectless sentences is
subsumed under the general property of Prefunctional grammars, namely that
they are discourse-oriented. Recoverability of the empty category involved is, as
with null subjects, achieved by reference to a contextual or discourse antecedent.
Given that, due to UG requirements, thematic positions are assumed to be
structurally represented, the next question concerns the nature of the empty
category involved in the object position.

Recall that, in the syntactic framework adopted here, objects in adult
language move from their base-generated position, where they are assigned a
theta-role, to the canonical object position, namely (Spec, AGR-O). Accusative
Case-assignment takes place under the Spec-head agreement relation inside the
AGR-O projection (cf. Ouhalla (1991b), Chomsky (1992)). As with pro subjects,
identification of object pro, in, for example Bantu languages, is assumed to take
place under the Spec-head agreement relation inside the AGR-O projection (cf.
Baker (1988)). Thus, subjects and objects receive a uniform account in terms of
Case-assignment, licensing and identification.

In the absence of functional categories, null objects cannot be assumed to
be realised as pro for reasons similar to those invoked for the non-availability
of pro in subject position. On the assumption that null objects in Prefunctional
grammars involve a representation similar to that for null subjects, it is natural
to suggest that the choice of the empty category involved should reflect the
common properties of sentences with null arguments. Thus I suggest that PRO
is the empty category in object position as well. This claim raises immediate
problems with the requirement on PRO that it be ungoverned. In particular,
according to standard theoretical assumptions, the object position is taken to be
a governed position. I suggest that a possible solution to this problem can be provided on the basis of considerations that pertain exclusively to the nature of PRO.

To begin with, let us consider the categorial status of PRO. As argued above, arguments at the Prefunctional stage are represented as NP's rather than DP's. This assumption accounts for the absence of Case-assignment given that Case-features are primarily associated with D heads (Abney (1987)). In the absence of DP's, the Case Filter applies vacuously as NP's fall outside its domain. If arguments in early grammars are NP's, it follows that PRO has the categorial status of an NP as well. This assumption apparently contrasts with the idea that pronouns are D heads (cf. Abney (1987)) which would imply that PRO, given its pronominal features, belongs to the same category.

Notice, however, that there are certain properties associated with PRO which force us to distinguish it from other arguments. In particular, while Case-assignment is obligatory for DP's, PRO may not get Case as the PRO-theorem excludes the occurrence of PRO in governed positions. If Case is assigned under government, as standardly assumed, PRO is forced to appear in non-Case-marked positions. Another property of PRO which is not shared by other DP's (either overt or pro) is that PRO does not have independent referential properties in the sense that its anaphoric or pronominal status is determined by a combination of syntactic (or pragmatic) properties in a given construction.

In Chomsky & Lasnik (forthcoming), the exceptional status of PRO is addressed in an attempt to include it in a uniform account of Case theory and the properties of Chains. They suggest on the basis of well-formed sentences like (25), that the nongovernment requirement for PRO fails to account for its distribution:

(27) We never expected [PRO to be found t]
It thus appears that PRO can occur in a governed position which, in (27), is the object position. Chomsky & Lasnik suggest that a possible solution would be to assume that the non-government requirement is restricted to applying at S-structure. This assumption, however, is shown to be inadequate for constructions where both the (reformulated) nogovernment requirement as well as conditions on Chains seem to be observed:

(28) * PRO to strike t [that the problems are insoluble]
    * PRO to seem to t [that the problems are insoluble]

In these examples, PRO appears in a non-governed position at S-structure, heading a theta-marked chain. As the ungrammaticality of (27) and (28) is not accounted for on the basis of the postulated requirements on PRO, Chomsky & Lasnik suggest an alternative solution, that is argued successfully to accommodate the facts about PRO within a general theory based on Case considerations. In particular, they suggest that PRO has Case, albeit a different case to the familiar ones. The exceptional status of PRO is expressed in these terms: "From the point of view of interpretation, we might regard PRO as a "minimal" NP argument, lacking independent phonetic, referential or other properties. Accordingly, let us say that it is the sole NP that can bear null Case" (Chomsky & Lasnik, pp.80).

For the purposes of the current discussion, there are two points that I would like to emphasise. The first is the distinct status of PRO as a 'minimal' argument. Although the term 'minimal' is somewhat vague, I would like to suggest that it can be reinterpreted as meaning that PRO has NP status as opposed to the DP status of arguments in adult grammar. In this respect, the suggestion about null Case means that Case-features are exclusively associated with a null NP and are compatible with a negatively specified Agreement head. This appears to be the interpretation intended by Chomsky & Lasnik (op.cit.), as Case-checking invariably takes place under a Spec-head configuration with an agreement head (AGR-S or AGR-O). With respect to subject PRO, it seems necessary that the agreement head lack agreement features, as with non-finite
constructions in English. Negative specification of agreement features is therefore the only one compatible with null Case.

If this assumption is correct, however, the occurrence of PRO in object position is not excluded. Thus, if it is true that the non-government requirement fails to account for the distribution of PRO, and Case-checking of subjects and objects takes place in similar configurations ((Spec, AGR-S) and (Spec, AGR-O) respectively), PRO will be allowed as long as AGR-O lacks agreement features. This is a logical possibility which could, in principle, be instantiated in a language.

The second point concerns the claim that PRO has null Case. It could be argued that the motivation for this assumption has to do with the NP status of PRO as opposed to other DP arguments which are required to bear Case of the familiar types (Nominative, Accusative etc). If this is correct, then Case considerations correlate with the presence of functional heads, in this case, Determiners. This is consistent with the conclusion reached in section 3.3. with respect to early child data. We can thus conclude that even if PRO has (null) Case, this does not contradict the general lack of Case-assignment assumed for Prefunctional grammars, as null Case is a property exclusive to PRO. On the assumption that PRO is an NP argument, Case-features associated with it are not excluded. What remains unavailable, due to the absence of the AGR-O projection, is the Case-checking mechanism assumed by Chomsky and Lasnik (op.cit.)

To summarise the discussion so far, in the absence of the non-government requirement and an AGR-O projection, the availability of PRO in object position is predicted. As far as its interpretation is concerned, coreferentiality with a context-provided antecedent is assumed to be responsible for recoverability as with subject PRO. If this reasoning is correct, null arguments in Prefunctional grammars receive a uniform account: a desirable conclusion for two reasons.
First, the availability of null subjects in adult language is the result of parameterisation associated with properties of a functional category, i.e. AGR-S. Any account of the empty category involved is thus predicted to be a priori distinct from an account of the availability of null objects in a language. In the absence of functional categories, subjects and objects receive an alternative account based on non-parameterised properties of grammar; in particular, structural representations that do not involve the presence of a functional head and the recoverability condition on empty categories.

Second, the assumption that Prefunctional grammars are discourse-oriented predicts that both arguments can, in principle, be null, given that this is precisely the situation with 'cool' languages, like Chinese (cf. Huang (1984)). The recoverability condition is satisfied by coreference with a discourse/context antecedent. Thus, the interpretation of PRO in the case of null objects is specific, as suggested for the interpretation of PRO in subject position.

With respect to the transition from this stage to the target language, PRO is generally excluded along the lines suggested for PRO subjects in finite contexts. The emergence of functional structure and, in particular, the AGR-O projection, forces movement of the object to the (Spec,AGR-O) position for reasons to do with identification. In this position, however, the features of PRO are incompatible with the head, thus giving rise to ungrammaticality (but see fn.10). As before, the underlying motivation for obligatory movement has to do with the assumption that, in the presence of syntactic means of meeting the recoverability condition, syntax constitutes the first choice. If the construction is ruled out due to a violation of syntactic requirements, no alternative route, e.g. pragmatics, is available. Recall that, in the case of PRO subjects in non-finite, non-control contexts, no violation ensues as PRO occurs in an ungoverned (or Case-compatible) position. Recoverability, in this case, is met by coreference with an antecedent not in a syntactically defined domain. Similar considerations hold for the availability of object PRO in adult language.
FOOTNOTES

1. In languages where verbs are not bound morphemes, like English, it could be argued that Aspectual suffixes are represented in terms of a head-adjunction structure as is assumed to be the case for Agreement morphology in Greek. If this assumption is correct, then one could assume that this representation should be available in Greek as well. This implies that the verbal head in Greek involves two head-adjunction structures, [[V+Asp]+Agr]. The obvious problem, however, is why Aspectual morphology in Greek fails to fulfill the requirement on the bound nature of the verb. Recall that, Aspect in Greek is always morphologically realised, so the obligatory presence of Agreement remains unexplained. Given that Aspectual affixation appears on the verbal stem, I will maintain that, at least in languages like Greek, a different representation is involved as illustrated in the structure in (5). As far as languages like English are concerned, both possibilities are, in principle, available. However, if one assumes the obligatory presence of Aspectual features, the latter being part of the thematic structure of the verb, then it seems that the head-adjunction structure is less desirable. This is due to the fact that requirements other than morphological ones motivate the (V,Asp) representation. If the latter is assumed to be justified for some languages (Greek for example), it could, for reasons of theoretical coherence, be argued to be available crosslinguistically as well.

2. I use the -0, -n, -t endings following Clahsen & Penke’s (1991) classification of inflectional affixes in early German. The first person singular in German alternates optionally between -0 and -e (schwa).

3. Weissenborn (1990) assumes that early subjectless sentences with ‘infinitives’ have a VP status. He assumes that the null subject in these cases is structurally realised as PRO. The IP status of declaratives is suggested for constructions which include ‘finite’ forms. The problem with such assumptions, however, is that the presence vs absence of an IP projection is associated with a ‘finite’ specification, contrary to the standard assumptions about adult language where the presence of inflectional heads is uniformly required. Assuming that feature specification on this functional category is responsible for differences in finite and infinitival constructions, the assumption that alternative representations are required in early grammars is problematic, particularly within a Continuity framework.

4. In fact, the imperative forms are identical to the subjunctive which is clearly shown with irregular verbs:

(i) Je sache SUBJ./ Je sais IND. / Saches IMP.

However, there is overlap in the indicative, subjunctive and imperative forms of the first conjugation. As far as the early data are concerned, the generalisation that indicative and imperative forms are identical holds given, first, that subjunctive forms are not attested at this stage (Clark (1985)), and, secondly, that the verbs used belong to the first conjugation.

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5. Another motivation for the movement of the subject from (SpecVP) to the structural subject position (Spec,AGR-S) concerns Predication. In order for the VP predicate to be licensed it has to be coindexed with a c-commanding subject (cf. Rothstein (1983), Chomsky (1986a)). The position in question is identified as the (Spec,AGR-S).

Notice, however, that in terms of the VP structure assumed for Prefunctional grammars, subjects are adjoined to VP, thus the Predication requirement is observed. The relevant condition is a UG requirement, hence predicted to be available throughout the process of acquisition.

6. The assumption that Case is absent in Prefunctional grammars raises certain problems as regards the Visibility Hypothesis (cf. Aoun (1985), Chomsky (1986a)). According to this, an argument is visible for theta-marking only if it is assigned Case. In this way, the Case Filter is subsumed under Visibility. However, there are cases where the Case-requirement for theta-marking appears to be problematic. In the case of PRO subjects, for example, the empty category is assigned a theta-role but may not be assigned Case, as it occurs in an ungoverned position. On the other hand, expletives occur in non-theta-marked positions yet are Case-marked. Thus, for the purposes of the present discussion, I will maintain that Case requirements are subsumed under the Case-Filter.

7. Case endings on nouns vary according to gender and Case-declension. Case distinctions for Determiners in the neuter gender are basically binary in that Nominative and Accusative are marked for the same ending:

   (i) to-nom pedhi (=the child) ta-nom pedhia
tu-gen pedhiu ton-gen pedhion
to-acc pedhi ta-acc pedhia

Case on determiners for masculine and feminine gender is explicitly marked for all Cases in both singular and plural forms:

   (ii) o-nom fititis (=the student) i-nom fititria
tu-gen fititi tis-gen fititrias
ton-acc fititi tin-acc fititria
i-nom fitites i-nom fititries
ton-gen fititon ton-gen fititrion
tus-acc fitites tis-acc fititries

Case is morphologically marked on adjectives and pronouns as well as (object) clitics which, in the third person, are identical to determiners:

   (ii) to/ton/tin idha
it/him/her saw-1s

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8. In Huang (1984) the distinction between discourse- and sentence-oriented languages is formulated in terms of parameterisation. In the context of the acquisition theory presented here this assumption is incompatible with the claim that parameterisation is absent at the Prefunctional stage.

Recall, however, that one of the basic assumptions in this theory is that the representation of child grammars is a subset of the possibilities provided by UG. Thus, the presence of PRO in subjectless constructions is assumed to be available in both child and adult language, the crucial difference being that PRO constitutes the only choice in Prefunctional grammars while this is not the case in adult language. This implies that the relevant choice is available irrespective of the presence of a functional structure. A more detailed discussion of the issue of parameterisation and the distinction between discourse- and sentence-oriented languages along these lines is included in the following section. A final decision on this matter, however, requires detailed investigation of the syntactic properties of discourse-oriented languages which is beyond the scope of this thesis.

9. Huang's (1984) analysis involves a topic-chain where the topic in initial position (possibly (SpecCP)) binds a variable in the clause. A zero topic is coreferential with an element in the discourse/context. The PRO analysis suggested here is not meant to apply necessarily to adult discourse-oriented languages, although this possibility is not excluded. On the other hand, the assumption that the empty category in Prefunctional grammars is a variable is excluded on the ground that variables have to be assigned Case. Given the absence of Case-assignment at this stage (due to the lack of DP arguments), the empty category cannot be subsumed under the definition of a variable.

10. I do not take the interaction between syntax and pragmatics to be unconstrained. As will be shown later in the discussion, pragmatic factors are allowed to intervene provided that the representation does not violate syntactic requirements.

11. Similar situations arise in adult discourse-oriented languages, like Chinese, where the intended referent of the null object in an answer is provided in the preceding question (Huang (1984)):

(i) Speaker A: Shei kanjian-le Zhangsan?
   who see-LE Zhangsan
   "Who saw Zhangsan?"

   Speaker B: Zhangsan shuo Lisi kanjian-le e.
   Zhangsan say Lisi saw-LE
   "Zhangsan said Lisi saw him."

Huang argues that in such examples the antecedent of the empty category is the occurrence of 'Zhangsan' in speaker A's question. The availability of discourse rather than sentential antecedents is independently supported by the well-formedness of constructions where subject anaphors are discoursally bound.
Thus, the Korean counterpart of the following English example is well-formed (Huang, op.cit):

(ii) Speaker A: Did John send the man?
    Speaker B: *No, himself came.

12. In this respect, it could be argued that PRO is the choice in adult discourse-oriented languages if the Agreement heads (AGR-S and AGR-O) are negatively specified. If this is the case, then in the Spec-head agreement relation where PRO occupies the Specifier position, the compatibility of agreement features as postulated in Chomsky and Lasnik (1992) would be available.

13. On the assumption that Case-checking is obligatory for all arguments (including PRO) in adult grammars it follows that, in the absence of an AGR projection, this mechanism is not available. If null Case presupposes compatibility with a negatively specified AGR head, the assumption that PRO, in Prefunctional grammars, bears null Case would be excluded because of the absence of the relevant projection. If this is correct, the difference between PRO and overt NP's as far as Case considerations are concerned would be accounted for in two distinct ways. Overt arguments fail to be assigned Case due to their NP status, while PRO fails to get null Case due to the absence of an AGR head, responsible for the Case-checking mechanism.

14. Assuming that the nongovernment requirement for PRO is not necessary it follows trivially that the availability of PRO in subject position, in child grammar, does not presuppose a configuration in which it is ungoverned.
CHAPTER FOUR

WORD-ORDER

4.1. Introduction

The issue of word-order in early child speech has been discussed in a number of studies on language acquisition. One general observation is that word-order patterns attested in early language can differ from those available in the corresponding adult language. For example, in languages which have a relatively free word-order, like Korean, language acquisition data show a preference for one of the available patterns (cf. Park (1969)). On the other hand, early child data from languages with a rigid word-order appear to deviate from it by instantiating alternative possibilities excluded in the adult grammar (cf. Lightbown (1977), Pierce (1989) for French, Bloom (1970), Braine (1976), Bowerman (1990) for English, Felix (1984), Clahsen (1991b), Mills (1985), Miller (1976) for German). What seems to have been the decisive factor in determining generalisations about the attested patterns is frequency of occurrence. In this respect, the predominant word-order in a given corpus of data has been argued to instantiate a grammatical choice, while deviations are attributed either to unsuccessful imitations of the input data (Guillaume (1927) with respect to dislocated subjects in French), to parameters not yet being set (Pierce (1989) with respect to subject-raising, Weissenborn (1990) with respect to lack of object/adjunct topicalisation) or to performance errors.

In the context of the theory presented here, word-order facts are particularly interesting given the general assumption that fixed argument positions depend on the presence of functional projections in clause structure. Prefunctional grammars are thus predicted to allow for word-order possibilities not necessarily available in the corresponding target grammars.

In what follows, I will discuss the position of subjects and objects in early
data from English, French, German, Irish, Spanish and Greek in the light of the predictions made by the theory suggested. My aim is to show that the attested word-order patterns can be accounted for in terms of a structural representation which lacks functional projections and, therefore, parameterisation.

4.2. Subjects and objects in early grammars

4.2.1. Subjects

According to the syntactic framework adopted here, the structural subject position in adult language is assumed to be the Specifier position of AGR-S which is responsible, among other things, for Nominative Case assignment. This process is understood to take place under the Spec-head agreement relation with the appropriate functional head, namely AGR-S. The position of the AGR-S projection with respect to other functional heads, e.g. TNSP, is assumed to account for crosslinguistic variation in word-order patterns. In other words, AGR-S provides the subject with a fixed position, thus restricting the possibilities of 'unmarked' orders to one (see Ch.1)

There are additional constraints that appear in the form of obligatory movement to a functional head in adult grammars. These movement processes give rise to alternative word-order patterns which involve the order of the overt subject with respect to the verbal head and its internal arguments. V-raising to an inflectional head as instantiated in French (cf. Pollock (1990), Chomsky (1991)) or German (cf. Koopman (1983), Haegeman (1991)) is a case in point. The derivation involved is assumed to be triggered by the presence of finite features on the functional head and by properties associated with the nature of the Agreement category as specified in a given language.

In this respect, the derivations involved are expressed in terms of parameterisation involving functional heads. Similar considerations hold for the derivation of the Verb-second phenomenon in languages like German or Dutch.
In particular, the movement process involved has been argued to be triggered by properties attributed to C, while the distinction between genuine V2 languages and residual V2 ones is attributed to different feature specifications on the C head. This generalisation is also captured in terms of parameterisation (cf. Rizzi (1990), Tomaselli (1989)). What is crucial for the purposes of current argumentation, is that the above processes of derivation affect the position in which subjects surface giving rise to alternative word-order combinations.

Within the theory suggested for Prefunctional grammars, the absence of functional categories has direct consequences for variation in the occurrence of subjects. In particular, neither V-raising nor subject raising are available. It thus follows that, in the absence of a canonical subject position, subjects remain inside VP given the clause structure assumed for the relevant stage (irrelevant details omitted):

(1)

Recall that the structural representation of the subject position illustrated in (1) is assumed to be regulated by UG requirements, namely Predication, and the Extended Projection Principle (see Ch.2). In this position, subjects are assigned the external theta-role by the verb. Moreover, subjects can be base-generated either to the left or to the right of VP on the assumption that directionality restrictions are not associated with substantive categories, such as V's. In addition, given (1), it follows trivially that substitution movement (either to an A or A'position) is excluded. Thus, the surface position of subjects is argued to be a base-generated one.
Bearing the above in mind, let us consider the alternative possibilities for the order of subjects in relation to the verb (+/-complement). As shown by (1), both subject-initial and subject-final sentences are well-formed, while sentences with the subject in medial position are excluded. In other words, SV(O) and V(OS) are possible patterns while VSO and OSV sentences are, in principle, unavailable. The lack of the VSO order will be discussed in relation to the Irish data (a strict VSO language). Note crucially that the non-availability of the VSO order is closely related to the absence of V-raising to a functional head, itself due to the absence of an appropriate landing-site.

Before I move on to the discussion of the data, there is a general point that I would like to stress with respect to the notion of possible vs impossible word-order patterns in Prefunctional grammar. Given the absence of parameterisation, predictions about the availability of Subject, Verb and Object combinations are assumed to apply in a uniform way to the early grammar of any language. In this respect, the predicted word-order patterns are considered to be 'possible' in terms of UG. However, the question whether all possible combinations are attested in a given corpus of data is not equally straightforward. Clahsen's (1991b) account of word-order possibilities in early German predicts the availability of a number of combinations, some of which are attested on a very limited basis, if at all. In particular, postverbal subjects are, according to the clause structure he assumes, possible. However, the predominant pattern in the data he discusses involves preverbal subjects, while objects occur either in pre- or postverbal position. He attributes these facts to the discriminatory function of the position of arguments with respect to the verb:

"Thus, the children make very different use of the grammatically possible word order patterns. There are obviously surface structure restrictions in phase II, due to the discriminatory function of word order among other things, which have the effect that some of the grammatically possible word order patterns are used dominantly whereas others occur only seldom or even not at all" (Clahsen, 1991b:58).

The productivity of a certain pattern is also a function of its availability
and/or its predominant use in the input data as well as of individual variation. For example, if a given pattern is possible in Prefunctional grammars but excluded in the corresponding adult language, it is more likely that its productivity at the early stage will be considerably lower than a pattern which is also allowed in the target grammar. In other words, the traditional claim that children pay attention to word-order patterns in the input data (cf. Slobin (1985)) is true as far as performance accounts are concerned.

An interesting situation arises in the case where the target grammar allows for a variety of word-order combinations, only some of which are also possible in early grammars. Although variation in word-order patterns is expected to be more frequent than in the case where adult speech has a rigid word-order, individual variation is expected to affect productivity in terms of a statistical preference for one of the available patterns. This situation will be shown to be instantiated in the case of early Greek data.

4.2.1.1. French and English

Both pre- and postverbal subjects have been attested in data from early French and English, albeit with a certain degree of variation in frequency of occurrence. In particular, French data with postverbal subjects apparently outnumber the corresponding English ones. This has been argued to reflect a grammatical choice expressed by the distinct parametric values assumed for each language (cf. Pierce (1989)). The frequent use of right-dislocated subjects in adult French has also been argued to affect the productivity of sentences with postverbal subjects in early speech (Guillaume (1927), Lightbown (1977)).

Note that, with respect to early French data, the use of postverbal subjects occurs with both finite and non-finite forms.
(2) VS sentences with ‘finite’ verbs: (Pierce, 1989)
   a. lit maman
      reads mummy
   b. est chaud camion
      is hot truck
   c. fait du bruit la voiture
      makes noise the car
   d. travaille papa
      works daddy
   e. bois peu moi
      drink little me
   f. pleure clown
      cries clown

(3) VS sentences with non-‘finite’ verbs:
   a. tomber papa
      fall daddy
   b. assis la poupee
      seated the doll
   c. dormir bebe
      sleep baby
   d. ranger moi
      arrange me
   e. casse celui-la
      broken that one
   f. promener bebe
      walk baby

Preverbal subjects are also available in the same contexts:

(4) SV sentences with ‘finite’ verbs:
   a. garcon pleure
      boy cries
   b. bebe veut papa
      baby wants daddy
   c. papa travaille
      daddy works
   d. le disque est ferme
      the record is closed
   e. Tally voit l’auto
      Tally sees the car
   f. poupee doit faire dodo
      doll must go to sleep
As shown by the above data, pre- and postverbal subjects are available in early French regardless of the inflectional endings on the verbal head. Note incidentally that, in the data of the two monolingual children studied in Lightbown (1977), the occurrence of subjects in pre- and post-verbal position is not equally frequent.

In particular, Daniel used the SV order with intransitive verbs over 75% of the time while in the case of transitive verbs, the SVO order was the most frequent one (over 90%). The other child, Nathalie, used preverbal subjects with intransitive verbs much less frequently (30%), while she produced the SVO order about 75% of the time with transitive verbs (Clark (1985)). The crucial point about the above observations is the availability of both subject positions in early French. The difference in frequency of occurrence (quite considerable, at least with respect to intransitive verbs), indicates the extent to which individual preferences regulate the predominant use of one of the grammatical possibilities.

As far as the availability of both subject positions is concerned, note that the assumption that a structural subject position outside VP is available at this stage is excluded. If this position, namely (Spec,IP) or (Spec,AGRP), were indeed present in early clause structure, the occurrence of postverbal subjects would remain unaccounted for. In addition, the assumption that in the latter case, the construction involved is an instance of a right-dislocated subject appears
problematic, given that the number of postverbal subjects decreases rapidly when properties of inflection are acquired (cf. Pierce (1989), Clark (1985)). Moreover, the intonation contour of utterances with postverbal subjects is not similar to the one associated with right-dislocation constructions in adult grammars (cf. Lightbown (1977)). In other words, there is no pause between the verb and the subject following it, indicating that the difference in subject position does not entail a difference in structural representation (presence vs absence of dislocation).

Recall, however, that an alternative possibility for deriving the surface order of subjects is provided in the case of V-raising to an inflectional head. This is the possibility argued for in Pierce (1989), according to which V-raising to a finite I gives rise to postverbal subjects in finite constructions (see Ch.1). In non-finite contexts, however, subjects can occupy either pre- or postverbal position as indicated by the data. This, according to Pierce, is the result of a parametric choice formulated in terms of the VP-internal subject parameter. This parameter consists of three values which basically regulate the occurrence of the subject in (Spec,VP) with respect to V'. One option is for the subject to occur in a fixed position to the right of V'. According to the second value, the (Spec,VP) position is to the left of V', while the third value assumes that the Spec position is not fixed. Pierce assumes that the second and third values are the ones responsible for subject placement in French, thereby accounting for early French data. In this respect, both SV and VS sequences involve base-generated subjects, while it is also possible for postverbal subjects to be the result of V-raising to a finite I.

The conclusion that both pre and postverbal subjects can be base-generated rather than derived is consistent with the claims of the theory presented here. Note, however, that in the present framework, this is not the result of a parametric choice. On the contrary, it follows directly from the general claims of the theory which assumes that parameterisation is absent in early grammars. In this respect, the free ordering of the subject inside VP stems from the theoretical assumption that directionality restrictions are exclusively
associated with functional categories. Accordingly, no additional stipulations need to be made to account for the occurrence of preverbal subjects with finite verbal forms.

Pierce argues that the number of preverbal subjects in finite contexts is relatively small (9% of all utterances with lexical subjects) and she considers that these cases involve subject-topicalisation rather than subject-raising to (Spec,IP). Notice, however, that the relatively small number of preverbal subjects is not associated exclusively with finite verbal forms. The number of preverbal subjects in non-finite contexts at this stage is also limited (roughly 12% of all utterances with lexical subjects). It thus seems that the restricted occurrence of preverbal subjects has nothing to do with the limited process of topicalisation, as preverbal subjects are much less frequent than postverbal ones regardless of the verbal form, i.e. +/-finite.

Turning now to early English data from the same stage of development, sentences with postverbal subjects have also been attested (Bowerman’s corpus):

(6)  a. Cough Christy (Christy, 1;7,4)
    b. ride Christy
    c. write Sissy/write Christy/write Christy
    d. open mommy (Christy, 1;7,2)
    e. drink mommy
    f. awa walk daddy (Christy, 1;8,4)
    g. come mama
    h. open mommy
    i. see Didi
    j. open Christy (Christy, 1;9,1)
    k. going daddy? (where is daddy going?)
    l. come daddy/come daddy/come baby
    m. cut boy (Christy, 1;9,2)
    n. come mommy/come mommy
    o. ride butterfly (Christy, 1;11,1)
    p. catch Didi/catch daddy (Christy, 1;11,2)
According to Bowerman's (1990) analysis of the data, during the period from 1;8 to 1;10, 60% of the strings with prototypical agent-patient verbs were misordered. Of the non-prototypical verbs, 21% of the strings were misordered. "Among single-argument strings, there were also many more ordering errors (both OV and VS) with prototypical agent-patient verbs than with 'other' verbs" (Bowerman, 1990:1276).

In the theory presented here, the availability of postverbal subjects (along with preverbal ones) in early English conforms to the pattern observed in early French discussed above. In particular, the VP structure allows for the base-generation of subjects on either side of the VP predicate. In the absence of a functional projection higher in the clause structure, subjects fail to raise to the canonical subject position ((Spec,IP)/(Spec,AGRP)), so the observed variability is correctly predicted.
A final point I would like to stress concerns the observation that postverbal subjects in early English occur less frequently than in early French. Recall that several factors have been argued to contribute to the productivity and frequency of certain word-order combinations. Putting aside individual variation, the role of the model, i.e. variability in adult word-order, has been argued to affect the range of possibilities attested in child speech. Right dislocated subjects are available in both French and English, though much more frequently in spoken French:

(8) Il est parti, Paul.
(9) He is gone, John.

The possibility of postverbal subjects in child speech being produced on the model of the linear order of (8) for example, does not imply that the structural representation involved in the two cases is the same. In fact, there are obvious differences in the two cases. For example, the absence of a subject clitic as well as a pause between the verb and the subject in child speech contrast with their obligatory presence in adult speech. These are superficial differences which, however, reflect differences in the underlying representation.

To the extent that word-order combinations in adult grammar affect the patterns attested in child speech, they can be understood as providing a pattern that may (or may not) be reproduced by early syntactic structure. With respect to postverbal subjects, it is clear that the VP structure in Prefunctional grammars, allows their representation in a base-generated thematic position. Although this possibility is, in principle, available crosslinguistically, due to the absence of parameterisation, it appears to be much more frequent in cases where the input exhibits superficially similar word-order. This is the sense in which the role of the input can be understood to affect frequency of occurrence. Note, however, that this is important only insofar as tentative accounts of performance are concerned. The crucial point, in the present framework, is that postverbal subjects are predicted to occur regardless of the choice of the target grammar. This prediction seems to be confirmed by the early French and English data.
discussed above.

4.2.1.2. Greek and Spanish

Both adult Greek and Spanish allow the possibility of subjects occurring in initial, medial and final position. In other words, SVO, VSO and VOS orders are all possible in adult language. As far as the basic or 'unmarked' order of the subject in each language is concerned, Spanish is standardly argued to be subject-initial while Greek has been argued to have a verb-initial order as the basic one (cf. Philippaki-Warburton (1985), Tsimpli (1990), Agouraki (in prep.), but see Horrocks (1983) for an alternative view). The crucial point as regards the current discussion, however, is that variability in the subject position is possible in adult language.

Turning to early child data, both pre- and postverbal subjects seem to be available, although a preference for one over the other position is also clear. In particular, the Greek data show a statistical preference for postverbal subjects, although preverbal ones are also attested:

(10) a. sasi Atsia  
    will-come Alexia
b. kasizi kato Atsia  
    sits down Alexia
c. ali seli kukitsa Atsia  
    another wants doll-dim Alexia
d. e ponai kilitsa  
    not hurts tummy
e. en ehi pola pejakia ti tsulithra  
    not has many children (on)-the slide
f. ehi emo Elli  
    has blood Elli
g. lepi neo Elli  
    looks water Elli
h. in dho i Vangelia  
    is here the Vangelia
i. seli potokali Elli  
    wants orange Elli
(11)  a. teno penai
    train passes
b. pota ki’
    door closes
c. ola pejata katane luludhata
    all children hold-3p flowers
d. i Elli epese
    the Elli fell
e. anthi vali
    Ianthi puts
f. to maghulo su kei
    the cheek your is-hot

In the corpus of data from the two children studied, preverbal subjects occur in roughly 25% of utterances including lexical subjects. A clear preference for postverbal subjects is thus shown, although subjects in preverbal position are also possible. What is crucial with respect to the occurrence of postverbal subjects is that, unlike adult Greek, no occurrences of VSO (or OSV) order are attested in data from the Prefunctional stage. The absence of such word-order combinations provides further evidence for the theoretical claims made regarding clause structure at the relevant stage.

Note that the derivation of the VSO order involves Verb-raising to Agreement and Tense as well as subject-raising to the structural subject position, namely (Spec,AGRP) (cf. Tsimlpi (1990)). Even if we assume, along with various researchers (e.g. Clahsen & Penke (1991), Pierce (1989) among others), that subject-raising is, for some reason, not as yet available, the VSO order could, in principle, be derived through verb-raising to an inflectional head outside VP. In addition, the availability of both pre- and postverbal subjects could be reinterpreted in terms of the VP-internal parameter with (Spec,VP) being unordered with respect to V’ (see above). In any case, the derivation of the VSO order should be possible where the subject is base-generated to the left of V’ and verb-raising has taken place. The absence of the VSO order is thus shown to cast further doubt on the assumption that functional heads and the relevant verb-movement process are available at the stage under discussion.
An additional point that should be emphasised in this respect, is that the VSO order is one of the most frequent in the input. Given the variability in word-order patterns attested in early-data as well as the (abundant) positive evidence for the availability of VSO in adult language, it is highly unlikely that either the input or performance factors can be invoked to account for the absence of this word-order. If the latter were true, we should expect the VSO order to be attested even if its occurrence were subject to some preference weighting, as was shown to be the case with the occurrence of pre- as opposed to postverbal subjects. We can, therefore, conclude that the striking absence of this order has to do with constraints on its representation rather than anything else.

This is consistent with the predictions of the current theory, which excludes any movement processes in the VP structure of the early stage. Recall, in this respect, that early grammars are assumed to allow or disallow word-order patterns regardless of their availability in adult speech. The former case was argued above to be instantiated by the variability in subject position in languages like French and English. The latter is shown to exist in the case of early Greek, where the representation of the VSO order is excluded due to constraints associated with the early VP structure.

Turning now to the occurrence of subjects in early Spanish data, it seems that, unlike Greek, there is a preference for preverbal subjects, although postverbal subjects are also attested (Pina (1984)):

(12) SV sentences with 'finite' forms
    a. vaso quema
       jar burns
    b. nena come
       child eats
    c. senor habla
       man talks
    d. autobus anda/viene
       bus goes/comes
Pina (1984) points out that the order of the verb and the subject is not fixed at this stage although even more variability in word-order combinations is attested at the following stage, namely 25-30 months. What is crucial for the current discussion is that the first occurrences of VSO order appear only during this second stage. Thus, as in Greek, the VSO order is missing at the Prefunctional stage despite the fact that it is available in the input. Clark (1985) likewise points out the preference for the SVO order in early stages, while other orders appear less frequently.

All in all, the availability of both pre- and postverbal subjects in early Greek and Spanish contrasts sharply with the absence of the VSO order which, in both languages, is possible and available in the input. If we assumed that verb-raising to a functional head took place at this stage, the lack of the VSO
order would remain unaccounted for. In terms of the theoretical framework presented here, however, these facts receive a straightforward explanation. In particular, in the absence of inflectional projections outside VP, subjects remain in their base-generated position, which, due to the lack of directionality restrictions associated with substantive categories is not fixed. If functional projections are not a part of early clause structure, the absence of verb-raising follows trivially.

4.2.1.3. Irish

As discussed in the previous section, theoretical assumptions about early grammars and, in particular, the structure of VP give rise to predictions about the position of subjects crosslinguistically. One of the relevant implications is the non-availability of the VSO order, which was shown to be empirically supported by the early Greek and Spanish data. In this respect, strict VSO languages like Irish constitute a challenge for the theory suggested here. Given that, in these cases, the input to the language learner consistently exhibits the VSO order, word-order in early child data is predicted to deviate from the target choice due to constraints on the derivation involved. Following McCloskey (1983) and Guilfoyle (1990), I will assume that the VSO order in Irish is derived by verb-raising to INFL or COMP (depending on the analysis). Thus, as in early Greek and Spanish, the relevant derivation is predicted not to be available.

According to McKenna & Wall (1986) and Hickey (1987), early Irish data exhibit a certain variability in word-order not allowed in the adult language. In particular, subject-initial sentences are attested along with sentences where the subject occupies a final position. Notice, however, that in McKenna & Wall’s discussion of data from the relevant stage, there are no examples of sentences with the VSO order. The authors suggest that "It is possible that in Irish the child adduces an SVO clause rule, and later a VSO rule for non-progressive cases, suggesting a more circuitous and protracted route to the eventual adult
word order" (McKenna & Wall 1986:93). In Hickey's longitudinal study, it is explicitly pointed out that "Stage III is significantly represented for the first time by VSO" (Hickey, 1987:126). Stage III, according to Hickey's classification, extends from the age of 2;0 to 2;6 (Hickey, 1987:90).

As discussed in Ch.2, section 2.1.2.4., verbs in early Irish include progressive (Vn), perfective (Vadj) and simple forms. The word-order combinations attested include SVn, SVadj, and VS utterances:

(16) a. Aoife ithe bruitin (McKenna & Wall (1986))
    Aoife eat-Vn potatoes
b. Dadai amuigh baint pratai
daddy out get-Vn potatoes
c. Aoife shiuil abhaile
    Aoife gone home
d. thit teddy
e. babai leabhar stroichte anois
    baby book torn now
f. beebee briste anois
car broken now

Hickey (op.cit.) points out that the choice between subject-initial and verb-initial utterances is not random. In particular, subjects appear in initial position when the verbal form is Vn or Vadj whereas in cases where synthetic forms are used, utterances are verb-initial. She attributes the SVnO utterances to the omission of the copula (ta), which appears in initial position in the equivalent adult sentences. Note, however, that the absence of the copula/auxiliary at this stage is not restricted to Irish, but has been observed in early acquisition data from a number of languages, like French, Spanish and English.

What is characteristic of Irish, however, is that the position of the subject differs according to whether the verbal form used is Vn/Vadj or V. Note, moreover, that morphologically, all three forms are distinctly marked. In order to explain the correlation between subject position and verbal form used, I suggest that it is these morphological (or phonological) differences which should
be primarily considered.

Recall that the use of inflectional morphemes in early child speech involves aspectual rather than tense (and agreement) distinctions (see Ch.2). As previously discussed, in some languages Tense and Aspect appear in a fused form while in others Aspectual morphology is distinct from Tense (e.g. Greek and Semitic languages). In the first group of languages, however, there are verbal forms which are clearly Aspectual in the sense that finiteness (as evidenced by Tense and/or Agreement morphology) is not marked, (English V-ing and V-en forms are cases in point), though aspectual information may be encoded by finite as well as by infinitival forms.

Going back to the Irish data, the use of Aspectual markers is also evident in the verbal forms used, namely the progressive (Vn) and the perfective (Vadj). Note that, according to both Hickey’s and McKenna & Wall’s data, the number of simple verbs used at the Prefunctional stage is quite restricted. In particular, most of the VS utterances include the copula (as a main verb) or the verb ‘to fall’. On the assumption that Aspect is present in early grammars, it follows that verbal forms which are basically aspectual (Vn and Vadj) will be readily integrated into the grammar. Given moreover that their position with respect to the subject in the input data is fixed, no errors of placement are expected to occur in production. The placement of fully inflected verbs, on the other hand, is also fixed in adult language, in initial position. It could be argued that early grammars, at this stage, classify verbal forms according to the aspectual information they convey; synthetic forms have a neutral aspectual viewpoint while Vn’s and Vadj’s have imperfective/progressive and perfective viewpoint (see Ch.2). The relevant distinction can be made if Aspect but not finiteness is part of Prefunctional grammars. Note, however, that if this is correct, then the correlation between verb and subject placement can be understood in terms of morphophonological distinctions encoding Aspectual information. Given the fixed word-order in the input data, this correlation can be easily incorporated into the early structure by means of subject-initial and subject-final placement.
Although the above suggestion is tentative, its validity does not bear on the crucial point directly relevant to the theoretical claims made here, namely the absence of the VSO order in early Irish. If verb- vs subject-initial utterances involved the presence of an inflectional projection outside VP, the derivation of the VSO order would be a possible one. On the other hand, in the context of the VP structure suggested, the facts of early Irish are subsumed under a general account of Prefunctional grammars. In particular, the variability in subject position, the absence of the VSO order and the absence of the copula/auxiliary are crosslinguistic characteristics of this stage of development. In this respect, the word-order possibilities of early Irish confirm the theoretical assumptions concerning the absence of functional projections in early grammars.

In addition, the absence of the VSO order in early Irish is particularly suggestive as far as consideration of the role of the input is concerned. Irish belongs to the set of languages with a rigid word-order, but differs from other members of this set in that the word-order in question is, in principle, not available in Prefunctional grammars. Thus, the case of Irish illustrates the claim made above that the role of the input, however crucial, cannot override restrictions regulated by the nature of early grammars.

4.2.2. Objects

In the syntactic framework adopted here, objects, like subjects, are assumed to move to a canonical object position, namely (Spec,AGR-O) (cf. Chomsky (1992), Ouhalla (1991b)). The parallel treatment of subjects and objects in adult grammars, in the sense outlined in Ch.1, gives rise to similar considerations as far as the status of these arguments in Prefunctional grammars is concerned. More precisely, the absence of functional projections implies that objects also must remain in their base-generated position, where they are
assigned the internal theta-role by the verb. In this respect, surface word-order is again assumed to reflect base-generated positions, as illustrated in the following abstract VP structure (irrelevant details omitted):

(17)

\[
\begin{array}{c}
\text{VP} \\
\text{NP} \quad \text{VP} \\
\text{subject} \\
\text{V'} \\
\text{NP} \quad \text{V} \quad \text{NP} \\
\text{object} \quad \text{object}
\end{array}
\]

Recall that the (base-generated) position of objects is assumed not to be fixed with respect to the verbal head. In adult grammars, the object appears in a fixed position as a result of its movement to the Spec of AGR-O. On the other hand, early clause structure renders this derivation impossible because of the absence of the relevant landing-site. Thus, objects at this stage are predicted to exhibit a certain variability compared to their adult counterparts. In other words, both OV and VO orders are expected to be crosslinguistically available, although the role of the input as well as individual variation may affect productivity as argued above with respect to possible variability in the position of subjects.

4.2.2.1. Greek and Spanish

Variability in object position is attested in both Greek and Spanish data from this stage. As far as the Greek data are concerned, the availability of pre- and postverbal objects is illustrated by the following representative examples:
(18) a. pojaja seli Atsia (OVS)
orange-juice wants Alexia
b. nelo pini (OV)
water drinks
c. papu vosisì Atsia (OVS)
grandad helps Alexia
d. ena zedatsì seli Atsia (OVS)
one tree-dim wants Alexia
e. kutalaki thelo (OV)
spoon-dim want-1s
f. ti mama mu ezia (OV) (Katis, 1984)
the mummy my spank-1s
g. to kizi zesi o baba mu (OVS)
the key tied-up the dad my

(19) a. a zume luludhia (VO)
prt. see-1p flowers
b. katai moo (VO)
holds baby
c. foa zaketa i Elli (VOS)
wears jacket the Elli
d. vikame t’allo (VO)
found-1p the other
e. selis gala pali (VO)
want-2s milk again
f. anapsume to fos (VO)
switch-on-1p the light
g. kanome to Spot
do-1p the Spot

Note that in adult Greek, preposed objects are allowed in Focus and Clitic/Left-Dislocation (CLLD) constructions (cf. Agouraki (1990), Tsimpli (1990), Theophanopoulou-Kontou (1986/7)). In the former case, the preposed object bears heavy (focal) stress, while CLLD constructions are characterised by the presence of an object-clitic attached to the inflected verb and an intonational break between the dislocated element and the rest of the clause.

Going back to (18), note that neither are object-clitics present nor does the intonational contour indicate that the construction consistently involves Dislocation/Topicalisation or Focussing. On the other hand, it is only natural to assume that, on the basis of the variability in object position exhibited in the input data, the child can generalise to superficially similar patterns in her
production. This is consistent with the idea that the input affects productivity, provided that the pattern in question is a possible one in terms of the VP structure of the early stage.

It is worth mentioning that the difference in frequency of occurrence of OV orders in the corpus of each child is remarkable. In particular, one of the two children studied, produces the OV(S) order in over 80% of cases, while the other seems to favour the (S)VO(S) pattern consistently. This fact illustrates, once again, to what extent individual variation may affect the attested frequencies in the production of a particular word-order. On the other hand, this observation casts further doubt on the assumption that percentages can be taken to reflect underlying grammatical knowledge. In the case of MG, both the input data and the early structure allow for pre- and postverbal objects. The observed differences in production, however, show that, additional factors, like individual differences, may intervene, thus further obscuring the picture of grammatical development.

Turning now to Spanish data from the same stage, Pina (1984) points out that the VO and OV orders are both attested. She attributes this variability to the non-rigidity of ordering between the two elements in adult grammar (though the possibility of preposed objects is associated with topicalisation or Focussing, as in Greek). In this respect, Spanish resembles Greek, in that the child is presented with positive evidence that includes both combinations. Given that their representation in early grammars is also available, both OV and VO orders are frequently attested:

(20) a. agua beber (OV) (Pina, 1984)  
water drink
b. sillon abre (OV)  
arm-chair open
c. agua tira (OV)  
water draw
d. agua coger (OV)  
water get
(21)  a. beber agua (VO)
    drink water
b. abre camelos (VO)
    open sweets
c. mete dedo (VO)
    put finger
d. cogelo papel
    get-the paper

A final remark I would like to make with respect to the availability of OV and VO orders in early Greek and Spanish, concerns the basic word-order assumed for the respective target grammars. In particular, both Spanish and Greek have been assumed to be verb-initial languages as far as the order of the verb and the complement is concerned. Verb-preposing, as mentioned above, involves a derivation, standardly referred to as Topicalisation/Dislocation or Focussing. The distinctive properties of these constructions, however, seem to be missing in early data which involve preposed objects. In particular, the intonation pattern involved in both Greek and Spanish OV data, is not distinct from that in VO data. Thus, the assumption that topicalisation is involved in these cases seems to be unjustified. Dislocation and Focussing, on the other hand, presuppose a functional structure, in that the presence of DP and CP/FP respectively is assumed. Most researchers, however, agree that these categories are missing during that early stage. All in all, it appears that, in order to account for the OV and VO data, base-generation of the complement in either pre- or postverbal position is the only alternative.

On the other hand, according to standard assumptions about the ordering of the verb and the complement in early grammars, the idea is that it is regulated by the Head-parameter right from the start. Thus, the predominant use of VO and OV combinations in early English and German respectively has been argued to be the result of the relevant parameter being set to the target value. If this is correct, however, it leaves unresolved the facts of early Spanish and Greek. More precisely, the question why the setting of the Head-parameter fails to induce the predominant use of one order, namely VO, due to this being the target value, remains open. Note that the assumption that the input data exhibit
variability in these languages cannot be the explanation inasmuch as a grammatical choice is concerned. As shown above, the relevant representation in adult grammar is not available in early grammars. An alternative suggestion might be that the Head-parameter is fixed, at this stage, in some languages but not in others. This suggestion, however, seems to involve ad hoc stipulations about the nature of parameters and their setting at different stages of development according to language-specific properties. Thus, the two problematic issues here include the formulation of the Head-parameter (see also the discussion in Ch.1) and, subsequently, its role in early stages of development.

Within the context of the theory presented here, the order inside V' is not fixed either in child or in adult grammars. The observed variability in the verb-complement relation in early data, more obvious in languages like Greek and Spanish, follows in a straightforward way from the absence of functional projections which would provide a fixed position for the complement. The frequency of 'deviation' from the target value can be attributed to the role of the input.

4.2.2.2. Objects in early English and French

Variability in the order of the complement in relation to the verb in early English and French has been reported in some studies though it appears to be limited when compared to data from languages like Greek and Spanish. Braine (1976) discusses the verb-object combinations in early data and questions the standard assumption that children, at an early stage, have a productive verb-object construction. Data from Bloom's (1970) subjects, Kathryn and Gia, show inconsistency in the production of the VO order. In Bowerman's (1973) discussion of Kendall's data, similar observations are made. In particular, although in combinations of subject, verb and object the VO order is
predominant, the order of the verb and the object in cases where the subject is omitted, seems to be random (cf. Braine (1976)). As a possible explanation for the inconsistency observed, it has been suggested that the semantic relations expressed by the thematic roles involved in each case determine positional patterns.

Bowerman (1990) presents compelling evidence for the claim that word-order in early English is not fixed. She points out that ‘errors’ in the ordering of the verb and its complement are quite frequent, especially with prototypical verbs, i.e. verbs with agent-patient arguments: "In fact, in the two-week period of 1;11 [weeks 1&2]-two months after the onset of two-argument strings with prototypical agents and patients-the number of incorrectly ordered (OV) strings with prototypical patients was two-thirds that of correctly ordered (VO) strings" (Bowerman, 1990:1275). Misordered combinations in Bowerman’s data extend from the period of 1;8 to 1;11. Word-order after that age becomes fixed to the SVO order of the target grammar.

Some examples of incorrectly ordered verb-complement combinations are the following:

(22)  a. horsie ride (Christy, 1;6)
   b. daddy see
   c. awa man watch (Christy, 1;7)
   d. awa that fix/awa swing ride/baby see/bottle find
   e. glasses find/awa domino find (Christy, 1;8)
   f. dolly hold/swing ride no/no/ money hold/salt pour/ball find/a man touch/diaper find/awa cheese eat/this write
   g. yoghurt eat (Christy, 1;9)
   h. grass cut/ice give-me/pie open later/coca-cola drink/wow-wow fix later
   i. awa see...man see (Christy, 1;10)
   j. that hold/breakfast hold tight/milk drink/other wash/surprise make surprise/other clean off/ball cover/sand cover/daddy cut pretty soon/Didi cut pretty soon/candy throw away/that throw away

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On the basis of data such as those in (22), Bowerman (1990) suggests that linking rules which associate semantic functions with syntactic positions cannot be argued to be innate (cf. Pinker (1984), (1989)). Note, however, that whatever the role of the semantic relations involved, it is clear that the OV pattern disappears shortly before the age of 2;0. This indicates that rigid word-order reflects syntactic constraints in terms of fixed positions in the clause structure after a certain period. In the context of the theory presented here, word-order ‘errors’ at the earlier stage, show that a grammatical choice is involved. In other words, the availability of alternative word-order patterns has to be provided by syntactic properties of early clause structure. As shown in the structure in (17), the order inside $V'$ is not fixed and the lack of a canonical object position results in the attested variability in the ordering of the verb and its complement.

Turning now to early French data, deviations from the word-order of the adult language have been reported in a number of studies. Bloch (1924) cites a number of noncanonical word-orders (cited in Clark (1985)):

(23)  

a. chapeau chercher (OV)  
hat look-for  
b. maman let li (SOV)  
mummy letter read  
c. papa couper cheveux (SVO)/ cheveux couper papa (OVS)/ couper cheveux papa (VOS) (produced in this sequence)

Guillaume (1927) attributes early word-order ‘errors’ to the absence of a grammatical format onto which the expressed meanings are mapped. Lightbown (1977), on the other hand, suggests that the attested variation in Nathalie’s and Daniel’s word-order cannot be attributed to successive single-word utterances.
as the intonation contour of these sentences is not different from the ones where the word-order conforms to the standard one. Lightbown points out that there were few cases of non-standard word-order in Daniel’s speech, while word-order variation was frequent in Nathalie’s action utterances. This difference could only stem from individual variation rather than any underlying properties of the grammar at this stage.

Lightbown suggests that a possible explanation for the attested variation could be found in the alternative word-order possibilities available in the adult language. For example, object clitics as well as floating quantifiers (which are stressed elements) in French, appear in the subject-object-verb form. Note, however, that, as shown above with respect to the Greek data, the role of the input can be only partially responsible for the attested variation. In other words, it is not the case that the availability of a certain pattern in the input guarantees that it will be attested in early data as well. Individual preferences, as shown with Daniel’s and Nathalie’s speech, can override the role of the input in some cases.

What is crucial for the current discussion is that any attested word-order variation in early child speech presupposes a syntactic representation in terms of alternative base-generated positions in early clause structure. The variation in the ordering of the verb and the complement in early French and English data can be accounted for in terms of the absence of directionality restrictions of the verbal head. If the latter were available, as would be predicted on the basis of the Head-parameter, the attested variation would remain unaccounted for.

4.3. Word-order in early German

One of the syntactic processes that gives rise to derived word-order patterns is verb-raising to a functional category outside VP. Verb-movement to C in V2 languages is a case in point (cf. Koopman (1983),
Haegeman (1991)). In German root clauses, for example, where the underlying order is assumed to be SOV, verb-raising to C (and topicalisation of the subject) results in a surface SVO order. Crucial in this derivation is the notion of finiteness, in that [+finite] features in C trigger verb-movement, while infinitival forms remain in their base-generated position.

As argued in sections 2.1.2.2. and 3.2.2., inflectional morphology in early German fails to exhibit Tense and Agreement properties similar to those of the adult language. Aspectual distinctions, on the other hand, are argued to be available, albeit encoded in a restricted set of inflectional morphemes, as Aspect and Tense appear in a fused form in this language.

Nevertheless, in the recent literature on language acquisition, the crucial piece of evidence for the presence of an inflectional projection outside VP has been argued to be the correlation between finiteness and verb-movement in V2 languages (cf. Clahsen & Penke (1991), Clahsen (1991a), Weissenborn (1990) for German, and Jordens (1990), de Haan & Frijn (1991) for Dutch, among others). The idea is that early grammars exhibit verb-fronting in the case of finite verbal forms, while infinitives remain in their base-generated (i.e. final) position. This is consistent with the assumption that early clause structure consists of both substantive and functional categories and, in particular, includes Inflection as an independent head. Given that the movement process involved gives rise to an alternative word-order, it is directly relevant to the present argumentation.

In order for this correlation to be motivated, certain preliminary assumptions have to be made. First, the order of the verb with respect to its complement is assumed to be fixed as a result of the Head-parameter being set to the target value. In the case of German and Dutch, the relevant order would be OV. Secondly, the functional projection specified for finiteness is to the left of the VP projection, otherwise no verb-fronting process could be involved. The categorial status of this projection is presumably IP (or a category F specified for [+finite] features according to Clahsen & Penke (1991)) as opposed to adult
grammars where it is considered to be CP\textsuperscript{4}. Standard assumptions about the position of IP in adult grammars differ as to whether it is head-final (like VP) or head-initial (see references above). Whichever analysis is adopted, there are certain predictions that are relevant to the presence vs absence of a CP projection. More precisely, if IP is assumed to be head-final, the verb-fronting process in the case of finite verbs is argued to involve movement to C. If CP is not assumed to be available as yet, Inflection or F has to be head-initial in order to account for verb-movement to the finite position. I will now turn to some of the relevant data from early German.

Clahsen & Penke's (1991) analysis of Simone's data which involve verbs with -n endings classifies them as instantiating two distinct forms. One is an agreement marker (plural) while the other is a 'default' agreement form. The first, according to the authors, is non-existent in what is referred to here as the Prefunctional stage, while the second occurs in final position in the majority of cases at the same stage. Note that the latter form is what is usually referred to as the infinitival form of the verb, despite the fact that the same form is used for marking first and third person plural in the agreement paradigm. Assuming that plural forms are not used at this stage due to the impoverished nature or non-productive use of agreement (see Ch.3), verbal forms with the -n ending are assumed to instantiate a 'default' agreement marker.

However, the notion of 'default' used in the context of morphological specification does not equal non-finite. For example, it is a common assumption that the third person singular is the 'default' agreement marking used in impersonal constructions. 'Default', in these cases, implies underspecification rather than the negative specification for agreement features which is the case with infinitival forms. If finiteness is defined in terms of the presence of Agreement features on a functional head then both 'default' and non-default forms ought to be considered finite. Moreover, if finiteness triggers verb-movement to the functional head in question, then we should expect all forms (default or not) to be fronted, contrary to the standard claims.
Alternatively, the notion of finiteness could be construed as being related to Tense features. Tense distinctions, however, as already discussed, are not available at the relevant stage. It thus follows that the classification of the verbal forms with -n endings as being 'default' is rather unfortunate as it cannot be justified by independent linguistic (morphological) evidence. If agreement is not acquired as yet, as the authors assume, then it is more plausible to suggest that all early verbal forms are not specified for Tense and/or Agreement features at all.

Contrary to the assumption that non-finite (or -n) forms always appear in final position, there are data that question the validity of this generalisation:

(24) a. drehen brücke (Clahsen, 1988)
   turn bridge
b. setzen mann
   sit-down man
c. sitzen bein
   sit leg
d. ich machen hier
   I make here
e. nein spielen katze (Felix, 1984)
   no play cat
f. Julia schieben zug (Jordens, 1990)
   Julia push train
g. ranstecken an zug
   on-put at train
h. finden sachen (Miller, 1976)
   find things
i. sitzen puppa
   sit doll
j. festhalten wauwau
   hold dog
k. angucken männer
   look-at men
l. haben seife
   have soap
m. schlafen max
   sleep max

According to the data in (24), verbs inflected for the -n form appear in non-final position, thus giving rise to the (S)VO order. Recall, however, that this is
assumed to be a word-order derived by movement of a finite verb to a functional position outside VP (i.e. INFL or F). Given that the inflectional endings exhibited in the verbal forms in (24) are considered to be non-finite, their surface position cannot be attributed to a head-movement process. Thus, in such cases, the alleged correlation between finiteness and verb placement is disconfirmed.

Examples (24a, b, f, h, j, k, l) present an additional problem related to the Head-parameter and the assumption that it is set right from the start. More precisely, the examples in question exhibit the VO order, contrary to what would be expected if the parametric choice involved was that of the target grammar, namely OV. Given the infinitival form of the verbs involved, the VO order cannot be a derived one. On the other hand, if the verb-object ordering is base-generated as such, it can not be argued that the Head-parameter is responsible for regulating word-order, as one of the two settings would remain unaccounted for.

In the theory suggested here, the above data receive an explanation in terms of the VP structure in (17). Free ordering inside V' gives rise to two alternative positions for the complement with respect to the verbal head. Given that inflection is not syntactically available as yet, verb-initial and verb-final structures exhibiting identical morphological specification are allowed to occur in either position. These predictions appear to be confirmed by early German sentences including verbal forms with the -n ending.

Verbal forms inflected for the -t suffix are assumed to occur in 'fronted' position in the majority of cases. Notice, crucially, that the statistical results of the data exhibiting verb-final and V2 patterns (in Clahsen & Penke's study), are analysed according to the inflectional morphology involved in each case. Strictly speaking, there is no consistent V2 in those data which include finite verbal forms in that the verb is not always preceded by another element. The -t suffix in adult German is used in third person singular and second person plural,
though in child data the assumption is made that it is most likely to encode the singular marking.

According to the authors, the -t suffix does not encode subject agreement at the early stages. Rather, it is analysed as an intransitivity marker as its distribution appears to be regulated by thematic properties of the verb. I do not want to address the issue of whether -t is indeed an intransitivity marker or an agreement marker as the important point for the theory I am presenting is whether verbs with the suffix -t are fronted or not. What is particularly interesting, however, in Clahsen & Penke's claim, is that data involving verbs with the suffix -t are basically two-word utterances given that, at the relevant stage, "...the form -t is nearly always used with intransitive verbs, i.e. with one-place predicates. In 92% of its occurrences (267 tokens) in Corp. 1 to 6, -t is suffixed to an intransitive verb" (Clahsen & Penke, 1991:16). Illustrative examples are given in (25):

(25) a. Robert schläft (Miller, 1976)
    Robert sleeps
b. Baby weint
    baby cries
c. teddy schläft
    teddy sleeps
d. mone weint
    mone cries
e. oma kommt
    granny comes
f. das auch passt
    this also fits
g. Mone auch läft
    Mone also sleeps
h. flugzeug kommt
    plane comes

If the suffix -t occurs, in the vast majority of cases, with intransitive verbs, the implication is that there is basically a single argument, which appears in the subject position. Accordingly, sentences including verbs inflected with the -t ending cannot be argued to provide any evidence for the ordering of the verb and the object. In other words, if these verbal forms are indeed finite and verb-
No, this was to an empty abstract.
Of also p. 190
fronting has taken place, it is only the order of the verb with respect to the subject that should, in principle, be affected. As shown by the examples in (25), verbs with the -t suffix follow the subject. If verb-fronting has taken place, the SV order can be derived if the subject is also moved to the Spec position of the inflectional projection.

Note, however, that examples including verbs with the -t ending can appear in initial position leaving the subject behind:

(26) a. fliegt schmetterling (Miller, 1976) flies butterfly
    b. fliegt seife flies soap
    c. läft Mone sleeps Mone
    d. läft männche sleeps man-dim
    e. weint hasi cries rabbit
    f. Robert weint / weint Robert
       Robert cries / cries Robert

If we assume that verb-fronting has taken place in these sentences, then movement of the subject to a preverbal position has to be optional given the contrast between (25) and (26). If this is correct, however, the alleged correlation between finiteness and verb-movement cannot, in the absence of any independent evidence, be exemplified in cases where the suffix -t is attached to the verb. In other words, the data in (25) and (26) illustrate the possibility of verbs with the -t suffix occurring in either initial or final position, which is only natural given that we are dealing with one-place predicates. Recall, moreover, that similar observations were made about the placement of infinitival forms (as in (24)), which also appear in final or non-final position. All in all, it appears that in early German, the use of distinct inflectional affixes does not correspond to the presence vs absence of verb-movement to a functional head. Rather, word-order facts are regulated by independent constraints in Prefunctional grammars which do not involve movement processes.
Verbal forms with a -0 suffix are assumed to instantiate finite forms, though not ones specified for agreement at the Prefunctional stage (cf. Clahsen & Penke (1991)). In adult German, the -0 form is found in the first person singular and in imperatives. Nevertheless, in the authors' classification of verbs with the -0 ending, imperatives are excluded. The relevant data involving regular verbs with -0 ending are quite revealing in that there is hardly any correlation between their occurrence and a fronting process:

(27)  
(a) licht seh (Clahsen, 1991b)  
light see-0  
(b) boden bürs  
floor brush-0  
(c) purzel pierkorb rausräum  
purzel paper-basket empty-0  
(d) hol hund  
fetch-0 dog  
(e) hier bett leg (Jordens, 1990)  
here bed lay-0  
(f) hier autos fahr  
here cars drive-0  
(g) die auto hier boot umkipp  
the car here boat overturn-0  
(h) hammer hol (Miller, 1976)  
hammer fetch-0  
(i) hol auto  
fetch-0 car

The examples in (27) show that the OV as well as the VO orders are available in sentences where verbal forms appear with the -0 suffix. According to Clahsen & Penke's observations, it is only around the age of 2;4 (Corp.10) that the use of the -0 affix correctly encodes agreement specification, and thus conforms to the verb-fronting requirement on finite verbs. In other words, the sentences in (27) pattern with the infinitival ones in (24) where both the OV and VO orders seem to be available. Note, crucially, however, that these forms arguably instantiate a finite vs non-finite distinction which fails to exhibit the expected correlation in word-order patterns.

To summarise the discussion so far, the set of inflectional affixes that the
child uses at the Prefunctional stage includes the -n ending (arguably the infinitival ending), the -t suffix and the -0 form. Although none of these forms is assumed to encode agreement, the claim that there is a correlation between inflectional affixation and verb placement appears to be dubious. In particular, verbs with the -n ending, though found predominantly in final position, can also appear in non-final position, as shown above. Lack of consistency in the placement of verbs with the -0 ending is also attested. With respect to the -t suffix, which has been assumed to occur exclusively on verbs in fronted position I have argued that such a claim lacks empirical justification as the verbs involved are nearly always intransitive. Thus, any generalisation concerning their position with respect to the subject appears to be unwarranted.

In the context of the theory of maturation presented here, the absence of inflectional projections at the early stage excludes any correlation between finiteness and verb-placement in principle. Moreover, word-order possibilities are predicted in terms of early clause structure, where, due to similar considerations, the position of the subject and the object is not fixed. Thus, OV and VO orders as well as SV and VS are available, given that the relevant constraints on V2 languages, closely related to the presence of finite features associated with a functional head, are not available at the Prefunctional stage.

As far as the role of the input is concerned, it is clear that pre- and postverbal subjects as well as pre- and postverbal objects are available. On the assumption that finiteness is not syntactically realised as yet, alternative word-order possibilities as presented in the input data fail to be analysed in terms of inflectional affixation. Thus, word-order ‘errors’ involving infinitival forms in non-final position in either VS or VO combinations are expected to occur. Similarly, apparently ‘finite’ forms are allowed to occur in final position in either SV or OV combinations. Both sets of verbal forms are base-generated inside VP, whereas the position of the arguments is not restricted to a fixed position, hence the observed variation. The attested preference for verb-placement in final position may have to do with the frequency of this pattern in the input data (cf.
Mills (1985)). As suggested above, however, productivity of a certain pattern does not render other alternatives 'impossible' in terms of their syntactic availability.
FOOTNOTES
1. This is not to say that in adult grammars subjects appear always in the same linear position. Rather, the relevant constraints on a unique subject position involve a configurational notion which associates structural positions with properties of the elements occurring in them. Dislocated or topicalised subjects are thus assumed to involve a representation where the canonical subject position hosts an empty or overt pronominal category coindexed with the overt subject (cf. Cinque (1990) among many others).

2. In MG, object-clitics cannot appear if the coindexed dislocated element lacks a determiner. Given the categorial status of arguments at this stage, namely NP, the relevant coindexation mechanism cannot take place. An additional explanation for the absence of clitics at the Prefunctional stage, has to do with their being functional categories, on the assumption that they have D status (cf. Abney (1987)). If this is correct, then a correlation between the emergence of clitics and determiners is a plausible expectation. Although detailed investigation of crosslinguistic data needs to be carried out, it seems that, at least with respect to my corpus of Greek data, the relevant correlation is observed from the period immediately following the Prefunctional stage.

3. An additional problem with this suggestion is that no 'default' value has been assumed for the Head-parameter. This can be understood to imply that the notion of 'triggering' data, with respect to the head-parameter, is either irrelevant or different from standard assumptions concerning their role in resetting, where necessary, the 'default' value to the target one.

4. It could also be argued that both IP and CP are available right from the start. Weissenborn (1990) makes such a claim with respect to the status of interrogatives in early German. This claim is irrelevant to the present discussion of word-order in declaratives.

5. Note that, if, in sentences such as the ones in (25), the verb is argued to move to I, which occupies a final position (as in adult German) or C, the correlation between finiteness and verb-placement collapses, as there is no evidence (other than morphological affixation) to confirm it. This is due to the fact that we are dealing with two-word utterances where the subject can precede or follow the 'finite' verb (cf. (25) vs (26)). In any case, the assumption that verb-movement is involved in such cases, could only remain a stipulation as the order of the verb and the subject is free.
5.1. Introduction

The status of Negation in clause structure has been extensively discussed in the recent syntactic literature (Pollock (1989), Ouhalla (1990), Zanuttini (1991), Laka (1990)). One of the assumptions shared to a large extent by these researchers is the functional status of Negation and its independent projection in clause structure. In addition, (sentential) Negation is argued to be an Operator-like element in that its scope domain extends over the whole clause. This is formally expressed at LF where movement of the Negative element to sentence-initial position defines its domain of c-command.

Modals, in languages like English, are typically INFL-elements, base-generated in this position (cf. Pollock (1989)). Their Operator-status is closely related to the nature of Tense which, being itself an Operator, is required to bind a variable at LF. This requirement is assumed to be met by the movement of Tense to a higher position (at LF) thus creating the relevant configuration. In other languages, like German and Dutch for example, modals are assumed to be V-elements unlike modal auxiliaries in English. The difference in the categorial status of modal elements is assumed to be based, among other things, on their subcategorisation and distributional properties.

As far as the syntactic representation of elements such as Negation is concerned, I argued above that there is no one-to-one correspondence between the conceptual entry of the element in question and its syntactic position (see Ch.1). In other words, the presence of Negation, morphologically expressed in a given sentence, does not necessarily imply its availability as a functional category. Rather, inherent properties of Negation associated with its scope at the level of logical interpretation are argued to be available regardless. This
assumption could be understood as compatible with the idea that Negation can
be structurally realised either as a functional head or as an adjunct, depending
on language-specific properties of the Negative element (cf. Zanuttini (1991)).
A more general formulation of this suggestion is expressed in terms of Hoekstra
& Jordens' (1991) Maxim:

(1) There is in general no unique mapping from meaning to the syntactic
status of functional head.

(1) can be understood as implying that the syntactic availability of the Negative
element is independent of the presence of a functional structure. More precisely,
its structural realisation is primarily subject to configurational constraints on the
representation of Operators. If this assumption is correct, it follows that the
representation of Negation in the sentence changing over time depending on the
absence vs presence of a fully-fledged functional structure. Bearing this in mind,
similar considerations will be shown to apply to the availability and
representation of modals. In particular, it will be argued that the first
occurrences of modals in early grammar exhibit a general pattern in their
interaction with negation. This pattern will be shown to be present in early child
speech from a number of languages regardless of the syntactic status of modals
and negation in the corresponding adult language.

The absence of parameterised properties associated with negation and
modals will be argued to provide further support for the theory presented here.
In this respect, it will be shown that semantic properties of the categories in
question underly the crosslinguistic pattern attested as well as the structural
representation suggested.

The data I discuss in this Chapter are drawn from English, German and
Greek. As will become clear later on, the data discussed extend from the age of
22;0 to the age of 28;0 months approximately. Accordingly, some of these data
do not belong to the Prefunctional stage, unlike all the data discussed in the rest
of the thesis. In other words, it is possible that by this stage some inflectional
categories have emerged, as will be shown particularly with the Greek data. This is crucial for two reasons: first, a non-parameterised account of the similar patterns attested in early negative sentences substantiates the claim about the Structure-building hypothesis in that functional structure does not appear instantaneously. Thus, non-parameterised properties of certain elements persist even after the development of some inflectional projections. The second reason is that the common pattern exhibited in the development of negation and modals is shown to be dissociated from the development of inflectional heads. In other words, it will be argued that the position of negation is independent of the +/-finite distinction both at the Prefunctional stage (where the latter is absent) and at the stage immediately following it. Whatever correlation is argued to exist it will be shown to stem from properties associated with the notion of modality rather than finiteness.

5.2. English

The issue of Negation in early child speech has been addressed frequently both in the traditional literature of language acquisition (cf. Klima & Bellugi (1971), Bellugi (1967)), as well as in recent analyses based on the Principles and Parameters framework (cf. Pierce & Deprez (1990), Weissenborn, Verrips & Berman (1989), Hoekstra & Jordens (1991)).

According to Bellugi (1967) and Radford (1990), data from early English seem to exhibit two quite regular patterns1. In each case, the Negative element is either "no" or "not" (in both anaphoric and non-anaphoric uses) and the basic common characteristic is the absence of a modal/auxiliary, the copula, or the 'dummy' element "do", required in the equivalent adult constructions:

(2) (Bloom, 1970)
  a. No the sun shining. (=The sun's not shining)
  b. Not Fraser read it.
  c. No mommy do it. (No, let mommy do it.)
  d. No Mom sharpen it. (Bellugi & Klima, 1966)
Bloom (1991) claims that the pattern in (2) with negation in peripheral position is not really an alternative to the one found in the examples in (3). In particular, she points out that most of the examples cited in Bellugi (1967) with negation in external position are instances of anaphoric negation (cf. DeVilliers and Devilliers (1979)). In cases where the use of the negator is not intended anaphorically, its external position is argued to be due to the absence of an overt subject. If this is correct, then negation is shown to occur in medial position consistently. However, sentences such as (2a,b&c) include a subject and a (non-anaphoric) negator in peripheral position. Thus, this order must also be considered possible in early English.

Note that negative sentences with a non-anaphoric use of the negator have various semantic interpretations. In particular, Bloom's classification of negative utterances at the early stages is intended to account for three semantic categories; non-existence, rejection and denial:

(4) Non-existence:
   a. no fit/ no fit here
   b. no go first/ no go in there
   c. no stand up
   d. man no go in there
   e. Kathryn no like celery
   f. Kathryn no fix this
   g. no driver in the car
   h. no books/ no wagon/ Kathryn no shoe

(5) Rejection:
   a. no go outside
   b. no put in there
   c. no want this
   d. no make a truck
   e. no bear book
   f. no meat
   g. no slide away
Denial:

- no Daddy hungry
- this no Lois
- no Jocelyn/ no candle/ no truck

The adult equivalents of the sentences in (4) and (6) would involve the use of the copula or the 'dummy' element 'do'.

On the other hand, Bloom points out that the sentences in (5) express 'boulemaic' modality, as the element that appears to be missing is the verb 'want'²:

"...the verb 'want' was productive and occurred frequently in affirmative sentences ... but it was expressed in only three sentences that signaled rejection, although its occurrence in the underlying structure was easily postulated from the contextual and behavioural data. For example, Kathryn did not 'want' the bear book; Kathryn did not 'want' to make a truck" (Bloom, 1991:180).

On the basis of such observations, it could tentatively be suggested that the absence of the verb 'want' in negative sentences which convey negative 'boulemaic' modality indicates a certain compatibility between the negative element and the modal interpretation. This suggestion can also be argued to account for the discrepancy observed in the presence vs absence of the verb 'want' in positive and negative declaratives respectively. I will come back to this issue later on in this section.

As far as the structure of negative sentences in early English is concerned, it is clear that, in the absence of functional projections, the negative element is adjoined to VP (cf. Hoekstra & Jordens (1991), Radford (1990)). According to the VP structure assumed for early grammars, there are two alternatives for the placement of adjoined elements. The first involves adjunction to the first VP node. In this case, the subject precedes the negative element as illustrated by the examples in (3), (4e&f) and (6b). The second choice is for the negative element to adjoin to the higher VP node, giving the Neg-subject order, as in (2), (4a,b,c,g&h) and (6a)³:
Both positions involve adjunction structures, the difference being that in (7a) Negation appears in a pre-predicate position while in (7b) it appears in a pre-clausal position (cf. Radford (1990)). In either case, the Negative element appears in a position peripheral to VP, though the possibility of its preceding or following the subject is provided for by the structural representation of subjects as VP-adjoined elements.

The placement of negation in Prefunctional English, appears to be relatively clearcut, as discussed above. Note, however, that, in the development of negation, there appears to be a transitional stage between the one described above and the adult grammar. One striking property of this stage is that it involves the first occurrence of the contracted negative form attached to a modal, also appearing for the first time at this stage.

The first occurrence of modals as reported in Fletcher (1979) and Klima & Bellugi (1967) is between the age of 24;0 and 26;0 months. What is particularly interesting, however, is that during this period, modals occur exclusively in combination with the contracted form of the negative element (i.e. "can't", "won't"). A restricted use of "don't" is also attested but this element too does not appear in positive or interrogative contexts. The cases where "don't" is used are, in their majority, imperatives or with imperative force. Some relevant examples are provided in (8):
The absence of the modals and 'do' in declaratives suggests that their cooccurrence with the negative element is due to semantic rather than syntactic properties. In this respect, it could be argued that the use of negation in early grammars can encode modality in the sense suggested by Hoekstra & Jordens (1991). In those cases where the element 'don't' is used, the interaction of modality and negation is obvious, as imperatives are standarly assumed to encode a modal reading. Recall that a similar suggestion was made above with respect to the use of negation in sentences where the intended reading was modal (cf. (5)). The distinction Hoekstra & Jordens argue for, is based on the presence vs absence of modality expressed in negative sentences. This cooccurrence is structurally represented by the identity of the position which both negative and modal elements occupy:

(9)  
```
  VP
 / \  
MOD VP
 /   
|   
| neg
|   
| modal+neg
|   V
```

It is in this way that the compatibility of the two categories is captured in early clause structure.

The early occurrences of modal+neg in English child speech can thus be accounted for under the above analysis. Recall, however, that if the MOD position can host modal elements it is not clear what excludes their occurrence in non-negative contexts. Klima & Bellugi (op.cit.) suggest that, at this stage, instances of modal+n't are unanalysed units as their use is restricted to these
contexts. More precisely, apart from the absence of modals in positive contexts, there are no instances of Subj/Aux inversion with modals in interrogatives. On the basis of these observations, it could be argued that the absence of modals in non-negative sentences indicates that, at the relevant stage, they are not analysed as INFL-elements. If they were so analysed, interrogatives involving I-to-C movement should be attested, contrary to fact. Thus, the exceptional status of modals in early grammars can be captured in terms of the structure in (9).

However, the problem why modals do not occur under the MOD position without a negative element remains unresolved. A possible explanation can be derived in relation to the semantic properties of these elements. The modals cooccurring with negation at this stage express epistemic and deontic modality. Recall that, at an earlier stage, the use of the main verb 'want' in positive contexts was shown to contrast sharply with its limited occurrence in negative contexts where boulemaic modality was expressed by the use of the negator alone. According to Hoekstra & Jordens (1991), early Dutch data exhibit a strikingly similar pattern. During the first stage, the modals kan/mag occur with the negative element while their presence in positive contexts is hardly attested. At the same stage, boulemaic modality in positive contexts is expressed by the element minne/unne/hunne which means something like 'I want', while in negative contexts it is expressed by the use of the anaphoric negator alone. Additional evidence for the observed generalisation in English and Dutch comes from early Japanese. As McNeill and McNeill (1968) claim, "the negative element in Japanese ‘iya’ conveys the idea of ‘I don’t want’, and its use, therefore, depends on internal desire, or the lack of it”. The authors also point out that this element is the second (semantic) category of negation acquired by their Japanese subject after ‘non-existence’.

It therefore appears that a distinction between the different modal interpretations is attested systematically in early grammars: epistemic/deontic modality is expressed in negative contexts alone while boulemaic modality is expressed in both negative and positive contexts, albeit by different lexical
Thus, it could be argued that the emergence of the epistemic/deontic use of modals in positive declaratives is associated with semantic constraints. In terms of developmental stages, the emergence of these elements in interrogatives and affirmatives coincides with the acquisition of their syntactic properties. In this respect, the question whether semantics or syntax (i.e. the reanalysis of modals as INFL-elements) trigger their emergence remains open. In principle, however, the combination of both semantics and syntax in the acquisition of modals is not excluded.

Going back to the structures in (7), an alternative representation needs to be postulated on the basis of the distinction between modal and non-modal negative sentences in early English. Accordingly, in sentences such as those in (5) expressing (boulemaic) modality the negator appears under a MOD position. On the other hand, in sentences where no modal reading is conveyed (i.e. non-existence, denial), the negator appears under a Neg position (the position of the subject and object is irrelevant):

\[
\begin{align*}
\text{(10)} & \quad \text{a.} & \quad \text{b.} \\
\text{VP} & \quad \text{VP} & \quad \text{VP} \\
\text{MOD} & \quad \text{Neg} & \quad \text{Neg} \\
\text{V} & \quad \text{V} & \quad \text{V} \\
\text{neg} & \quad \text{modal+neg} & \quad \text{modal+neg}
\end{align*}
\]

Both structures in (10) are assumed to be available in early English from the initial stage. (10a) is the structural representation of sentences encoding modality, i.e. positive and negative imperatives, affirmatives including the verb 'want', and negatives such as the ones in (5) and (8). In the case of affirmatives (imperatives and those with the verb 'want'), the MOD position is occupied by a null modal element, responsible for the modal interpretation conveyed. In the other cases, the MOD position hosts the negator with or without a modal element according to the modality of the sentence (boulemaic vs
epistemic/deontic). Differences in the time of emergence of the categories of modality expressed are argued to stem from semantic rather than syntactic constraints as shown in the discussion above.

5.3. German

Negation in German is expressed by the negative element nicht which is assumed to be adjoined to the VP projection (cf. Webelhuth & den Besten (1987)). The position in which negation surfaces in German clauses is closely related to the +/-finite features on the verb. In the case of finite verbs in root clauses, negation follows the verb as a result of verb-raising to C. Negation precedes infinitival verbs due to the absence of verb-raising to C in these cases.

As far as early German is concerned, the acquisition of negation has been the focus of attention in both the older and more recent literature of language acquisition (Wode (1977), Park (1979), Clahsen (1989), Weissenborn, Verrips & Berman (1989), Anyadi (1991)). Early sentences including negation have been argued to provide supporting evidence for the assumption that the process of verb-fronting in finite clauses is available from the very early stages of acquisition. Thus, the presence of (at least one) functional position outside VP is argued to be responsible for the observed pattern.

One of the basic characteristics of early negative sentences in German is that, unlike their adult counterparts, two negative elements are used at the same stage: nein, which is the anaphoric negator and nicht which encodes constituent negation (Wode (1977), Park (1979)). Note, crucially, that although nein encodes anaphoric negation in adult German, in early German it is used in non-anaphoric cases as well. The availability of both these negative elements in early German gives rise to possible generalisations about the underlying properties that regulate their distribution. As a first approximation, note that the anaphoric negator is attested in sentences with both finite and non-finite verbs:
The position of the negator in both sets of examples is sentence-initial, unlike the negative sentences in (13):

(13)  a. geht nich (20;1, 20;2, 20;3, 21;0, 22;0, 22;3) (Miller, 1976)  goes not  
b. passt nich (22;0)  (Wode, 1977)  fits not  
c. geht gar nich (22;3)  (Wode, 1977)  goes at-all not  
d. Heiko darf nich (23;0)  (Wode, 1977)  heiko may not  
e. baut Max nicht (Weissenborn et al, 1989)  builds Max not  
f. mag auch nis (22;0)  (Stephany)  likes also not  
g. piept gar nicht, mäuschen (22;0)  squeaks at-all not, little mouse  
h. auch passt nich (22;0)  also fits not  
i. weiss ich nich, pullover (22;0)  know I not, pullover  (=I don’t know where the pullover is)
The in the same word as

The theoretical point in this footnote has no relevance here. Nor in particular there is an interesting question anto

optional, both in adults and child grammar, viz. if there is no optionality, how are seemingly optional cases to be

analyzed (e.g. topicalization in English)

also subject or not as highest adjective
The negator *nicht* also appears with non-finite verbs, though in initial position:

(14) a. nich hause gehn (22;0) (Miller, 1976)
    not home go
b. nich aua mache (22;3)
    not ouch make
c. nicht buttmachen lumlum (Clahsen, 1991a)
    not break balloon
d. nich kaputtmachen (22;0) (Stephany)
    not break
e. baby nich nuckel habe (24;0)
    baby not pacifier have
f. mone nich das eis habe (24;0)
    Mone not the ice-cream have

On the basis of examples such as those in (13) and (14) it has been suggested that the contrast between negation in initial vs final position can be derived if we assume that verb-fronting takes place in sentences with finite verbs but not in non-finite constructions (see references above). Taking a closer look at the data, however, the pattern observed seems to involve certain inconsistencies as far as the order of arguments in negative constructions is concerned. In particular, examples (14e&f) and (14c) exhibit the OV and VO order respectively, although no verb-movement is assumed to have taken place, given the non-finite inflection on the verb. On the other hand, examples (13d&e) exhibit the SVNeg and VSNeg orders respectively. Assuming that verb-raising has taken place, the subject-initial order can only be derived if the subject has also moved to the Spec of either IP or CP (depending on the analysis). This movement process should be optional given that alternative word-orders are available where the subject follows the finite verb. What seems to be constant in these latter cases is the position of the negator on the right periphery of the sentence.

As a first approximation to a solution, note that the VP structure suggested here for early grammars predicts that negation at this stage should appear in a position adjoined to VP either preceding the subject or following it (cf. (7a&b)). In this respect, the position of the negator in the German data considered so far can be accounted for, given that it surfaces in a VP peripheral position.

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Nevertheless, there are additional questions that need to be addressed. In particular, even if it is assumed that the placement of nicht indicates the presence vs absence of verb-fronting, the availability of both nein (in non-anaphoric uses) and nicht up to a certain stage fails to be accounted for. In other words, the question why both negative elements are used at this stage remains unanswered. Note moreover that the use of the anaphoric negator persists even at relatively advanced stages (cf. (12c,d&e). In almost all cases, however, where the anaphoric negator is used, it occurs in initial position, regardless of the +/– finite nature of the verb (cf. (11) and (12)). If finiteness was part of the early grammar, at this stage, the placement of this negative element should be expected to exhibit a similar correlation with the presence vs absence of finiteness, as is arguably the case with the occurrence of nicht. Presumably, both elements occupy the same position at this stage, namely a VP-adjoined position. Verb-fronting to a [+finite] functional head would thus be expected to give rise to similar patterns.

Moreover, both negators occur in verbless utterances in either initial or final position, though a preference is shown for nicht in non-initial position:

(15)  
a. nein ham (21;2) (Miller, 1976)  
no food  
b. auto nein (22;0)  
car no  
c. nein heiko mütze (24;0) (Wode, 1977)  
no Heiko cap  
d. platz nein (26;2) (Clahsen, 1982)  
place no  
e. nein naß (25;4)  
no wet
The occurrence of both types of negator in sentences without verbs may be taken to indicate that their status in early grammar overlaps, contrary to adult German. If this is correct, it follows that their representation in terms of structural positions is identical in those cases where the use of *nein* is non-anaphoric. If this was the case, however, verb-fronting in sentences such as the ones in (12) should be available. On the other hand, the attested preference for *nicht* in non-initial position in utterances without verbs could be understood to imply that the child may distinguish between the two negators at least as far as their surface position is concerned.

During the same stage, negation in middle position has also been attested:
A discussion on the chance of scrambling. In effect, the order is not in actual German but it is if O = def., as here.
(17) a. mag nich kuche backe (22;3) (Miller, 1976)
    want not cake bake
b. nein, hat nich aa, henning (23;0) (Wode, 1977)
    no. has not stool, henning.
    (I haven’t dirtied my pants, Henning)
c. is nis teller (24;0) (Stephany)
    is not plate
d. is nich papa (22;0)
    is not daddy
e. kann nis hoch (22;0)
    can not up
f. kann nis aus (22;0)
    can not out
g. kann nich schuhe an (22;2)
    can not shoes on
h. brauche nich lala (24;0) (Clahsen, 1988)
    need not pacifier
i. ich seh nich helga (22;1) (Stephany)
    I see not Helga
j. ich seh nich mäuschen (22;1)
    I see not little-mouse

Note crucially, that the presence of modals in these cases is quite frequent. Examples which do not involve a modal verb, like (17i&j), exhibit the SVNegO order which is ungrammatical in adult speech. One possible explanation for this problem, according to Clahsen (1991a), could be that negation is affixed onto the verb, and hence fronted with it. As pointed out by Weissenborn et al (1989), however, this assumption runs into problems, considering sentences such as the following:

(18) a. kann ich nicht (22;4) (Weissenborn et al, 1989)
    can I not
b. darf er nich (23;1)
    may he not
c. kann ma nich esse (25;2)
    can one not eat
d. kann man nich taubsauger anmachen (22;2) (Stephany)
    can one not hoover on-switch
e. kamman gar nich sehe (22;2)
    can one at-all not see

In the examples in (18), personal pronouns as well as adverbial modifiers intervene between the modal and negation.
I suggest that a possible solution can be found in connection with the use of modals at this stage. Unlike early English data of the same stage, negative sentences with modal verbs seem to be available in early German. Note, however, that a possible comparison can be drawn with the English data of the later stage where the first use of modals is attested. Recall that the contracted form of negation in early English appears initially with modal elements which fail to appear in positive declaratives. On the basis of such evidence, it was suggested that the use of modals+Neg, at this stage, indicates their distinct status from other verbs which appear in both negative and non-negative sentences. This difference was argued to be captured by the structural representation of modals and negation in (9).

With respect to the German data, note that the first occurrences of modals in positive declaratives, attested between 25;0 and 27;0 months, clearly contrast with their presence in the negative sentences provided above (cf. Weissenborn (1990)). In Miller (1976), sentences with modals in non-negative sentences are extremely rare (2 examples) up to the age of 24;0 months. Thus, the facts of early English and German indicate that a generalisation about the cooccurrence of modals and negation is required. It could thus be suggested that the structure in (8) provides a plausible account for the cooccurrence observed.

In this respect, note that the placement of modals in early German, exhibits a consistent pattern in that they always occur in non-final position (Clahsen & Penke (1991), Weissenborn (1990), among others). Recall, also, that the placement of main verbs with 'finite' endings fails to exhibit an equally consistent pattern (see section 4.3.). Thus, the distinct status of modals and main verbs is also supported by word-order facts. According to the structure in (9), the occurrence of modals in a position distinct from that of main verbs can account for the observed discrepancy in their word-order variability.

However, there are certain problems with the structure assumed in (9) for the German data. In particular, notice that the examples in (13) involve a main
verb with finite inflection and the negator *nicht*. Recall that, finiteness, in the form of Tense and Agreement distinctions, is not as yet part of the Prefunctional grammars (see Ch.2 and 3). Nevertheless, Aspectual distinctions are available in that verbal elements with the -t ending (when not participial forms), have been argued to encode the progressive imperfective reading. In other words, they are used to express an activity or event which pertains to the here-and-now. If this is correct, modality seems to be incompatible with the relevant interpretation, on the assumption that modality is used to express a possibility, necessity or desire that does not pertain to the present situation. The implication of this incompatibility is that in negative sentences such as the ones in (13), the structure involved can not be identical to (9), particularly with respect to the presence of the MOD position. Thus, an alternative suggestion has to be made in order for non-modal negative sentences to be represented:

(19) VP
    /\    \VP  NEG
   /\    /V  nicht
  /\               
 V                

The structure in (19) aims to account for non-modal negative sentences such as the ones in (13). The preference for the negator in final position is subsumed under the general pattern observed in negative sentences with *nicht* which do not include verbs (cf. (16)).

Turning now to sentences which include the negator *nein* (cf. (12) and (13)), I suggest, following Hoekstra & Jordens (1991), that this negative element, not being an alethic negator, has inherent modality. Thus, both sentences with 'finite' and 'non-finite' verbs when introduced by this negative element, convey a modal interpretation. This assumption is in contrast with the authors' suggestion with respect to early Dutch, namely that the choice of the negator is associated with the inflectional specification on the verbal element. The German data under discussion do not seem to fall under this generalisation.
Even if finiteness was syntactically available at this stage, the interaction between finiteness and modality is clearly available in adult language. This is clear in early German data as well where 'finite' forms are used with modal interpretation. For example, the sentence in (12a) is interpreted as "I can't manage" in Wode (1977) on the basis of contextual information at the time of the utterance. The structure in these cases would be similar to (9), albeit no specification of finiteness is relevant:

(20) 

Note that, the examples in (14) present a problem for modality as far as the distinction between the two negative elements is concerned. In these sentences, *nicht* occurs in preverbal position while the verb appears in the infinitival form. Among these examples, some are argued to be infinitival 'imperatives' while others are infinitival 'declaratives' (cf. Weissenborn et al, 1989). As discussed above with respect to early English, modality is compatible with the intended interpretation of imperative sentences. In the case of 'declaratives', however, it is only possible to speculate as to whether modality is involved. Nevertheless, on the basis of the imperatives at least, it could be argued that the possibility of *nicht* being associated with a modal interpretation is available.

If this is the case, (20) would account for such constructions as well. The difference between the two negative elements, would thus be reduced to the fact that *nein* occurs exclusively in sentences with boulemaic modality. Due to its inherent modality, it can appear in the MOD position independently. As far as *nicht* is concerned, it lacks inherent modality, hence its availability in both modal (where modality is expressed independently) and non-modal sentences. The case of imperatives introduced by *nicht* can be construed as clearcut evidence for the presence of a MOD position in these constructions as well as for the availability
of this negator in modal contexts. If this is correct, the distinct positional pattern observed in negative sentences with *nicht* could be partly attributed to its occurrence under the MOD node. Given that this negator, unlike *nein*, does not have inherent modality, its representation in sentences such as the ones in (14) involve the presence of a null modal to which the negator is attached. (20) is thus enriched as in (21)\textsuperscript{10}: 

\begin{equation}
(21) \quad \begin{array}{c}
\text{VP} \\
\text{MOD} \quad \text{VP} \\
\text{nein} \quad \text{V} \\
0+\text{nicht}
\end{array}
\end{equation}

Let us now turn to the apparently problematic cases in (17) and, in particular, the ones which involve the presence of a modal and the negative element *nicht*. As shown in the structure in (19), *nicht*, being the alethic negator, is represented under a Neg position in the structural representation, unlike *nein* in (20)\textsuperscript{11}. On the other hand, the occurrence of *nicht* in the MOD position was argued to be possible in constructions such as the ones in (14). Recall also that, modals in early grammars are not as yet classified with main verbs, hence their distinct status in terms of constraints on position and cooccurrence with the negative element. Thus, data such as the ones in (17) are accounted for along the lines suggested for sentences with a null modal and the alethic negator (i.e. (14)). In this way, the structure in (22) accounts for the possibility of an overt modal with *nicht*:
but they are guaranteed precisely
in this form under some
version of the FCH
As Weissenborn (1990) points out the adjacency requirement between the modal element and negation runs into problems with examples such as those in (18) where certain elements intervene. As Weissenborn himself mentions, however, the set of elements that are allowed to intervene is quite restricted. In particular, only subject pronouns and adverbial modifiers of the negator are attested. It seems to me that sequences such as modal-pronoun-Neg as well as modal-gar/auch-Neg can be argued to be represented as unanalysed in early grammars as they appear in the form of cliches in adult language. Moreover, in the list of examples that Weissenborn cites as counterevidence to Clahsen’s suggestion concerning affixation, most of the data with modals are from a later stage (25;0 months onwards) where modals have begun to appear independently of negation. All in all, the crucial point in this suggestion is that the cooccurrence of modals and negation in early stages can be accounted for. Given that the observed pattern is attested in other languages as well, it seems to me that a uniform account is required. The structure in (22) can thus be argued to allow for the relevant generalisation.

To summarise, the facts of early negative sentences in German are argued to receive a plausible explanation if we assume a VP-adjunction structure as suggested for English. The use of two types of negator is argued to reflect a distinction between a modal vs non-modal negative interpretation. In particular, the anaphoric negator occurs under the MOD position given its inherent modality (cf. Hoekstra & Jordens (1991)). The alethic negator may occur in either modal or non-modal contexts depending on properties of the construction.
involved. In the first case, the negator is represented under a position adjoined to VP as in (19). In the second case, a MOD position is available and the negator attaches to the modal element (overt or null). The cooccurrence of modals and negation as well as the consistent placement of modals in fronted position at this early stage are accounted for by assuming that modal elements have a status distinct from main verbs. This is reflected in their structural representation which is distinct from that of main verbs (adjunction to VP (MOD) vs V). In this respect, the similarity observed in early English and German as far as the occurrence of modals is concerned receives a uniform account.

5.4. French

The analysis presented here, can be extended to account for the properties of negation in early French. Pierce & Deprez (1990) and Weissenborn et al (1989) argue that the placement of negation in early French is virtually errorless in that negation follows or precedes the verb according to the +/-finite morphology that it exhibits. Thus, the account presented in the above references involves the presence of an inflectional head higher than VP, to which the verb moves leaving negation behind (adjoined to VP). In neither of these analyses are the semantic properties of negation and its interaction with modality investigated.

In Choi (1988), the results of a crosslinguistic study on the acquisition of negation are reported. The data studied are from English, French and Korean. She distinguishes three stages in the development of negation:

(23) a. non-existence, prohibition, rejection
    b. denial (inability, epistemic negation)
    c. normative negation, inferential negation

For current purposes, I will concentrate on the French data which involve the use of negation in the first two phases (i.e. (23a) and (23b), as the end of the second phase is around the age of 2;11, well beyond the period under
discussion. In fact, in Choi's classification of the French data, there is considerable overlap in the first two stages; the first stage extends from the age of 1;11-2;7 while the second one extends from the age of 1;11-2;11. I will thus assume that the use of negation for expressing the semantic categories defined in (23a&b) appears at the same period.

The first important point that should be stressed is that the anaphoric negator *non* is productively and frequently used (Choi, 1988:526). Thus, unlike adult French, but as in early German and early English, the anaphoric negator expresses negation in non-anaphoric uses. During the first stage, non-existence contrasts with the other functions (cf. (23a)) in that it is expressed with a distinct form:

"One function for which all children used a distinct form was non-existence. The forms were ..., *parti* ('gone') in French .... With prohibition, rejection and failure, there was a general tendency to use the same form(s) for all three functions interchangeably. The forms were ..., *non, pas* or *non pas* in French ..." (Choi, 1988:527).

It thus seems that the distinction between modal and non-modal negative sentences is operative in early French as was argued for early English and German. In this respect, Choi argues that the semantic categories, other than non-existence, were expressed by the use of the same negator due to their sharing an underlying conceptual property:

"...a conflict between what the child wanted and the current state of affairs. Non-existence differed from the other three Phase I functions in that it simply described the state of affairs without the sense of conflict" (Choi, 1988:527).

In other words, the distinction in question is between boulemaic modality and non-modal negative sentences. According to Choi, consistent use of *pas* is found in sentences which express inability and epistemic negation. Thus, the child uses forms such as 'pas arrive' with the meaning "I am not able to succeed" and 'sais pas' or 'pas' with a rising intonation to express epistemic negation. Thus, the alternative patterns are summarised as in (24):
There are two points that should be emphasised with respect to the above patterns. First, the negator *pas* is found in initial position with verbs that are morphologically finite. Secondly, the anaphoric negator is restricted to sentences that convey a (non-epistemic) modal reading. Moreover, note crucially that the verbs 'arriver' (in the sense of 'succeed') and 'savoir' do not appear in affirmative sentences at this stage. This is reminiscent of the early English data where the use of modals *can't* and *don't* is restricted to negative contexts.

One of the problems with Choi's analysis is that she does not refer to the use of infinitival forms in negative sentences. In the examples that Pierce and Deprez (1990) list with infinitival verbs, there is no discussion of the intended interpretation from the child's point of view. In the absence of contextual information, any generalisation as to whether the negator, in such cases, encodes (boulemaic) modality remains a stipulation. Some examples are provided in (24):

(25) a. pas la poupee dormir (21;3) (Lightbown, 1977)
    not the doll sleep
b. pas casser (20;1)
    not break
c. pas chercher les voitures (25;3)
    not look-for the cars
d. pas rouler en velo (26;1)
    not roll on bike

All in all, it appears that early French exhibits properties similar to German and English, in that there appears to be a distinction between modal and non-modal sentences as well as a distinction between the different categories of modality expressed. Moreover, the use of the anaphoric negator as well as the possibility of *pas* occurring in initial position with a 'finite' verb, casts doubt on the general claim that negation in early French is 'errorless' in terms of syntactic criteria.
Nevertheless, the present discussion of the French data cannot be conclusive for two reasons; first, the syntactic analyses suggested in Pierce & Deprez (1990) and Weissenborn et al (1989) ignore the ‘deviations’ from the model, attested in early French data. Secondly, Choi’s (1988) semantic analysis does not allow for any generalisations to be drawn with respect to the morphological specification on verbal forms at this stage nor any consistent distinction (in terms of modality) between these forms. If the semantic compatibility of negation and modality is instantiated crosslinguistically, which is only natural if we are dealing with non-syntactic and, hence non-parameterised properties, it is unlikely that French constitutes an exception.

5.5. Greek

Negation in adult Greek is expressed by the use of two negative elements which appear in mutually exclusive contexts: the negator dhen(n) is used in indicatives while the negator mi(n) is used in imperatives and subjunctives:

(26)  a. Dhen efige o Yanis.
     not left-3s the-nom Yanis
     "Yanis did not leave."

     b. Efhome na min pai.
     hope-1s sub. not go-3s
     "I hope that he will not go."

     c. Mi figis.
     not leave-2s
     "Don't leave."

Ohi is the anaphoric negator. The negative element dhen is a bound morpheme which heads its own projection, i.e. NEGP (Tsimpili (1990)). This is assumed to be higher than all inflectional projections, and immediately following CP. Min also appears attached to the verbal complex in that no elements other than clitics are allowed to intervene:
"Thelo na min o Yanis figi."
"want-1s sub. not the-nom Yanis leave-3s"
"I don’t want Yanis to leave."

However, *mi* can appear independently, as in negative imperatives, where the main verb is not phonetically realised. In these cases, the interpretation is easily recoverable from the context:

(28) Mi (to-agiksis).
not it-touch-2s
"Don’t touch it."

In negative imperatives the use of the particle *na* preceding the negator *mi* is optional. The verb is obligatorily present in these cases:

(29) (Na) mi *(to-agiksis)
sub. not it-touch-2s

The negator *mi* is assumed to be attached to the particle *na* in the sense that the +/−-negative specification on the MoodP is realised as 0 and *mi* respectively (cf. Laka (1990), Tsimpi & Roussou (in prep.)).

Turning now to early Greek data, there are hardly any errors in the use of the negator *dhen* from the earliest stage (*e*’,*en*’,*zen*’ are all forms of this negator in children’s speech):
The first uses of negation are restricted to the negator *dhen* in initial position and always attached to the verbal element. The only ungrammatical examples from this stage are those in (31):

(32)  a. ohi seli confe Atsia (1;11)  
      no want-3s corn-flakes Alexia  
      "Alexia doesn’t want corn-flakes"  
      (as an immediate response to the question ‘Do you want cornflakes?’)

  b. ze kunjete, mama (1;11)  
      not move-3s mummy  
      "Don’t move, mummy"

  c. ze fiji, mama (1;11)  
      not leave-3s mummy  
      "Don’t leave, mummy"

(32b&c) are intended to be imperatives though both the agreement marking and the negator used are wrong\(^4\). Imperatives are used much less frequently at this stage, though in these cases the negator *mi* is appropriately used:
The above early data seem to suggest that the development of negation in Greek is almost flawless. Negative indicatives and imperatives are marked appropriately with very few examples deviating from the adult model.

However, the following stage, beginning roughly about the age of 2;0, is characterised by a number of ungrammatical negatives produced quite consistently. Their basic characteristic is the use of the anaphoric negator (οhi) followed by a na-clause:

(34)  a.  ohi ta paputsia na vgalis (2;0)
      no the shoes sub. take-off-2s
      "I don't want to take the shoes off"

     b.  ohi na figume (2;0)
      no sub. leave-2s
      "I don't want us to leave"

     c.  ohi na pagosune (2;1)
      no sub. get-cold-3p
      "I don't want them to get cold"
      (as a reaction to "Your hands will get cold")

     d.  ohi na figume (2;1)
      no sub. leave-1p
      "I don't want us to leave"
      (as a reaction to "Come, let's go")

     e.  ohi na katsi i Anna
      no sub. sit-3s the Anna
      "I don't want Anna to sit"

     f.  ohi se klisi (2;1)
      no you-shut-3s
      "I won't/don't want to shut myself in"
      (as a reaction to "Elli, you'll shut yourself in the basket")

     g.  ohi na kimithi i Elli (2;4)
      no sub. sleep-3s the-nom Elli
      "Elli doesn't want to sleep"

     h.  ohi na t'afisis mesa (2;3)
      no sub. it-leave-2s inside
      "I don't want to leave it inside"
      (as a reaction to "you have to leave it in there")
The use of the anaphoric negator with na-clauses persists until the age of 26;0 months. During this stage inflectional morphemes as well as determiners and clitics are available. During the same stage, the use of the negators dhen and mi is also attested:

(35) a. ze selo to psomi (2;0)  
    not want-1s the bread  
    "I don’t want the bread"

b. ze ponai Atsia to heraki tis (2;1)  
    not hurt-3s Alexia the hand her  
    "Alexia’s hand doesn’t hurt"

c. dhe pjanume ta moa (2;1)  
    not touch-1p the babies  
    "We do not touch the babies"

d. en ehi mesa...en in vai (2;2)  
    not has inside...not is heavy  
    "it doesn’t have inside...it is not heavy"

e. zen halase i kaseta (2;1)  
    not broke-3s the tape  

f. zen tin evgala (2;1)  
    not her-took-out-1s  
    "I didn’t take it out"

g. ohi...dhen efaga (2;1)  
    no....not ate-1s  
    "No, I didn’t eat"  
    (as an answer to "Did you eat anything?")

(36) a. mi piazete to kaotsi (2;0)  
    not touch-2p the pushchair  
    "Don’t touch the pushchair"

b. mi taghudhas...ego (2;1)  
    not sing-2s...I  

c. ohi, mi ti pjis..dhiki mu ine i pojaja  
    no not it-drink-2s own my is the orange-juice  
    "No, don’t drink it..it’s MY orange-juice"

d. mi to kopsis (2;1)  
    not it-cut-2s  
    "Don’t cut it."

As a first approach to the facts of negation in early Greek, note that one of the differences between the first and the second stage is the absence vs presence of the modal particle na. As mentioned above, this particle can be used in both imperatives and subjunctives (but see fn.10). One of the underlying common
properties that non-indicative constructions have is their modal specification for 'irrealis', i.e. reference to a non-actual world (cf. Palmer (1986)). Moreover, epistemic, deontic and boulemaic modality can all be conveyed by the use of either an imperative or subjunctive form. As far as the morphological properties of negative subjunctives and imperatives are concerned, the verbal forms used are identical. Thus, the question as to whether a na-clause is imperative or subjunctive cannot receive a straightforward answer on the basis of morphological or syntactic properties (except for some of the cases where the na-clause is embedded)\(^{15}\). In this respect, contextual information is responsible for determining the imperative force of the utterance.

Despite the above common characteristics of the two categories, it appears that, contrary to adult language, early Greek exhibits a fairly consistent correlation between the intended modal interpretation and the negator used. As shown by the examples in (34) and (36), boulemaic modality is quite consistently expressed by the use of the anaphoric negator (which is not used anaphorically in these cases), while deontic/epistemic modality is expressed by the use of the negator \(mi\). Non-modal negative sentences (encoding non-existence and denial) involve the use of the negator \(dhen\), as is the case in the adult language as well.

The above distinction exhibited in early data is crucial for two reasons. The first is that it provides further evidence for the correlation between negation and modality argued for with respect to early German, English and French in the preceding sections. This correlation seems to involve not only a modal/non-modal distinction but also a distinction between the possible modal interpretations conveyed (cf. Hoekstra & Jordens (1991)). The second reason is that it provides independent evidence for the Structure-building hypothesis discussed in Ch.1. More precisely, the idea that functional structure emerges gradually rather than instantaneously is supported by the development of Negation which appears to be independent of (and delayed with respect to) the emergence of other inflectional categories\(^{16}\). As shown by the Greek data from the second stage, Agreement, Tense and the modal particle \(na\) are productively
and correctly used.

Note that, in adult language, the syntactic properties associated with na-clauses can only be accounted for in terms of feature-selection. In other words, the absence of deictic Tense, the presence of the modal particle *na* and the use of the negator *mi*, all being properties of na-clauses, are attributed to feature-specifications associated with functional heads in the clause structure (cf. Tsimpli (1990), Agouraki (1991)). In this respect, the above data show that semantic properties of modality in relation to the use of negation give rise to constructions not available in the corresponding adult language.

As far as the structural representation of negation in early Greek is concerned, a distinction between modal and non-modal sentences is required. Moreover, a further subdivision between the boulemaic and the deontic/epistemic interpretation seems to be operative. As far as the first stage is concerned, the affixation of the negator *dhen* onto the verbal head is argued to be a lexical process. This is consistent with the theory presented here, where morphological properties of lexical elements are specified at the interface level. Thus, the presence of the affixal negator *dhen* is argued to involve incorporation into the verbal head in the morphological component. As far as the use of the negator *mi* is concerned, its compatibility with a modal interpretation receives support from the initial stage. I thus suggest that, as *mi* is the negator associated with deontic/epistemic modality, it is represented under a MOD position in early VP structure.

Note crucially that this negator, unlike the anaphoric one, is not assumed to have inherent modality. Rather, its presence in imperatives is related to the presence of a null modal element available in these constructions. The relevant representation is as in (37):
Note that the presence of a null modal element in non-negative sentences, such as imperatives, is also assumed to be available, albeit phonologically null. Similarly, positive declaratives encoding boulemaic modality are assumed to have a null modal in the VP-adjoined position. The underlying motivation for this assumption is that modality is semantically encoded in the Greek data from the earliest stage (cf. Stephany (1986)). This is consistent with the early data from German and English, where similar semantic distinctions between modal categories are available and evidenced morphologically in relation to the use of negation.

As far as the second stage of development is concerned, the above data indicate that the presence of the anaphoric negator used to express boulemaic modality is adjoined to a projection which determines the categorial status of the clause structure. On the other hand, the representation of the negative element mi is assumed to be different from that of the previous stage for two reasons. First, the presence of the particle na is productive and correct, unlike stage I. The selection of the negator mi in all na-clauses apart from the ones where the intended interpretation is that of 'I don’t want to' (i.e. which express boulemaic modality) is also correct. Thus, negative purpose-clauses and imperatives are all marked with the negator mi:
(38)  a. epese to koritsaki...min pesi i Elli (2;2)
    fell the girl-dim ...not fall-3s the Elli
    "The little girl fell..Elli shouldn’t fall"

b. thelo na to foeso sto lemo ja na min to haso (2;6)
    want-1s sub. it wear-1s on-the neck for sub.not it-lose-1s
    "I want to wear it on my neck so that I won’t lose it."

c. pepi na to katao.. min pesi (2;6)
    must-3s sub it hold-1s not fall-3s
    "I have to hold it so that it won’t fall"

d. na mi vjis jati dhen ehis paputsia (2;2)
    sub. not go-out-2s because not have-2s shoes
    "You shouldn’t go out because you are not wearing shoes"

e. klisto..na min to hasi i Elli (2;1)
    close-it sub. not it-lose-3s the-nom Elli
    "Close it so that Elli will not lose it"

Assuming that the particle *na* heads its own projection, namely MoodP (see references in Ch.2), the presence of the negator in na-clauses can be accounted for. In other words, the presence of the negator *mi* in na-clauses such as the ones in (38) is associated with the particle *na* in terms of feature-selection exerted by the head of the MoodP (cf. Tsimpli & Roussou (in prep.)).

Thus, the representation of (na)-mi sequences involves a head-adjunction structure as in (39):

(39) MoodP
    Spec Mood'
    Mood
    Mood Neg
    na mi

Note that this structure implies that either or both of these elements are affixal. This is indeed the case as far as the particle *na* is concerned (cf. Tsimpli (1990)). The obligatory presence of the negator *mi*, rather than the negator
then, in the above representation is expected as the former is argued to be selected in terms of feature-specification by the particle *na*.

The crucial point with respect to the structure in (39) is that, in the presence of a MoodP in the clause structure, the use of the negator *mi* in na-clauses is made available by the [+negative] specification on this functional category, as is the case in adult language. Note that, as shown by the examples in (38), the negator *mi* is used not only in imperatives but in purpose-clauses as well. Given that the modal interpretation in these cases is not as clear as with imperatives, it follows that, at this stage, the negator *mi* is syntactically available as a result of the emergence of the Mood category in the clause structure. In this respect, the transition from the first stage to the second reflects the difference in structural representation of the negative element in question (i.e. (37) vs (39)). Thus, the more general use of the negator *mi* during the second stage is accounted for on the basis of its syntactic status ¹⁹.

The problem with the above analysis is why the anaphoric negator is used with na-clauses at a stage where the syntactic status of *mi* is already acquired. Recall that the compatibility of boulemaic modality with negation is only encoded in the use of the anaphoric negator in Greek as well as in English and German. In other words, it is only the anaphoric negator that is assumed to have inherent modality. Its consistent use at the second stage in sentences such as the ones in (34) clearly shows that the distinction operates in terms of boulemaic modal interpretation. The availability of a MoodP gives rise to a syntactic representation of the negator *mi*, while the anaphoric negator, given its inherent modality, is still used in sentences where boulemaic modality is expressed. In other words, the emerging clause structure, in particular the MoodP, does not affect the negator with any inherent modal status because this functional category is not responsible for the modality encoded by the sentence, as is also the case with the adult language.

The final point that remains to be discussed concerns the use of the
negator dhen. As argued above, its representation during both stages defined here is assumed to involve lexical affixation to the verb. The question, in this respect, is when does NEGP become available? Note that, assuming that this projection is higher than all inflectional projections in the clause structure, word-order differences are unlikely to signal its emergence. Moreover, given that this negator is a bound morpheme, the order of arguments and adverbs in relation to the Neg+V complex is irrelevant to its position.

There is, however, some evidence which supports the idea that, even at the second stage of the development of negation, NEGP is not present. The evidence comes from negative polarity items (NPI) which require the presence of a negative element in the sentence. The obligatory presence in adult Greek of negation in these cases is accounted for on the assumption that licensing of NPI's is the result of a Spec-head agreement process inside NEGP (Haegeman & Zanuttini (1991), Haegeman (1992), Tsimi (1991b) and Agouraki (in prep.)).

NPI's at the first stage of development are not attested in the corpora of the two children studied, but at the second stage they are attested:
a. tha pi tipota (2;3)
   will say nothing
   "It will not say anything"
   (as a reaction to "Let's see what'll say")

b. ehi tipota (2;3)
   has nothing
   "It doesn't have anything"

c. Tipota ehi (2;3)
   nothing has
   "It doesn't have anything"

d. efaga tipota (2;4)
   ate-ls nothing
   "I didn't eat anything"

e. ehi tipota (2;4)
   has nothing
   "It doesn't have anything"
   (as a response to "What's on your cheek? Is there anything?"

f. ehi tipota (2;6)
   has nothing
   "It doesn't have anything"
   (as a response to "What's on your ear?"

f. ke tha ehi tipota (2;6)
   and will have nothing
   "And there won't be anything"
   (as a reaction to "This one will finish now")

g. pia tipota (2;6)
   took-ls nothing
   "I didn't take anything"

All sentences in (41) are ungrammatical due to the absence of the negator 'dhen'.
Note that polarity items in Greek can have either positive or negative interpretation. In the second case, the PI bears heavy (focal) stress. This property, syntactically represented as an [+f] feature, in combination with the Spec-head agreement process inside NEGP, is assumed to license the NPI. In the sentences in (41) the NPI bears heavy stress.

Thus, apart from the contextual information which favours the negative interpretation, it is clear that the intended reading is the negative one. Given that the negator dhen is used appropriately (in non-modal) sentences, the only alternative is to assume that NEGP at this stage is not available. If this was not the case, the Spec-head configuration required for licensing would be
available. On the basis of this discussion, we can legitimately conclude that
NEGP is not as yet part of the clause structure. Thus, the representation of the
negator dhen is assumed to be identical to the first stage where it is attached to
the verb as a process of lexical affixation.

To summarise, the main issues discussed in this Chapter are the
development of Negation in early grammars and its interaction with modality.
I have argued that the first emergence of modals is closely related to negation
for reasons that have to do with semantics rather than syntax. The presence of
the anaphoric negator in early grammars has been argued to express modality,
in particular, boulemaic modality. During the first stage, modals are not
syntactically analysed as verbal elements. Rather, they occupy a VP-adjoined
position which is also argued to host the anaphoric negator, the underlying
assumption being that modality is expressed in either case. The emergence of
syntactic structure gives rise to modals being reanalysed as verbal elements
which are therefore syntactically related to features of finiteness. The
crosslinguistic properties attested in the interaction of negation and modality
have also been argued to provide further evidence for the absence of a
functional structure at this early stage as well as for the Structure-building
hypothesis.
1. Radford (1990) points out that in his own corpus of data, Negative sentences with the negation element preceding the whole clause are not attested. In Bloom (1970), it is suggested that the Neg-subject order was mostly characteristic of the anaphoric use of negation. On the other hand, DeVilliers and DeVilliers (1979) question this claim on the basis of their own corpus of data which involves extensive use of non-anaphoric Neg-initial negation. Despite the clearcut differences between Radford’s and Devilliers & Devilliers’ data, both patterns seem to be available at this stage, possibly subject to individual differences.

2. In the sentence in (4c) which includes the verb ‘want’, the missing element is also ‘do’. In this case, however, ‘boulemaic’ modality is overtly expressed by the main verb.

3. As for the examples in (4), it is difficult to decide whether Neg is adjoined to the higher or lower VP node as there is no overt subject.

4. The modality expressed in imperatives, however, is not necessarily ‘boulemaic’. Imperatives can convey ‘epistemic’, ‘deontic’ or ‘boulemaic’ modality, the choice being indicated by pragmatic factors (cf. Clark (1991), Rouchota (1991)).

5. The structure suggested in Hoekstra & Jordens (1991) involves the presence of an infinitival verb in V. Finiteness is not represented in (8) as its binary values are argued not to be part of early grammars (see Ch.2). Given that the interaction of modality and finiteness is available in adult language, there is no a priori reason for them to occur in mutually exclusive contexts in early language. If, however, finiteness is not syntactically available then a generalisation as regards a modal/non-modal interpretation in negative sentences can be drawn on independent grounds.

6. The status of the MOD position is not made explicit in Hoekstra & Jordens’ account. In the theory presented here, this position is nothing more than an adjunction to VP. The properties associated with it, in particular negation and modality, are not represented as syntactic heads or syntactic features. Rather, their compatibility is related to semantic categories, not necessarily represented in the corresponding adult language. The possibility of these elements being realised as functional categories is excluded on both theoretical and empirical grounds. Moreover, the crosslinguistic similarities attested with negation + modality are available precisely due to their not having a functional status in early grammars. If this was not the case, then parameterised properties of Neg as a functional category, as well as the absence of the anaphoric negator would be excluded in early grammars, contrary to fact.

In what follows, I will refer to the MOD position for ease of exposition. The intended meaning, however, denotes to the VP adjoined position in (8) rather than any syntactic category.
7. Thus, it may turn out that Inflection is present in the functional structure at this stage (26;0 months). This would imply that the representation of modals under INFL (or TNS) is independent of the availability of this functional head. Rather, it is the result of a reanalysis of modals as INFL-elements which consequently appear in this functional position. In this way, the claim mentioned above that the representation of modals is independent of finiteness is clarified.

8. Wode (1977) and Mills (1985) point out that during the one-word stage negation is expressed exclusively with the use of the anaphoric negative element nein. Individual differences according to the age at which the first occurrences of negation are attested are also evident. For example, in Clahsen’s (1982) collection of data, sentences with a negator and another element appear quite late in Julia’s and Mathias’ corpus (24;3 and 28;2 respectively).

9. It is not clear what ‘optional’ means. It may either be an instance of Topicalisation in terms of an adjunction structure or in terms of substitution-movement to the Spec of a functional projection. The latter is the choice of adult German (V2 construction) which, however, is not an optional process. The assumption that the ‘optional’ status of this movement process is restricted to early German is possible, but difficult to substantiate. If optionality is part of early grammars, unlike their adult counterparts, a number of problems remain unresolved: if we are dealing with a representation similar to the one involved in adult language, what causes the change from optional to obligatory? In addition, if any acquisition theory postulates ‘optional’ representations, is there any theoretical significance in the formulation of its predictions given that any deviation from the model can be attributed to optionality? Moreover, is there any difference in terms of descriptive power between a theory which assumes functional structure with optional processes and a theory which does not assume a functional structure altogether? It appears that there is no explanatory power in the former theory.

10. Note that the structure in (20) does not presuppose that nicht is an affixal element (cf. Clahsen (1990)). The internal structure of the modal+neg element is not specified. However, head-adjunction is not the only option. In the English data which involve the use of "can’t", "don’t" and "won’t" the possibility of head-adjunction is compatible with the affixal status that the contracted form of negation has in adult language. If, however, these modal+neg combinations are initially treated as unanalysed morphophonological units, it is unlikely that a head-adjunction structure is the appropriate one. It is more plausible to assume that modal elements at this stage project from the morphological component as a single lexical element without internal structure. If this is correct, it accounts for the non-occurrence of modals in non-negative contexts. This account can be extended to the German analysis as illustrated in (20). If modals fail to occur independently it follows that the compatibility of modals and negation is encoded as a result of their corresponding semantic features being represented in terms of an incorporated morphological structure prior to the syntactic level.
11. The distinction involved is clearly not a syntactic one as both positions are adjoined to VP. Rather, the use of negation in modal and non-modal sentences is subsumed under the general claim that the two categories interact in terms of their semantic properties. If negation is used to express semantic notions such as non-existence, denial and rejection, it is only natural to assume that modality interacts with some of them but not others. For example, non-existence involves a negative assertion which pertains to the present context, thus modality is not expressed. Furthermore, modality and negation interact in terms of categories of modality and different negators.

12. ‘Subjunctive’ is used as a cover term for all clauses introduced by the modal particle ‘na’. It is not an accurate term because the class of verbs in Greek that take clausal complements introduced by ‘na’ includes verbs that are not typical in subcategorising for a subjunctive clause. As mentioned above (Ch. 2), na-clauses in Greek are used in contexts where infinitival clauses are used in English as in the former languages there do not exist non-inflected infinitives.

13. The use of the negator ‘mi’ in imperatives without the main verb is extremely common in the speech of parents or caretakers to children.

14. The agreement paradigm in imperatives does not include a third person singular/plural form:

(i) Fige
   leave-2s
figete
   leave-2p

(ii) Mi figis
   not go-2s
mi figete
   not leave-2p

15. Clearcut cases where the non-imperative interpretation is available are those where the na-clause is a complement of a verb and the sentence cannot be construed as involving indirect speech:

(i) Apofasisa na figo.
   decided-1s sub. leave-1s
   "I decided to leave."

(ii) Thelo/Pistevo na pai.
   want-1s believe-1s sub. go-3s
   "I want him to go/ I believe that he will go."

16. Within a Continuity approach the presence of a NEGP in early clause structure should, in principle, be available. This is consistent with the idea that functional structure in early grammars is similar to that of the adult language. Early data including negation have been discussed in recent analyses within the Continuity framework (see references above). The argument in most of these analyses concerns the presence of an inflectional head in the clause structure as evidenced by its interaction with the position of negation. Thus, the absence of V-raising and subject-raising in early English has been argued to account for the
initial stage in the development of negation (e.g. in the NegSVO order) (cf. Pierce & Deprez (1990)). What is not clear is why NEGP is missing at this stage and what triggers its emergence at a later stage if functional heads are not subject to maturation and if NEGP is assumed to be available in the adult language. To the best of my knowledge, none of the analyses of negation within the Continuity approach has addressed this issue.

17. Sentences with the verb ‘want’, both affirmative and negative, are not assumed to include a null modal element the reason being that modality in these cases is expressed by the main verb. The use of the verb ‘want’ in the first stage in both affirmatives and negatives is attested. In the second stage, however, this verb is used much less frequently. This is particularly suggestive given that, it is at this stage, that the use of the anaphoric negator with na-clauses is consistent.

18. It has standardly been assumed that the negative ‘mi’ is also affixal. Note, however, that its availability in imperatives where the verbal element is missing (cf. (29)) is problematic for this assumption. I will leave this question open given that it does not affect any of the arguments presented here.

19. In semantic terms, mood and modality are distinct categories (Palmer (1986)). In some cases, the interaction of these two categories as far as meaning is concerned overlaps. Note, however, that the difference between mood and modality is obvious in the interpretation that na-clauses in Greek have. In other words, the modality expressed depends on semantic properties of the matrix verb rather than the particle ‘na’. This indicates that ‘na’ has no inherent modality. Its status in the functional structure is associated with syntactic properties, e.g. Tense and negation.

The crucial point in this analysis is that the semantic distinctions associated with early negative sentences are expressed in terms of categories of modality. The emergence of a MoodP in the functional structure is assumed to be irrelevant to such distinctions. In this respect, the presence of the negator ‘mi’ in the MoodP is argued to be the result of syntactic properties associated with the head of this projection, i.e. the particle ‘na’.

20. The licensing of PPI’s is not as straightforward as with the NPI’s. Among the categories that are assumed to license PPI’s are negation, the particle ‘na’ and the Q morpheme in interrogatives (Tsimpi (1991b), Agouraki (in prep.). If negation is the licensor the presence vs absence of the [+f] feature determines the status of the PI as NPI or PPI respectively. The child data in (35) are ungrammatical in either case.

21. An alternative possibility would be to assume that these elements in child grammars are analysed as negative pronouns corresponding to the English ‘nobody’ and ‘nothing’. Note, however, that at the end of the second stage (i.e. 27;0 months), NPI’s are correctly used in negative sentences. If we assume that these elements are reanalysed as PI’s at the third stage, it is difficult to postulate any evidence that would trigger this reanalysis. As far as positive evidence is concerned, it is clearly the case that is is available throughout the process of
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