ON THE EMERGENCE OF SYNTAX: A CROSSLINGUISTIC STUDY

by

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ABSTRACT

Crosslinguistic data from child language, in both natural and experimental settings, are argued to provide confirmation of recent proposals in syntactic theory. In particular, the VP-internal subject hypothesis, the distinction between English and Romance in terms of mechanisms which accomplish inflectional affixation and the conditions on economy of derivation are successful in accounting for a broad range of developmental facts.

The early grammars of French, English and Spanish are characterized in terms of a separation between the inflectional complex and the verb phrase, containing the subject. This underlying structure is attributed to the VP-internal subject configuration and the syntactic affixation of inflectional morphology. The child grammars are found to manifest an early stage prior to the onset of derivational processes which integrate inflection and the verbal small clause.

Experimental findings on the acquisition of passives in Spanish serve as further evidence that the capacity to assign nominative case directly into the verb phrase emerges prior to the capacity for nonlocal assignment of features.

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CHAPTER 1: Introduction

It is obvious even to the untrained observer that the mastery of spoken language proceeds without strain on the part of the child, and without explicit instruction. Research on linguistic development has established that the human infant is indeed biologically predisposed to learn language. Language and language growth, however, are not typically amenable to study in the biological laboratory. It is largely by unearthing uniformities in the stages of language development, across children and across languages, that the acquisition theorist contributes to the discovery of the mind's blueprints for language.

In this dissertation, I examine data from French, English and Spanish child language, focusing on the interplay between syntactic theory and language acquisition. My central claim is that a cluster of phenomena in linguistic development are accounted for by a single, independently motivated hypothesis concerning the grammar. Namely, I assume, following a number of proposals in the recent syntactic literature, that the subject of a sentence is generated internal to the verb phrase, rather than outside the verb phrase in what is commonly thought to be the base position of the subject (e.g., Kuroda, 1986; Kitagawa, 1986; Contreras, 1987; Koopman, 1988; Fukui, 1988).

On the basis of the VP-internal subject theory and a few auxiliary assumptions, also independently motivated, fundamental patterns in the crosslinguistic acquisition of word order, verbal

inflection and negation, as well as the well known phenomenon of null subjects in early language, are accounted for. Each of these domains of syntactic development is characterized by an acquisition enigma, which I now pose.

Word order. Although French and English are generally considered to be on a par with respect to the underlying linear order of constituents and a lack of free inversion of the subject, there are striking differences between French and English child language in the domain of word order. While children acquiring English are known to depart from accepted sentential word order only rarely (Brown, 1973; Pinker, 1984), French two year-olds produce subject-final constructions in abundance (Lightbown, 1977; Clark, 1985). This salient difference between French and English child language has remained largely unexplored.

Inflectional affixation. Very early child language is distinguished by the absence of inflectional morphology, yet there is the following developmental paradox. The English speaking child is slow to acquire the impoverished inflectional system of his language, more often than not leaving out grammatical morphemes and auxiliary verbs until about the age of three (e.g., Brown, 1973). Yet the Italian or Spanish speaking child is relatively quick to learn the complex system of inflectional morphology in his language, achieving productivity in this domain before the age of two (e.g., Bates, 1976; Hyams, 1984). Since intuitive notions of complexity fail to capture the developmental facts, what notion of complexity is relevant to the crosslinguistic acquisition of inflectional morphology?

Negation. The early negated sentences of English speaking children contain negation on the left periphery of the sentence, sometimes with an overt subject below the negative marker (e.g., *No I see truck; No Mommy giving baby Sarah milk*) (Bellugi, 1967). The result is a construction that is never attested in the adult language which serves as input to the child. What leads the English speaking child to produce these novel constructions? For that matter, what leads the young German or French speaking child to produce equivalent novel constructions?

Null subjects. The phenomenon of subject omission in child language stands out as one of the most robust cases of an acquisition universal. As far as we know, no matter what language a two year-old may be learning, he will appear to treat the subject of sentences as omissible. Of course, null subjects are expected from the child learning a language, such as Spanish, in which null subjects are grammatical, which is the case in the majority of the world's languages (Gilligan, 1987). In contrast, overt subjects as required by the grammars of English and French. Nonetheless, children acquiring these languages produce utterances without subjects with striking persistence. In effect, the child exposed to English behaves in certain respects like a child learning Spanish or Chinese.

In what follows, I substantiate each of these phenomena with natural production data from French, English and Spanish child language, and provide an account in terms of a grammatical framework which incorporates the VP-internal subject hypothesis. According to this framework, and perhaps as its defining characteristic,

inflectional structure and basic clausal structure (i.e., the verb and its arguments) are divorced in underlying syntactic representation. Syntactic derivational processes which integrate them by moving the subject, the verb and the elements of inflection must be acquired and are seemingly acquired after an interim of delay.

In the pages to come, I build evidence for the hypothesis that early language has VP-internal subjects unmoved. From this follows a variety of word order distinctions between child and adult language, including subject-final order in early French, auxiliary-initial order in early English and negation-initial order in very early stages of French, English and Spanish. In addition, null subjects in French and English child language can be explained on the assumption that INFL counts as a governor and case assigner in early grammar, licensing *pro* in VP-internal subject position.

In constructing this model of early grammar, I further assume that the affixation of verbal inflection is a syntactic process which takes different forms in French and English. While verbs raise to INFL in the syntax of French, affixes lower into the VP in the syntax of English (Emonds, 1978; Chomsky, 1988; Pollock, 1989). With the exception of *be* and auxiliary *have*, there is no verb-to-INFL movement in English. Verb raising is one way in which verb-subject order in early French appears to be derived. The absence of verb-raising in English is visible in the generation of negation-initial and auxiliary-initial constructions in early speech. The failure of subjects to raise out of the VP in early grammar is attributed to the

gradual emergence of mechanisms which permute underlying structure or otherwise accomplish the nonlocal assignment of grammatical features.

The dissertation is organized as follows. In chapter two, I provide the theoretical background for the studies in child language presented in chapters three through five. In particular, I outline the VP-internal subject theory, the verb raising analysis of inflectional affixation in French, and the affix lowering analysis of inflectional affixation in English (cf. Emonds, 1978; Chomksy, 1988; Pollock, 1989). Furthermore, I bring together a group of proposals that have emerged independently in the acquisition and syntactic literature to the effect that universal grammar is biased toward minimal derivations (cf. Hyams, 1986a; Kitagawa, 1986; Chomsky, 1988; Borer & Wexler, 1988). These proposals conspire to suggest a rudimentary metric of grammatical complexity which constrains the course of acquisition. In chapter three, I present a detailed description of early French child language from the perspective of the model outlined in chapter two. In chapter four, I extend this approach to English child language, highlighting points of contrast between French and English acquisition. Chapter five examines anecdotal production data from Spanish child language, based primarily on reports in Pina (1984). The profile of acquisition constructed in chapters two through four is seen to hold up to the Spanish findings. I also discuss here the results of original experimental work on the acquisition of passives in Spanish and its relevance to the present approach. The experimental results, described in full in Appendix A, corroborate the finding of delays in the mastery of derivational

processes. In return to acquisition puzzles posed above, with some new answers, in chapter six.

Thus, I contend that crosslinguistic data from child language converge to provide impressive confirmation of the VP-internal subject hypothesis. These data also conform to the proposed distinction between English and Romance in terms of inflectional-derivational processes, as well as the principled bias in universal grammar toward minimal (in some well-defined sense) syntactic derivations. The overall picture to emerge from these studies is that verbal inflection and the verb phrase, containing the subject, are divorced at an early stage in child language acquisition, just as they are in underlying syntactic structure. The tangibility of this separation in child language is readily construed within the contemporary theoretical framework as a small window of delay in the emergence of derivational processes, namely verb raising, affix lowering and subject raising to the SPEC of IP. I argue in this way against recent suggestions in the acquisition literature to the effect that functional categories including INFL are absent in early child language (Guilfoyle & Noonan, 1988; Aldridge, 1988; Kazman, 1988), and similarly against the claim that the case filter or the case module is not functional at early stages of child language (Lebeaux, 1988; Bloom, 1988). Finally, the success of this theoretical framework in accounting for aspects of syntax acquisition lends further credibility to recent enrichments of linguistic theory. I turn now to a more detailed description of these theoretical proposals.

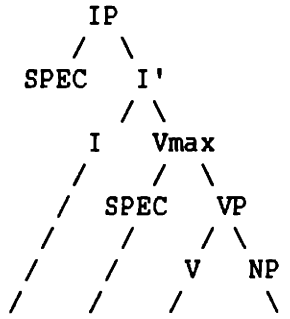
CHAPTER 2: Theoretical background

I assume the theory of grammatical principles and parameters described in Chomsky (1981) and enriched in much subsequent work, including Chomsky (1986a,b; 1988) as well as published and unpublished work by numerous others. I do not undertake a review of the fundamental postulates of the theory, as this dissertation is primarily concerned with the application of a few recent proposals to findings in child language. In what follows, I outline the theoretical apparatus particularly relevant to the present discussion.

2.1 The VP-internal subject hypothesis. A number of proposals in the syntactic literature of recent years converge on the following theme: the sentential subject in French- and English-type languages is generated within the maximal projection of the verb as the sister of an intermediate projection of the verb (Kitagawa, 1986; Contreras, 1987; Fukui, 1988; Koopman, 1988; Koopman & Sportiche, 1988 among others).[1] According to this hypothesis, the D-structure representation of the sentence in (1) is as in (2):

(1) The cat will eat the flower

(2)



will [the cat] [eat the flower]

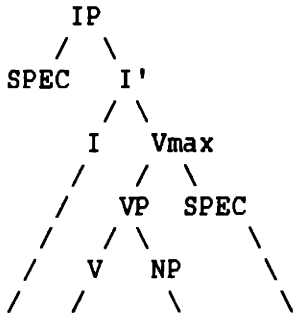
On this theory, subjects, like objects, are theta marked within the maximal projection of the verb. Generalizing over the various approaches, it is argued that subjects in English and French fail to be assigned nominative case in the VP-internal specifier position. They must raise via move-alpha to another position, specifier of IP, where nominative case can be assigned via SPEC-HEAD agreement, rather than structurally. In contrast, subjects within the VP in other languages, for instance Spanish, may be assigned case directly within the VP and are thus licensed to remain there.

The proposals differ on the question of how constituents within the VP are ordered. According to Sportiche (1988) and Koopman & Sportiche (1988), the order of constituents within the English VP is S-V-O, as in (2). Since these authors argue that the order of constituents within the VP is not determined by X-bar theory or theta theory, presumably the underlying rigid word order of English is the result of a parametric choice specifying linear order.

According to Kitagawa (1986), in contrast, the subject in English is generated as the right branching sister of V'. That is, English

has an underlying word order of V-O-S, as in (3), where raising of the subject results in S-V-O word order at S-structure:

(3)



will [eat the flower] [the cat]

In Kitagawa's model, the subject-final property of underlying structure is critical on two counts. First, it accomplishes uni-directional head government of internal and external arguments, which has been argued for on independent grounds (e.g., Stowell, 1983; Travis, 1984). Second, Kitagawa's model is motivated to account for cases of so-called extraposition in English, which conform directly to V-O-S order. For example, the sentence in (4) is analyzed on this theory as being a direct realization of the base V-O-S structure, with the pleonastic *it* base generated in [SPEC,IP] and the sentential subject generated in [SPEC,VP]:[2],[3]

(4) It [$_{VP}$ bothers me [$_{SPEC}$ that he hasn't called us yet]]

In Contreras' (1987) account, Spanish has the option to generate the subject either to the right or to the left of the verb. Because the subject can be assigned case in either position in Spanish on this account, the occurrence of both subject-verb and verb-subject word orders in Spanish is readily explained. Both orders are underived, in the sense that no constituent need move.[4] As mentioned, Koopman

(1988) also maintains that the position of the subject within the VP is variable, but "*only in languages that exhibit both orders overtly*" (p. 445). Inversion in French and Italian is taken as evidence that in those languages the ordering of the subject and the verb within the VP is not fixed, while in English it is.

Borer (1986a), although not arguing that all subjects are generated within the VP, accounts for postverbal subjects in Italian along the same lines. That is, she suggests that postverbal subjects are base generated, right branching sisters to a projection of the verb, as in (3). On Borer's account, the verbal projection assigns an external theta role directly to the subject in this position. Assuming that nominative case is assigned under government by agreement (AGR) (Chomsky, 1981), and that AGR is lowered onto the verb in the syntax, then nominative case can be assigned directly to the postverbal subject. In Borer's model, the preverbal subject position [SPEC,IP] need not even be generated under these conditions, case assignment to the postverbal subject being accomplished without the formation of a chain.

2.2 Inflectional affixation in French and English. In both the French and English systems, inflectional affixation is a syntactic process.[5] That is, the attachment of tense and agreement affixes takes place in the syntax, rather than as part of derivational morphology (cf. Emonds, 1985). Following Emonds (1978; 1985), Chomsky (1988) and Pollock (1989), I assume that inflectional affixation is accomplished differently in French and English. According to these

authors, the verb in French raises to INFL to attach to its tense and agreement morphology. In English, main verbs do not raise to INFL. Rather, inflection lowers into the verb phrase; only *be* and the auxiliary *have* undergo raising in syntax.

This formal distinction between English and French is substantiated by, among other things, the placement of negation and adverbs with respect to the verb. In French, the inflected verb regularly occurs to the left of the negative particle *pas* and VP adverbs. While auxiliary verbs in English pattern with French verbs in this respect, main verbs in English occur to the right of negation and VP adverbs:

(5) a. Le chat chasse *souvent* les oiseaux.
b. The cat *often* chases the birds.

(6) a. Le chat (ne) chasse *pas* le chien.
b. The cat does *not* chase the dog.

Assuming that the adverb is situated within the VP and that its position is fixed, examples such as (5a) indicate that the French verb has moved to some position on the left of the VP. Similarly, assuming that the position of negative *pas* within inflection is fixed, examples like (6a) show that the French verb has raised to a position above negation within the inflectional complex.

Another difference between the inflectional systems of English and French that figures in my discussion of the comparative child language data is the fact that only English has a set of modal auxiliaries which are generated within inflection. Modal verbs in French are generated in VP and raise like all other verbs. While

tense and agreement in French are always instantiated as inflectional affixes, English can realize tensed inflection in the form of a base generated modal. This leads to an interesting class of word order errors in English child language (cf. section 4.4), errors which do not arise in the acquisition of French.

Finally, I adopt the proposal that tense and agreement head separate projections, contributing to a highly detailed representation of the inflectional complex (cf. Chomsky, 1988; Pollock, 1989). In the most articulated version of this proposal, there are two agreement projections, one below the projection of tense and one above it (Chomsky, 1988). The lower AGR functions in recent analyses of participle agreement in Romance (cf. Kayne, 1987), and of raising of nonfinite verb forms (cf. Deprez, 1988; Pollock, 1989). The higher AGR governs and assigns nominative case to the (VP-external) subject and thus functions in standard subject-verb agreement.

2.3 **The economy of derivation framework.** In contemporary syntactic theory, considerations of acquisition go hand-in-hand with considerations of crosslinguistic viability of the theory. The parameters which constrain structural variation among languages also constrain theories of syntactic development. In addition, specific conditions on derivations that have been proposed recently, particularly in the writings of Chomsky (1986b; 1988), are formulated with the language learner in mind. A prime example is the vacuous movement hypothesis, discussed in Chomsky (1986b). This principle states that vacuous movement, as in the case of wh-subject questions

(e.g., *Who chases birds?*), is not obligatory at S-structure, although it is at the level of logical form. The justification for this hypothesis is that "*the language learner assumes that there is syntactic movement only where there is overt evidence for it*" (Chomsky, 1986b, p. 50), where presumably "overt evidence" refers to permutations in word order.

In a similar vein, Chomsky (1988) proposes a set of least effort guidelines. Taken as a UG condition on derivations, the principle of least effort insures that syntactic derivations are minimal in cost, where cost is defined, at first approximation, in terms of number of steps in a derivation and, in more subtle terms, as the extent to which language specific principles are invoked in a derivation.

> ...the "least effort" condition must be interpreted so that UG principles are applied wherever possible, with language-particular rules used only to "save" a D-structure yielding no output... UG principles are thus "less costly" than language-specific principles. We may think of them, intuitively, as "wired-in" and distinguished from the acquired elements of language, which bear a greater cost. (Chomsky, 1988, p. 9)

Chomsky (1988) employs the least effort condition in arguing that verb raising to INFL, for the purpose of affixing inflectional morphology, is necessary where possible and preferred in the relevant sense to the process of affix lowering. Verb raising is a one-step process, while affix lowering is a two-step process in that it yields an improper chain, necessitating movement of the stem+affix constituent to INFL at LF (hence, the second step). An example of a subtler notion of derivational cost is found in the explanation for why *do*-insertion in unemphatic declarative sentences (e.g., **The cat*

did chase the dog) is ruled out. Supposing that *do*-insertion is a language particular rule, as seems to be the case, it may be used only as a last resort to recover an illegitimate derivation. It fails to apply otherwise.

Conditions similar to the economy of derivation have emerged elsewhere in the recent literature. Kitagawa (1986), for example, proposes an isomorphy constraint, which "*permits the application of Move-alpha if and only if principles of grammar... require it*" (p. 244). Hyams (1986a) proposes an isomorphism principle which defines grammatical simplicity in terms of a high degree of isomorphism between the various levels of grammatical representation. She suggests, further, that an initial parameter setting is always one which yields the simplest grammar defined in these terms. An analogous idea has surfaced in discussions of syntactic maturation. According to Borer & Wexler (1988), the early grammar is characterized by bi-uniqueness, where maturation entails "*a gradual reformulation of bi-unique relations*" (p. 33). One form that bi-uniqueness takes in Borer and Wexler's model is an inability on the part of the early grammar to carry out nonlocal assignment of grammatical features (cf. Borer & Wexler, 1987). The absence of the copulative passive from early English and Hebrew child language, for example, is attributed to the absence of A-chains from early grammatical representation.

These are some of the precedents for extending the least effort condition to, and testing it against, language acquisition phenomena. If this condition is in fact a principle of UG, then it follows that the child knows it, i.e. that it is "wired-in". The child, like the

adult, will assume the shortest derivations licensed by his grammar, the shortest derivation in the extreme case being no derivation. The example of the vacuous movement hypothesis is relevant in this regard.

Another motivation for reinterpreting the economy of derivation guidelines in acquisition-theoretic terms -- in particular, the notion of cost that relates to language-specific rules -- concerns the analogous distinction between core and peripheral systems (Chomsky, 1981; 1986a). Core grammar is generally understood as the sum of the principles and parameters of UG, as apart from peripheral linguistic phenomena which constitute marked exceptions to or relaxations of the conditions of core grammar. Core and peripheral systems are predicted to develop in different ways (Chomsky, 1981). In particular, the parameter setting mechanisms of language acquisition by definition constrain the core and not the periphery.

In a very interesting paper, Hyams (1986b) invokes this distinction to explain certain crosslinguistic findings in the development of inflectional affixation. She observes that, while English speaking children are slow to acquire the limited inflectional morphology of their language, Italian speaking children are quick to learn the complex system of inflectional affixation in their language. This acquisition paradox was mentioned in chapter one. Clearly, intuitive notions of complexity fail to capture the developmental facts. Rather, Hyams argues, the relevant notion defines complexity in terms of deviation from the core grammar. That is, the elaborate, highly visible, system of inflectional morphology in Italian plants inflection firmly in the core grammar of Italian; the same holds, for

example, of Spanish. The impoverished system of agreement morphology in English, and in particular the fact that a verbal stem constitutes a well-formed word, relegates inflection to the periphery of English grammar; the same holds, for example, of French. Given Hyams' theoretical metric of complexity, according to which core mechanisms are acquired prior to marked or peripheral ones, the late acquisition of inflectional morphology in English relative to Italian is explained.

Merging the distinction between core and periphery with the distinction between nonparametric (hard-wired) and parametric principles of UG yields a three-tier system of degrees of variation within the grammar:

(7)
degree 0 = nonparametric universal principle
degree 1 = parametric principle
degree 2 = peripheral exception to core grammar

Though my discussion of the child language facts from this perspective is highly speculative, I attempt in the chapters to come to point out where the various notions of derivational cost, such as that in (7), successfully predict delays in the emergence of derivational processes in French, English and Spanish. As we saw, late acquisition of inflectional morphology in English is successfully predicted according to two such measures. As Hyams (1986b) shows, the core-periphery distinction can account for this delay. Following Chomsky (1988), this delay is also predicted according to the relative number of derivational steps; while verb raising to INFL in Romance

involves only one step, affix lowering to the verb in English involves two.

The intuitive idea is that the grammar is innately biased toward derivational minimalism, defined following Chomsky (1988) and others in terms of deviation both from universal grammar and from D-structure. The child's initial assumption is that move-alpha does not apply. He relaxes this bias only in the face of overt or salient evidence of movement, as he acquires lexical items which trigger movement, as the acquisition of one derivational process necessitates another, or perhaps as he matures. In the scheme of the present work, the UG bias toward derivational economy accounts for the D-structure quality of child language and, in particular, for the preservation of the underlying position of the subject in early language.

2.4 Other issues. The analysis of French subject pronouns as inflectional clitics at S-structure (cf. Kayne, 1975; Jaeggli, 1982) underlies my account of the distribution and development of subject pronouns in French child language.

The status of the class of subject pronouns in French known as weak forms (*je, tu, il, elle, nous, vous, ils, elles, on, ce*) is controversial. Kayne (1975) and Jaeggli (1982), for example, assert that these elements are syntactic clitics, lacking the status of independent morphemes. Others argue that while these elements may be clitics at the level of phonological form, they are in argument ([SPEC,IP]) position in the syntax (e.g., Burzio, 1986; Rizzi, 1986b; Brandi & Cordin, 1989). I briefly review the arguments on both sides.

Jaeggli (1982), essentially following Kayne (1975), points to five environments in French syntax in which subject clitics behave differently from strong form pronouns and lexical subjects. First, nothing, with the exception of other clitics, can intervene between the subject clitic and the verb, even if demarcated by pauses:[6]

(8)
a. *Il, souvent, va au cinema
He/Jean, often, goes to the movies
b. Jean, souvent, va au cinema

Second, subject clitics cannot be conjoined, whereas lexical subjects can:

(9)
a. *Jean et je voulons aller au cinema
Jean and I want to go to the movies

b. *Ils et elles veulent partir en vacances
They (masc.) and they (fem.) want to take a vacation

c. Jean et Marie veulent partir en vacances
Jean and Marie want to take a vacation

Third, these clitics cannot be modified, whereas disjunctive (strong form) pronouns can:

(10)
a. *Ils tous partiront bientot
All of them will leave soon
b. Eux tous partiront bientot

Fourth, subject clitics are never contrastively stressed, whereas disjunctive pronouns are:

(11)
a. *Il partira le premier
He will leave first
b. Lui partira le premier

Finally, subject clitics do not occur in other NP positions:

(12)
a. *J'ai acheté ça pour tu
I bought this for you
b. J'ai acheté ça pour toi

Based on these observations, Jaeggli contends that subject clitics are not generated in subject position but rather in INFL, hence their obligatory closeness to the tensed verb.

Arguments to the opposite effect focus on a different set of facts, in which the behavior of subject clitics in French contrasts with that of subject clitics in certain Northern Italian dialects (e.g., Piedmontese, Trentino and Fiorentino). It has been argued that subject clitics in the Northern Italian dialects represent a spelling-out of agreement (Burzio, 1986; Rizzi, 1986b; Brandi & Cordin, 1989, among others). Among the central points raised against viewing subject pronouns in French in the same light are the following. First, while subject clitics co-occur with lexical subjects in the Italian dialects, they do not in standard French:[7]

(13)
a. Trentino: El Gianni el magna
John he eats
b. French: *Jean il mange

Note that the sentence in (13b) is acceptable as a left dislocation, as I discuss further below. Second, while French subject clitics can be predicated of a conjunction of VPs, subject clitics in the dialects cannot; the subject clitic must be repeated in the second conjunct:

(14)

a. Trentino: La canta e la balla
She sings and she dances
b. French: Elle chante et elle danse

c. Trentino: *La canta e balla
She sings and dances
d. French: Elle chante et danse

Third, subject clitics in French precede the negative clitic *ne*, while other clitics follow it. In contrast, the subject clitic in Trentino occurs to the right of the equivalent negative, *no*:[8]

(15)

a. Trentino: No la ghe l'ha dit
She has not said it to him

b. French: Elle ne les aime pas/*Ne elle les aime pas
She doesn't like them

Finally, while the subject clitic is generally obligatory in the dialects, so that lexical subjects and clitics co-occur, lexical and clitic subjects in standard French are in complementary distribution. Compare (13) and (16):

(16)

a. Trentino: *El Gianni magna
Jean eats
b. French: Jean mange

I turn now to a view of these facts in light of the distribution of subject clitics in spoken (or nonstandard) French, as discussed in the typological and functional linguistic literature. The description of subject clitics from this perspective, it will be shown, best captures their distribution in French child language. I elaborate on this issue in sections 3.5 and 4.6.

Givon (1976) argues against the traditional view that agreement and pronominalization represent two distinct processes. He writes:

> The morphological binding of the pronoun to the verb is an inevitable natural phenomenon, cliticization, having to do with the unstressed status of pronouns, their decreased information load and the subsequent loss of resistance to phonological attrition. The reanalysis process...is widely attested in non-standard dialects of English and French, where the subject pronouns are in the process of becoming obligatory subject-agreement markers. (Givon, 1976, p. 155)

With respect to French, a similar view has been expressed by a number of other linguists studying the spoken language (cf., among others, Harris, 1976; Larsson, 1979; Lambrecht, 1981; Barnes, 1985; Ashby, 1988).

The purported demotion of subject pronouns in French to inflectional affixes, which surface attached to the tensed verb, has the result that these clitics can co-occur with other subject NPs in colloquial French.[9] According to Lambrecht (1981), Barnes (1985) and others, sentences containing both the subject clitic and an NP subject on the right or left periphery of the sentence occur quite frequently in spoken French. Sentences like (13b) and those in (17), the so-called left dislocations, are particularly common (Ashby, 1988):[10]

(17)

a. Moi je bois énormément
   Me I drink enormous quantities

b. Ta soupe, elle arrive rose.
   Your (fem.) soup, it (fem.) arrives pink

According to Barnes (1986) and others, left dislocation is an essentially pragmatic phenomenon, in that the left-dislocated element usually represents a discourse topic or is being emphasized. In

contrast to left dislocations, which tend to be pragmatically and prosodically marked, right dislocations are described as being unmarked in the relevant sense. According to Larsson (1979) and Lambrecht (1981), right dislocated elements do not in general serve a contrastive or emphatic function, and they tend to be prosodically integrated into the rest of the sentence. Here are a few examples of right dislocations that I have noted in adult speech:[11]

(18)

a. Il est bien petit ce collier
It$_i$ is pretty small this necklace$_i$

b. Ça fait mal le bout
That$_i$ hurts the end$_i$ (referring to a pencil point)

c. Ils vont pas rentrer les autres
They$_i$ won't go back the others$_i$

d. Non, ça brule pas la fumée
No, that$_i$ doesn't burn (one) the smoke$_i$

e. Il s'est caché le chat
He$_i$ hid (himself) the cat$_i$

Chapter three is addressed in part at the question of what the French-speaking child makes of input like (18), in the absence of any pragmatic or prosodic marking. Since there is supposedly no overt indication to the child to treat these structures as peripheral exceptions to core conditions on word order, it would not be surprising to find that the child's own grammar accommodates these structures. On the basis of natural production data from French child language, I argue in chapter three that this is indeed the case. There is strong evidence both that (A) subject clitics are in nonargument position in French child language and (B) postverbal subjects are formally accommodated (i.e., generated) by the French

child's grammar. Indeed, as mentioned above, many have argued that postverbal subjects in adult spoken French are not dislocated elements. Finally, the fact that the child's grammar incorporates these structures may itself be a force in the direction of change in French grammar that many linguists have remarked upon.

2.5 Conclusion. The central premise of this study is that the subject is generated internal to the VP. From this follows a broad range of developmental facts, examined in the next three chapters. I begin the analysis of the data with the problem of word order variability in French child language. From the preceding discussion, it should be apparent that there are actually three ways to represent verb-subject order in early French language. Given verb raising to INFL, V-S order might result from underlying S-V order in conjunction with the leftward movement of the verb. Alternatively, V-S order might be a direct manifestation of underlying order, along the lines of Kitagawa's (1986) model. Finally, assuming in conformity with Koopman (1988) and others that the order of constituents within the VP is not fixed, V-S order might instantiate one of two possible underived orders in early French.

-- Notes --

1. The VP-internal subject hypothesis was a focus of David Pesetsky's class lectures during the Fall of 1988, MIT. My interest in and discussion of this topic owes much to those lectures.

2. This example is from Kitagawa, 1986, p. 239.

3. An obvious question is what rules out other non-applications of subject raising, as in "**It will eat the flower the cat*"? Kitagawa argues that the case filter rules out such cases on the assumption that the verb does not normally assign case to internal subjects.

4. Contreras assumes that inflectional affixation is accomplished via affix lowering in Spanish and English, entailing that the verb does not raise to INFL.

5. Chomsky (1981) formalizes affix lowering in English as applying post-syntactically, at phonological form, in contrast to the position assumed here.

6. All examples in (7) through (11) are from Jaeggli (1982), p. 90-92.

7. The Trentino examples in (13), (14) and (16) are from Rizzi (1986b). That in (15) is from Brandi & Cordin (1989).

8. Brandi & Cordin (1989) note that subject clitics in Fiorentino can occur either to the left or the right of the negative clitic.

9. It should be noted here, as clarified by Barnes (1985), that terms like *nonstandard French* have generally been used, and specifically in Lambrecht (1981), to denote spoken as opposed to written French -- and not to refer to a particular dialect. Barnes' own work is based on the study of French that is *"spoken by educated people in informal situations"*.

10. The examples in (16) are transcribed adult utterances from Barnes (1985).

11. These examples come from the transcriptions of parental speech in the French database (Suppes, Smith & Leveille, 1973) that is available on the CHILDES system (MacWhinney & Snow, 1985).

CHAPTER 3: Structural properties of French child language

3.1 Introduction. In this chapter I discuss certain structural properties of French child language, phenomena which cluster naturally in a framework for syntactic development incorporating the theoretical assumptions outlined above. Specifically, the co-occurrence of postverbal subjects and null subjects is shown to follow from underlying VP-internal structure. In addition, we witness in the case of one child a clear transition from a pre-verb raising stage to a stage of productive verb raising. This transition coincides with a shift from predominant subject-final word order to predominant subject-first word order. Overall, verb raising is established relatively early in French child language (i.e, sometime before the age of two years), as evidenced by contingencies between the placement of negation and tense, as well as between subject clitics and tense. The results presented here are based on the productions of three monolingual French-speaking children: Philippe, Nathalie and Daniel. All data are from audiotaped spontaneous speech, collected and transcribed by other researchers.[1]

This chapter is organized as follows. The next section presents data on the distribution of postverbal and other subjects in early French child language, as well as data on the differing distribution of finite and nonfinite verbs. In section 3.3, I discuss properties of the input that may be relevant to the child's production of postverbal subjects. In 3.4, I postulate that postverbal subjects are

VP-internal subjects and explore some of the consequences of this approach. Section 3.5 considers the status of subject pronouns in French, as it relates to the VP-internal subject hypothesis, postverbal subjects and the delayed emergence of subject raising.

3.2 Facts about French child language. An overview of the data. Table 1 in Appendix B represents all of the French child utterances examined, a total of 2053 sentences, according to the type of subject (i.e., postverbal, preverbal lexical, pronominal and null), and whether the verb was finite or nonfinite. Tables 2 and 3 in Appendix B display the same overall distribution of sentences separately for two time periods I will refer to as T1 and T2.[2]

The following general points emerge in examining Tables 1 through 3. Note in Table 1 that there are twice as many postverbal subjects as preverbal lexical subjects overall. As Tables 2 and 3 make clear, the proportion of postverbal subjects overall is considerably larger at T1 than at T2. At the earlier stages, postverbal subjects account for 21% of all utterances and 78% of all lexical subjects. At T2, postverbal subjects account for only 5.4% of all utterances, and 38% of lexical subjects. At the same time that frequency of postverbal subjects decreases, so does the number of nonfinite verbs, from 48% overall at T1 to 19% overall at T2. The rate of subject omission also decreases, but less drastically, from 49% at T1 to 36% at T2. Overall, null subject utterances account for 43% of the data.[3] It is also clear in Tables 2 and 3 that the proportion of pronominal subjects increases substantially from T1 (25%) to T2 (50%). Let us

take a closer look at each of these areas of change: postverbal subjects, null subjects, inflection, and pronominal subjects.

Postverbal subjects. In previous work in the area of subjects in acquisition, in which I compared the phenomena of subject omission in French and English child language, I discussed a set of utterances which appeared to distinguish the grammars of the two language populations (Pierce, 1987). The French-speaking child I studied produced a considerable number of postverbal subjects, while such word order errors do not generally arise in the speech of a child acquiring English. Though there are exceptional reports of children who produce many postverbal subjects (e.g., Gruber, 1967), most English-speaking children observed produce remarkably few.[4] The research for this dissertation was largely motivated as an attempt to provide a syntactic account for the wealth of postverbal subjects produced by children acquiring French.

There are an impressive number of postverbal subject constructions in the speech of the three children studied. A few examples from each child are shown in (1) through (3):[5]

(1) Nathalie

a. pas manger la poupée (N1)
(*not eat the doll*)

b. tomber papa (N4)
(*fall papa*)

c. assis la poupée (N4)
(*seated the doll*)

d. est a poupée le couteau (N6)
(*is the doll's the knife*)

e. manger maman (N6)
(*eat mama*)

f. dormir bébé (N4)
(*sleep baby*)

(2) Philippe

a. est chaud camion (P2)
(*is hot truck*)

b. fait du bruit la fille (P2)
(*makes noise the girl*)

c. travaille papa (P3)
(*works papa*)

d. est froid le camion (P2)
(*is cold the truck*)

e. veux tourner moi (P3)
(*want to turn me*)

f. écrit Madeleine (P4)
(*writes Madeleine*)

(3) Daniel

a. bois peu moi (D1)
(*drink little me*)

b. pleure clown (D2)
(*cries clown*)

c. tout mangé Patsy (D2)
(*ate all Patsy*)

d. plait pas monsieur (D3)
(*don't like the male doll*)

e. est tombé papachou (D4)
(*fell the papa doll*)

f. dormir petit bébé (D5)
(*sleep little baby*)

The letter and number at the end of each sentence encode the child and stage at which a given utterance was produced. Table 4 in Appendix B lists the age, mean length of utterance,[6] total number of sentences analyzed and number of postverbal subjects produced at each stage for each child. Unless otherwise noted, all of the analyses I have performed consider only decipherable verb-containing, non-interrogative utterances. Each utterance was further determined from discourse context to be non-imperative and spontaneous, i.e., not an immediate imitation or reduction of a previous adult utterance.

Consider the information in Table 4. Given that postverbal subjects in simple declarative sentences are not licensed in adult French, the observation that children acquiring the language produce them at early stages in as much as 44% of their utterances is quite remarkable. Even if the child Nathalie is exceptional in the extent

of this tendency, the more moderate production of postverbal subjects in the speech of Philippe (up to 26%) and Daniel (up to 15%) is still noteworthy.

Other developmentalists studying French child language report extensive variability in word order, including Bloch (1924), Sabeau-Jouannet (1975) and Sinclair (1973). Clark (1985), in a review chapter on the acquisition of Romance, sums up a brief section on word order errors in French acquisition as follows:

> The acquisition data available so far suggest that word order at the two-word stage and even later... is very variable, especially with intransitive verbs. SV and VS are both common. With transitive verbs, some children appear to stick more closely to a canonical SVO order, while others appear to move the subject noun rightwards (VOS). (p. 711).

Lightbown (1977) devotes a good deal of attention to the use of nonstandard, subject-final word order in Nathalie's early speech. She graphs the different proportions of this word order for transitive and intransitive verbs for Daniel and Nathalie (reproduced in Figure 1 of Appendix B), showing greater use of the inversion strategy with intransitives. Particularly interesting is the abrupt transition in the course of Nathalie's development from use of intransitive verbs only at NI, with a strong preference for verb-subject order, to far more extensive use of transitives and subject-first word order at later stages. Lightbown writes:

> In her almost exclusive use of intransitive action relations in NI-NIII, word order was more often non-standard than standard. When she began to produce transitive action relations, however, standard word order predominated. Following the emergence of transitive relations with standard word order, the utterances

> expressing intransitive relations began to conform more often to the standard... (p. 115)

Daniel and Philippe do not undergo an abrupt shift in predominant word order, as is clear from the numbers in Table 4. The percentage of postverbal subjects in Philippe's speech decreases gradually, while nonstandard word order in Daniel's speech is moderate from the start. It is naturally predicted that if transcripts of Daniel's speech at more advanced stages were available, they would reveal the eventual elimination of this strategy.[7]

The ratio of postverbal subjects to lexical (nonpronominal) subjects overall is shown in Table 5. While lexical subjects are produced relatively infrequently, they occur significantly more in postverbal than in preverbal position in all children for some period. At an early stage, 96% of Nathalie's lexical subjects are postverbal. For Philippe, the percentage of lexical subjects that are postverbal peaks at 100% and for Daniel, at 74%.

In examining the early stage in which postverbal subjects are common, another characteristic of the French children's utterances is immediately apparent. Namely, a substantial number of verbs produced at this time are infinitives, with both pre- and postverbal subjects.[8]

(4) Nathalie

	postverbal subjects	preverbal subjects
finite	a. lit maman (N4) (*reads mommy*)	e. poupée doit faire dodo (N6) (*doll must go to sleep*)
	b. mets le manteau maman (N6) (*puts on the coat mommy*)	f. Tally voit l'auto (N6) (*Tally sees the car*)
nonfinite	c. promener bébé (N2) (*walk baby*)	g. encore la poupée manger (N1) (*again the doll eat*)
	d. encore manger la poupée (N2) (*again eat the doll*)	h. la poupée dormir (N4) (*the doll sleep*)

(5) Philippe

	postverbal subjects	preverbal subjects
finite	a. est tombé moi (P1) (*is fallen me*)	e. le disque est fermé (P1) (*the record is closed*)
	b. fait du bruit la voiture (P2) (*makes noise the car*)	f. papa travaille (P2) (*daddy works*)
nonfinite	c. peigner tout seul Philippe(P2) (*comb by self Philippe*)	g. papa réparer le tracteur(P1) (*daddy fix the tractor*)
	d. vider la terre moi (P2) (*clear the ground me*)	h. Michel dormir là (P3) (*Michel sleep there*)

(6) Daniel

	postverbal subjects	preverbal subjects
finite	a. pleure pas garcon (D1) (*cries not boy*)	e. garcon pleure (D1) (*boy cries*)
	b. mord moi (D4) (*bites me*)	f. bebe veut papa (D5) (*baby wants daddy*)
nonfinite	c. ranger moi (D1) (*(ar)range me*)	g. monsieur conduire (D1) (*man drive*)
	d. casse celui-la (D2) (*broken that one*)	h. tracteur casser maison (D4) (*tractor break house*)

Note that there is a contingency overall between the placement of the subject and tense, where a greater proportion of postverbal subjects occur with nonfinite verbs than do preverbal subjects (X_{obs}^2 = 15.48, p = .0001):

(7)

	[+finite]	[-finite]
postverbal subject	109	163
preverbal subject	89	59

In fact, for the child Nathalie postverbal subjects occur almost exclusively with nonfinite verbs, as seen in Table 1, while preverbal lexical subjects are equally distributed over finite and nonfinite clauses. The correlation between nonfinite verbs and postverbal subjects in the Nathalie corpus is .924 (cf. Figure 2b in Appendix B). For the Philippe corpus, the equivalent correlation is .832 (cf. Figure 2a).[9] This outcome is one factor which might be argued to rule out an analysis of postverbal subjects that attributes V-S order to

the raising of the verb from an underlying S-V configuration. However, a closer look at the data reveals that the relationship between tense and the placement of the subject is more likely that they are both contingent upon age; contingencies along the lines of (7) calculated separately at T1 and T2 were not significant. Rather, it appears as though moth finite inflection and preverbal subjects increase as a function of age.

Null subjects. A substantial number of utterances at this time (43% overall) lack subjects altogether, as in the following examples.

(8) Nathalie

a. tomber (N1)
(*fall*)

b. veut pas lolo (N2)
(*wants not water*)

c. pas manger (N2)
(*not eat*)

d. est pas gros (N6)
(*is not big*)

(9) Philippe

a. lancer la balle (P1)
(*throw the ball*)

b. est cassé (P1)
(*is broken*)

c. avant veux chocolat (P2)
(*before want chocolate*)

d. chercher les crayons (P4)
(*look for the crayons*)

(10) Daniel

a. boit (D3)
(*drinks*)

b. dormir tout nu (D4)
(*sleep all naked*)

c. cherché une autre tasse (D4)
(*look for another cup*)

d. veut lait (D5)
(*wants milk*)

As mentioned above, the rate of null subjects decreases somewhat from T1 to T2. Note further that the correlation matrices in Figure 2 signal positive correlations between null subjects and nonfinite tense for all children. How should this finding be interpreted? All that

this means is that null subjects are occurring at the same time that nonfinite verbs are. It does not entail that null subjects necessarily occur in nonfinite clauses. In fact, a simple count of the relevant data reveals that null subjects overall occur equally distributed between finite (N = 422) and nonfinite (N = 450) clauses.

I argue below (cf. section 3.4) that the licensing of null subjects in early French language can be explained on the basis of the VP-internal subject hypothesis. I assume, following Rizzi (1982; 1986a), Koopman & Sportiche (1988) and others, that the licensing conditions for *pro* in subject position overlap with the domain of nominative case assignment. As such, the licensing of null subjects is a direct outcome of the assignment of nominative case to the internal subject position.

Inflection and the placement of negation. As Weissenborn (1988a,b) points out, French-speaking children appear to make the correct generalization very early on concerning the placement of the negative particle *pas*. That is, negatives in tensed clauses are consistently placed to the right of the verb, while negatives in untensed clauses are placed on the left of the verb. This generalization correctly describes the placement of *pas*, as well as negative *plus*, in the speech of the three children studied here.[10] Some examples of the data are given in (11):

(11)

[-finite]	[+finite]
a. pas manger la poupée (N2) (*not eat the doll*)	g. Patsy est pas là-bas (N6) (*Patsy is not down there*)
b. pas tomber bébé (N4) (*pas fall baby*)	h. veux pas lolo (N4) (*want not water*)
c. pas casser (D1) (*not break*)	i. marche pas (D2) (*works not*)
d. pas attraper une fleur (D2) (*not catch a flower*)	j. me plait pas monsieur là (D5) (*pleases me not the doll*)
e. pas chercher les voitures (P1) (*not look for the cars*)	k. est pas mort (P2) (*is not dead*)
f. pas rouler en vélo (P3) (*not roll on bike*)	l. trouve pas (P3) (*finds not*)

Negative *pas* is placed correctly at the earliest observed stage. Highly significant across all three children at all ages, [+/-finite] determines the distribution of the negative marker (X_{obs}^2 = 218.33, p = .0001):[11]

(12)

	[+finite]	[-finite]
sentence-initial NEG	11	77
non-initial NEG	185	2

Let us consider this particular contingency at T1 (X_{obs}^2 = 124.10, p = .0001):

(13)

	[+finite]	[-finite]
sentence-initial NEG	7	64
non-initial NEG	82	1

and at T2 (X_{obs}^2 = 81.42, p = .0001):

(14)

	[+finite]	[-finite]
sentence-initial NEG	4	13
non-initial NEG	103	1

Nathalie at N1 lacks tensed verbs and so all negatives occur sentence initially. This accounts for 50 of the 64 items under [initial NEG, -finite] of T1. Daniel at first observation uses some tensed verbs, correctly placing the negative to the right of the tensed verb and to the left of the infinitive. In T2, most clauses are overtly tensed. There are strikingly few errors in the placement of NEG overall (a total of 13).

As Weissenborn (1988a,b) argues, these data indicate that the child has access to the mechanism of verb raising. It must be the case, therefore, that tensed INFL is available as a landing site for verb movement. Recall the discussion in chapter two concerning the analysis of inflectional affixation in French. Following Emonds (1978), Chomsky (1988) and Pollock (1989), I assume that all finite verbs in French raise to inflection, where they join with tense and

agreement affixes. One of the stronger sources of evidence for this process in adult French is the contrastive distribution of negatives and adverbs in tensed and untensed clauses.

In Pollock's model, NEGP is a projection of negation that is situated above VP and below IP (the projection of tense). Since infinitival clauses do not involve raising to tense, negation-verb order follows.[12,13] With raising of the verb to tense, verb-negation order follows. The French child's behavior with respect to negation suggests early mastery of the verb-raising rule. Yet the absence of inflected forms in the very early stages, particularly visible in the child Nathalie, along with predicted *pas*-infinitive order, supports Pollock's general picture of underlying clausal structure. These data also conform to the well known findings for English child language, discussed in chapter four. As we will see, the NEG-initial stage persists in English child language due to the absence of verb raising in English, and the delayed emergence of subject raising.

In Nathalie at T1, then, we catch a glimpse of a stage in French acquisition before verb raising to tense sets in. In Daniel and Philippe at T1, we see a stage in which such raising is presumably optional. By T2, which is still fairly early on (i.e., about the age of two), the children have for the most part mastered obligatory verb raising to tense.

Inflection and subject clitics. Unlike postverbal subjects in early French language (cf. examples (1) through (6) above), right dislocation constructions, which contain a preverbal pronoun and a

postverbal lexical subject, occur exclusively with finite verbs. Note, for example, the consistent negative correlation between right dislocations and nonfinite tense in the correlation matrices in Figure 2. More striking is the following contingency table, summarizing over all children at all ages (X_{obs}^2 = 112.99, p = .0001):

(15)

	[+finite]	[-finite]
postverbal subjects	109	163
right dislocations	111	1

This result is just as significant when calculated separately for T1 and T2. It is quite clear that the contrast between postverbal subject constructions and right dislocations is due to constraints on the distribution of subject pronouns. The sentences in (16 a,b,c) represent typical utterance types, whereas those in (16d) occur extremely infrequently, presumably as performance errors:[14,15]

(16)

a. [null subject, +finite]

va chercher l'auto (N6)
(*go to look for the car*)

veux donner poupée myamyam (N6)
(*want to give doll food*)

boit cafe (D1)
(*drinks coffee*)

fait un autre (D1)
(*did another*)

est tombée (P1)
(*is fallen*)

porte un camion, voilà (P2)

b. [null subject, -finite]

voir l'auto papa (N6)
(*see car of daddy*)

écrire (N6)
(*write*)

sortir là (D1)
(*go out there*)

chercher un autre (D1)
(*look for another*)

emmener l'autre (P1)
(*bring the other*)

vider la terre au camion (P2)
(*clear the ground for the truck*)

c. [pronominal subject, +finite]

il est pas la (N6)
(*it is not there*)

et je veux (N6)
(*and I want*)

elle dort (D1)
(*she sleeps*)

c'est tartine (D1)
(*it's cracker*)

on marche a l'école (P1)
(*we walk to school*)

elle tombe (P2)

d. [pronominal subject, -finite]

(*)je chercher l'auto
(*I (to) look for*)..

(*)il voir un camion
(*he (to) see a ...*)

(*)je sortir
(*I (to) go out*)

(*)elle dormir
(*she (to) sleep*)

(*)il vider la terre
(*he (to) clear...*)

(*)ça etre la
(*that be there*)

The contingency between subjects pronouns and tense is as striking a result as that between the placement of negation and tense. The constraint on pronouns to occur only with tensed verbs stands out against the equal distribution of null subjects in tensed and untensed clauses (X_{obs}^2 = 469.28, p = .0001):

(17)

	[+finite]	[-finite]
null subjects	422	450
pronominal subjects	739	22

This is another form of proof that children are making a principled distinction between tensed and untensed forms. Only verbs which raise to INFL (tense) distribute with subject pronouns. It follows that sentences such as those in (16c) above are derived via verb raising. Since I argue in section 3.4 that nominative case can be assigned to the subject of an apparently nonfinite clause, the principle behind the distinction cannot be case-related. Rather, I suggest that the near absence of structures like those in (16d) is evidence that subject pronouns in French child language are generated in inflection (specifically, in AGR) as syntactic affixes. This proposal is the subject of section 3.5.

A glance at Italian child language. In summary, we have seen above that French child language is characterized by postverbal subjects, null subjects and relatively early establishment of the verb raising rule, as evidenced by the contingencies between the placement of negation and tense and the occurrence of a subject clitic and tense. It is interesting to note that the overall distribution of utterances in early French language is quite similar to patterns which emerge in the study of Italian child language. Bates (1976) presents figures, based on two children, which describe the extent of the various permutations of subject-verb-object word order in Italian

child language.[16] In Table 6 of Appendix B, I retabulate her data to determine the relative usage of postverbal, preverbal and null subjects early on.

For the child Claudia up to (1;9) (MLU of 3.7), 72.7% of overt subjects appear in postverbal position. For Francesco up to (2;0) (MLU of 2.25), 77% of overt subjects appear in postverbal position.[17] Overall, the Italian children show a pronounced preference for subject omission: for the child Claudia up to (1;9), 75.6% of her verb containing utterances lack overt subjects; for Francesco up to (2;0), 72.6% lack overt subjects. These figures are thus generally comparable to the findings for subject distribution in French child language.

Before turning to a detailed description of the French child's grammar, I discuss previous approaches to the postverbal subject facts and the potential role of linguistic input in leading the French speaking to produce an abundance of subject-final constructions.

3.3 **On the role of the input.** How is the sizable number of postverbal subjects in French child language to be accounted for? There is a long history to the discussion of word order variation in the French acquisition literature. The traditional view has been that children producing sentences like those in (1) through (6) are simultaneously dropping the true subject and producing a right-dislocated (extrasentential) constituent. Guillaume (1927) writes:

> If [the child] says 'Fermee la fenetre' [= Closed the window], it is because he is imitating 'Elle est fermee, la fenetre' [=It is closed, the window].[18]

Clark (1985) also emphasizes the role of adult right dislocation structures in leading children to use postverbal subjects, noting that evidence regarding the intonation pattern of such constructions is crucial to determining whether they are truly word order errors, or pragmatically governed variations as in adult speech, or merely sequences of single words.

Indeed, there are a moderate number of right dislocations in speech of Nathalie's, Daniel's and Philippe's parents. In (18) are some examples:[19]

(18)

Mother of Nathalie

(a) Elle va avoir froid, la poupée.
(She'll be cold, the doll)

(b) Oui, elle fait dodo, la poupée.
(Yes, she goes to sleep, the doll)

Mother of Philippe

(c) Ça saute pas les bateaux
(That doesn't jump boats)

(d) Il est gros ce petit ventre.
(It is big this little belly)

Father of Philippe

(e) Il s'est caché le chat.
(He hid (himself) the cat)

(f) Il est gueri ton front
(It is cured your forehead)

Mother of Daniel

(g) Elle rit, la petite fille quand il passe, le garçon.
(She laughs, the little girl when he passes, the boy)

(h) Elle a trouvé son couvercle la petite boite.
(She found her cover the little box)

Lightbown, too, considers the possibility that the frequent use of right

dislocation structures in adult spoken French could lead the child to produce postverbal subjects. Because subject pronouns are unstressed and dislocated NP's are presumably salient, the child might simply reanalyze an adult utterance such as "il va dormir le chien" (*he goes to sleep the dog*) as "va dormir le chien" (*goes to sleep the dog*). In order to test this prediction, Lightbown calculated the proportion of sentences containing postverbal subjects in the speech of Nathalie's mother and Daniel's mother. According to the numbers she gives,[20] I calculated that these constructions account for only 6% of maternal utterances, roughly the same as for Philippe's parents.

There are, however, other sources of inversion in parental French speech, including causatives and stylistic inversion in interrogatives. Although these structures occur in the parental speech I examined, they are scarce. Lightbown also notes that the mothers tended to avoid licensed inversion in yes/no questions and wh-questions, relying instead on intonation to mark questionhood. Thus, it may be safely concluded that the children are producing postverbal subjects far beyond the rate of postverbal subject constructions in their linguistic environment.

Furthermore, while it is noteworthy that dislocations are more common in spoken French than sentences with a nondislocated lexical (nonpronominal) subject (cf. Lambrecht, 1981), the fact that left dislocations are more common than right dislocations indicates that children are not more likely to hear full NP subjects in postverbal than in preverbal position. Independent studies of dislocation in spoken French, based on transcripts of taped conversations have indeed

shown that left dislocation is more common in colloquial French than right dislocation (e.g., Barnes, 1985). Ashby (1988) reports that his recordings of 25 French nationals of varied socio-economic background resulted in 862 tokens containing left dislocations and only 79 containing right dislocations. It thus comes as somewhat of a surprise for a purely input-based account that left dislocations are uncommon in early French child language, based on the data I examined. For the earlier period in the speech of the three children, T1, I counted 13 left dislocations, as against 57 right dislocations and 217 postverbal subjects.

In describing the speech of Daniel and Nathalie, Lightbown also notes that the utterances with nonstandard, verb-subject word order all fall within a single intonation contour. She argues, therefore, that they cannot be accounted for in terms of successive single word utterances (cf. Bloom 1970). That there is no intonational pause between the postverbal subject and the rest of the sentence also casts doubt on the theory that these subjects are dislocated constituents for the child. I have listened to tapes on which the Philippe transcripts are based and determined that the majority of postverbal subject sentences before the age of 27 months are intonational units. However, it was also apparent that sentences conforming to the right dislocation model, e.g. "Il chante Paul" (*He sings Paul*), are intonational units in the speech of Philippe and his parents as well.

This observation concurs with the description of the prosody and pragmatics of right dislocations in the linguistic literature. According to Larsson (1979) and Lambrecht (1981), the dislocated

constituent in right dislocations is neither pragmatically nor prosodically marked. Larsson describes them as having flat or equal intonation. In the following quote, Lambrecht refers to right dislocations as antitopics:

> The most striking formal correlate of the pragmatic status of antitopics is their complete lack of stress. Unlike topics, which were described as having secondary stress, antitopics are completely stressless... (p. 85-86)

We are thus faced with a two-part question. (A) Given that postverbal subjects in the form of right dislocations in adult input speech are neither very frequent nor very salient according to standard measures, what leads the child to produce them in such quantity? (B) How are these structures represented in the child's grammar? I turn to (B) in the next section. In relation to (A), it is possible that the very lack of pragmatic and prosodic marking on right dislocation constructions contributes to their frequency in child speech. That is, in the absence of any signal to the child to set these structures aside, so to speak, they are incorporated into the developing grammar. In any case, given the low frequency of right dislocations and inversion in the adult spoken language, there is reason to believe that inherent grammatical factors, and not just the input, play a key rule in the child's production of postverbal subjects. Among these inherent grammatical factors are the raising of the verb in Romance languages and the generation of the subject within the VP.

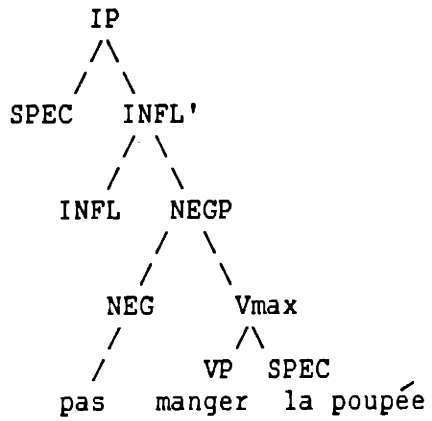
3.4 Postverbal subjects as VP-internal subjects. A previous syntactic account. In an earlier paper on French syntactic

development (Pierce, 1987), I contend that the co-existence of null and postverbal subjects in the speech of two year-old French speaking children is naturally accounted for by the null subject parameter as formulated in Rizzi (1982) and Burzio (1986). In this formulation of the parameter, in brief, it is the optionally pronominal nature of inflection in [+null subject] languages that licenses empty categories in subject position. An INFL that is [+pronominal] serves as the proper governor of an empty category in [NP,S] position. This empty category can be either an argument, in which case it a referential null subject, or it an be a nonargument (empty expletive), in which case it can be coindexed with and transmit nominative case to a VP-adjoined subject NP in postverbal position. In the grammar of the child acquiring French, both null and postverbal subjects would be licensed during the null subject phase, since inversion, like the optional subject property, simply results from the optionally pronominal nature of INFL, serving as a licenser and identifier of an empty category in subject position (Burzio, 1986). This approach has the appeal of using a single parameter to account for a broad range of facts. However, it raises a host of questions. Foremost, if null and postverbal subjects arise in child language due to the same initial parameter setting, why don't we see postverbal subjects in English child language during the optional subject period?

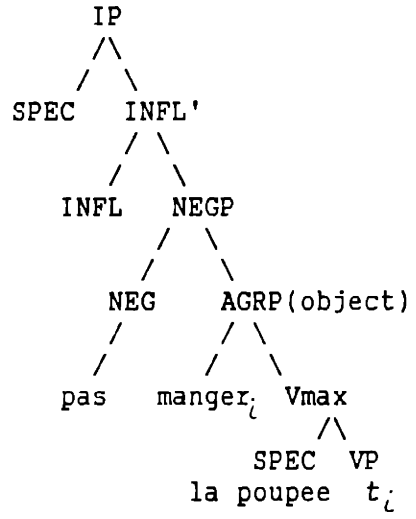
A VP-internal subject account. I propose now that postverbal subjects in French child language are VP-internal subjects, subjects generated within the verb phrase. That is, a child utterance like (1a)

(*pas manger la poupee*) is hypothesized to have either the structure in (19) or that in (20):

(19)



(20)



Analyses of postverbal subjects in Romance along the lines of both (19) and (20) are found in the literature. Right branching internal subjects are postulated by, among others, Kitagawa (1986), Borer (1986), Contreras (1987), and Bonet (1989). A verb raising analysis of postverbal subjects is discussed in, for example, Adams (1987) and Deprez (1988).

On the latter approach, postverbal subjects are attributed directly to verb raising in conjunction with the failure of the subject to raise out of the VP. This approach is very appealing in that it allows for a distinction between languages which license postverbal subjects and those that do not solely on the basis of verb raising.[21] It would thereby allow us to distinguish between word order in English and French child language solely on the basis of verb raising, without reference to a difference in underlying word order.[22]

There are two sets of empirical findings which weakly challenge this approach. First, as mentioned above, we find that verb raising to INFL (evidenced by finite verb forms) correlates not with an increase in postverbal subjects, but with a decrease. For instance, the child Nathalie at T1, when 83% of her lexical subjects are postverbal, is using predominantly nonfinite verbs. A second argument concerns word order in transitive and complex sentences. On the assumption of underlying S-V-O word order and V-to-I, V-S-O word order ensues. It is puzzling, then, that V-S-O constructions and V-S-complement constructions are all but absent from the French data. There are, on the other hand, a moderate number of V-O-S, V-complement-S and postverbal subjects with verbs in complex tenses. Some examples of the latter, which may be attributed either to underlying subject-final order or to right dislocation, are given in (21):

(21) a. bois peu moi (D1)
(drink little me)

b. pas pousser chaise papa (D5)
(not push the chair papa)

c. fini cafe Madeleine (P3)
(finished coffee Madeleine)

d. fait du bruit la voiture (P3)
(makes noise the truck)

e. veux encore des gateaux moi (P3)
(want more cakes me)

f. va sur le trottoir le camion (P4)
(go on the sidewalk the truck)

g. fait pas dodo bébé (N4)
(do/make not sleep baby)

h. mets le manteau maman (N4)
(put the coat mama)

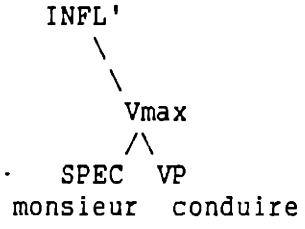
A plausible explanation for the lack of V-S-O utterances in early French concerns the notion of case adjacency. That is, the subject in these constructions intervenes between the verb and its object, possibly blocking the assignment of accusative case. Deprez (1988) argues that the case filter rules out V-S-O order in stylistic inversion in contemporary French is this fashion. The case adjacency restriction in French child language may also take the form of a general failure of the early grammar to accomplish the nonlocal assignment of grammatical features (cf. Borer & Wexler, 1987).[23] V-O-S constructions are clearly not ruled out in this way. We are still left with the question of whether V-O-S in early French instantiates base generated verb-subject order, as in (19), or is derived via right dislocation of the subject. The data I have examined so far is not sufficient to decide this question. The main point, however, remains

that postverbal subjects in early French are VP-internal subjects that have not moved.

There are actually two formalizations of the approach in (19) to consider. On the one hand, the predominance of postverbal subjects over preverbal subjects, especially at T1, suggests that the underlying order of constituents within the VP may be subject-final. On this approach, all preverbal subjects, whether in tensed or untensed clauses, are derived by movement. In order to produce S-V order, the subject must either have raised to a higher subject position, or what look like subjects in the early language are really topics (cf. Gruber, 1967; Lebeaux, 1987).

The other possibility is that the order of major constituents within the VP is not fixed in French, as Koopman (1988) suggests, even at the early stages. On this approach, the French child's grammar base generates sentences like (9a) (*monsieur conduire*) directly as in (22), details aside:

(22)



Both (20) and (22), on this approach, are underived structures for the child. In these cases, both the subject and the verb, being nonfinite, have failed to raise. Presumably, sentences with postverbal subjects and inflected verbs reflect the raising of the verb to INFL

while the subject stays in place within the VP. Once again, sentences with preverbal lexical subjects and inflected verbs entail movement of the subject. If the verb raises to INFL to bind inflectional affixes, then the only way to recover S-V order is if the subject moves leftward as well.

The latter analysis has the advantage of accounting for some of the variability in word order across children and across observations within a given child. In addition, it allows us to account for all overt subject constructions, with the exception of those with preverbal lexical subjects and finite tense, based on a minimum of derivational steps. Postverbal subjects, as well as preverbal subjects in nonfinite clauses, are underived; nonfinite verbs need not raise at all. According to the information in Table 2, reproduced here, this leaves 25 utterances at T1 which entail either topicalization of the subject or raising, roughly 9% of lexical subjects overall and 2.4% of all sentential utterances at T1.

(23)

	[+finite]	[-finite]
postverbal subject	69	148
preverbal subject	25	34

I propose here that these 2.4% are in fact topic constructions for the young child, and that subject raising is not in evidence until T2. As the account of pronominal subjects in section 3.6 will make clear, the young child need not raise or topicalize the subject in order to derive the vast majority of sentences he produces early on.

Furthermore, as mentioned above, the absence of left dislocations at the early stage may be interpreted as confirmation that the higher subject ([SPEC,IP]) position is not accessible, or perhaps not generated, in the early grammar.[24]

I thus propose that the grammar of the French child incorporates either fixed subject-initial order or optional ordering of the subject and the verb, and that both options reflect a value of the VP-internal subject parameter, formulated as follows:

(24) VP-internal subject parameter

(i) [SPEC,VP] and V' are unordered
(ii) [SPEC,VP] is generated as a left branching sister of VP
(iii) [SPEC,VP] is generated as a right branching sister of VP

The surprising variability of word order observed in French child language thus follows quite naturally from a choice of value (i) or (ii). Given (i), both V-S and S-V are underived word orders for the child. Given (ii), all postverbal subjects are derived via verb raising. The facts about French child language discussed thus far provide a forceful argument for the VP-internal subject analysis of postverbal subjects under either formalization. Yet the application of this analysis to child language also raises a host of questions. In particular, how is case being assigned to the VP-internal subject in early grammar?

Case assignment to VP-internal subjects. Recently, it has been proposed that child language is characterized by the absence of inflection at early stages (Guilfoyle & Noonan, 1988; Kazman, 1988; Aldridge, 1988). In Guilfoyle & Noonan's model, functional structure

matures sometime after the second birthday. Before that time, children are said to represent only lexical categories. They are presumably unable to inflect verbs or assign nominative case to the subject.[25] One insurmountable problem for the theory that inflection is simply absent from two year-old grammar is the fact that complex inflectional paradigms are acquired very early by the child learning, for example, Polish (Weist, et. al, 1984) or Italian (Bates, 1976; Hyams, 1984).

One outcome of adopting the VP-internal subject analysis is that it can capture the same descriptive generalization as the no-INFL approach without assuming that the child's grammar is inflectionless. That is, inflection is not integrated into the clause until the child acquires a mechanism for attaching inflectional affixes. At the same time, we can assume that the case filter, a principle of universal grammar, is operational. According to Koopman & Sportiche (1988), the underlying VP-internal subject structure conforms to a prerequisite configuration for nominative case assignment in languages in which subject raising is not obligatory. In the Koopman-Sportiche framework and elsewhere, inflection head-governs the maximal projection of the verb and its specifier. Tensed inflection can thereby assign case to the VP-internal subject (cf. also Bonet, 1989).

I maintain, along these lines, that INFL is "present" and can assign nominative case structurally to the VP-internal subject in

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25. Bloom (1988) and Lebeaux (1988) also present arguments to the effect that the case filter is not operational in the early grammar.

early grammar, whether the subject is generated to the left or to the right of the verb. Further, I suggest that the optionality of tensed inflection in early child language does not indicate a lack of abstract tense. Rather, the base generation of verbs in infinitival form, combined with an early inconsistency in (or short delays in the mastery of) verb raising to INFL (tense) results in nonfinite clauses. Thus, I am assuming that the VP-internal subject configuration meets the structural requirements for the assignment of nominative case in the context of a nonfinite clause, along the lines of the AUX-to-COMP rule of Italian (Rizzi, 1982) and extensions of that mechanism (e.g., Borer, 1989; Huang, 1989). According to Huang (1989), in providing a government-based account of null subjects and nominative case assignment in Chinese, the finiteness of a clause may be determined in terms of the potential occurrence of overt AUX (i.e., tensed INFL). In clauses which are potentially finite but which contain a zero-morpheme in AUX, AUX still governs and assigns nominative case to the lexical subject, or licenses *pro* in subject position.

In a similar vein, I suggest that the early grammar lacks the feature [-finite] and, further, that INFL which is not explicitly specified for a + or - tense feature assigns nominative case by default. The child's grammar appears the have the [+finite] feature and verb raising to INFL to bind that affix. As we saw above, tensed INFL is available as a landing site for the raised verb. When the [+tense] feature is present, the verb raises to bind the affix, in conformity with the UG condition against unbound affixes. The early generation of overt and null subjects in clauses which are not

explicitly tensed, however, indicates that INFL in these constructions governs and assigns case to the VP-internal subject position.

In short, I am proposing that the occurrence of lexical subjects with infinitives in French child language may be viewed as evidence that these clauses are not marked as nonfinite on an abstract level. As I will discuss in chapter four, the occurrence of lexical subjects with progressive participles in English child language may be interpreted along similar lines.

There are two major consequences of this analysis of case assignment. First, null subjects in French child language are accounted for naturally, as VP-internal subjects. According to Rizzi (1986a), the crucial licensing relation on *pro* is case assignment by a designated head, where membership in the set of licensing heads defines a crosslinguistic parameter. I am also assuming, therefore, that INFL constitutes a case assigning head in French child language, just as Koopman & Sportiche (1988) argue for the class of languages which license null subjects. Given the VP-internal subject D-structure, and the definition of government adopted by Koopman & Sportiche, whereby INFL governs the VP and its specifier, then INFL in this configuration assigns case to the VP-internal subject position. Thus, a *pro* subject is licensed in exactly the same configuration that a lexical subject is assigned structural case.

What is the motivation for taking INFL to be a case assigning head in child language? In the Koopman-Sportiche framework, the parameter which determines whether or not the VP-internal subject must

raise at S-structure merely specifies whether or not INFL is an obligatory raising category. In English and French, it is argued, INFL is an obligatory raising category; in Italian, it is not. A language in which INFL is not a raising category is by definition a language in which INFL assigns structural nominative case. On the basis of this insight, it may be argued that since INFL is not an obligatory raising category in early French language, INFL serves to assign case into the VP. As was argued, if INFL can assign structural nominative case, then null subjects are licensed.

If INFL is a case assigning head in French child language, what forces subject raising, and the loss of null subjects, over the course of development? Though my central claims here do not depend on this point, I suggest that the governing status of INFL need not change. This leads to what I see as the second major consequence of this analysis of nominative case assignment in child language. Namely, that conditions under which VP-internal subjects, overt or null, are licensed in child language are potentially voided when derivational processes are acquired. In particular, I suggest in chapter four that when affix lowering in English is acquired, INFL is no longer in a governing position from which it can assign nominative case to the VP-internal subject. That is, INFL which lowers into the VP is not the head of the V-I complex and thus fails to govern the VP-internal subject position (cf. Deprez, 1988). Subject raising to [SPEC, IP] is thereby forced. Verb raising to INFL in Romance, however, does not void structural assignment of nominative case. INFL is the head of the V-I complex formed by verb raising. Further, it has been argued

that verb raising voids the barrierhood of VP, whereby INFL can assign nominative case into the VP (Chomsky, 1986b). Deprez (1988) argues that subjects in French stylistic inversion are licensed in just this way.

Before turning to the discussion on subject clitics in French child language, I briefly consider another possibility for the assignment of case to the VP-internal subject in early grammar. Assuming that the case filter holds and that INFL does not assign case to the underived subject, the only potential case assigners are the verb itself or a projection of the verb. Li (1985) argues that all verbs, including intransitives, assign case and that postverbal subjects in Chinese can be assigned accusative case by the verb, nominative case failing to be assigned into the VP. Or, adopting the notion of inherent or D-structure case, in which case assignment is in direct association with theta role assignment, V-bar might assign case to the VP-internal subject position. One consideration which works against this general approach is that case assignment which overlaps with theta role assignment is vacuous as a licensing condition. Second, inherent cases, such as the genitive and oblique cases, have generally been said to conform to constraints of directionality (cf. Chomsky, 1981; 1986a), which would not hold for case assigned by V' to [SPEC,VP], given optional ordering. Finally, this approach raises the question of what would cause the child to abandon inherent assignment of case to the VP-internal subject.

Under nominative case assignment by government from INFL, in contrast, whatever restructuring of the grammar there is follows

naturally from the emergence of derivational processes which alter basic clausal structure. Finally, on this view, we account for the possibility that structural assignment of nominative case is retained in languages, and perhaps in particular constructions of French and English, in which the configuration necessary for the assignment of this case is not transformed.

3.5 On the status of subject clitics in French. There are a number of additional considerations which force the analysis of subject clitics as inflectional affixes. First, examination of Philippe's utterances at more advanced stages reveals a near obligatory presence of the subject pronoun in tensed sentences.[26] At P28 (age 3;0), for example, over 95% of Philippe's utterances contain pronominal subjects, sometimes with a coreferential NP in sentence-final or sentence-initial position, sometimes not.

As mentioned in chapter two, many linguists studying diachronic trends in Modern French have indicated that the demotion of subject pronouns to inflectional affixes is exactly as expected. Harris (1978) argues that the "downgrading" of clitic pronouns in French to affixes on the verb is the symptom of a major typological shift, in which French is becoming an essentially verb-initial language:

> One can say, then, that preverbal clitics are the device adopted by French whereby no problems arise as the language moves -- as it seems to be doing -- to a verb-initial type as far as its fundamental sentential order is concerned (p. 120).

Other typologists consider Harris' position too extreme, but nonetheless concede that the subject pronoun in spoken French has the

properties of a syntactic clitic marking agreement (cf., e.g., Lambrecht, 1981; Ashby, 1988).

The developmental data, according to which subject pronouns in French child language occur contingent upon verb raising to INFL, is noteworthy confirmation of this outlook. Furthermore, it is evidence that subject clitics in French more strongly resemble subject clitics in the Northern Italian dialects than they do subject pronouns in Spanish or standard Italian. It is interesting to note in this regard that, despite the abundance of postverbal subjects in French child language, subject pronouns never occur in postverbal position:

(25)

	Actual child utterances:
a. (*) tombee je	(vs. tombee moi)
(fallen I)	*(fallen me)*
b. (*) bois peu elle	(vs. bois peu moi)
(drinks little she)	*(drinks little me)*
c. (*) pousses tu sandales	(vs. pousse toi sandales)
(push you sandals)	*(push you sandals)*
d. (*) veux tourner il	(vs. veux tourner moi)
(want to turn he)	*(want to turn me)*

This is an additional indication that they are situated in inflection, bound to the tensed verb. While subject pronouns in Italian and Spanish do occur in postverbal position, they are strong-form pronouns. Thus, it would be inaccurate to argue against the claim that French has licensed inversion on the basis of the data in (25).

Let us consider the consequences of treating colloquial French on a par with the Italian dialects. In general terms, the parallels between the two are quite obvious. Subject clitics in the dialects and in French never appear in untensed clauses, and always appear adjacent to the tensed verb in complex tenses (cf. Burzio, 1986, on

Piedmontese). Further, these clitics in both the dialects and in spoken French occur whether the subject position is empty or filled by a nonclitic pronoun or a lexical subject, and whether that subject occurs preverbally or postverbally. Two major consequences of viewing spoken French from this perspective are (A) that French is a null subject language in which subject pronouns occur in inflection and the subject position is optionally filled, and (B) postverbal subjects in French right dislocations occur in argument position, with the coreferential pronoun situated in a nonargument position.[27]

-- Notes --

1. The Philippe corpus (cf. Suppes, Smith & Leveille, 1973) is available on-line through the Child Language Data Exchange System (MacWhinney & Snow, 1985). The utterances of Nathalie and Daniel were collected by Patsy Lightbown in research for her dissertation (Lightbown, 1977) and were generously made available to me in full by Dr. Lightbown.

2. T1 includes the first three transcripts examined for Nathalie (N1, N2, N4) and Daniel (D1, D2, D3) and the earliest four for Philippe (P1, P2, P3, P4). T2 includes the most advanced transcripts for Nathalie (N6, N7) and Daniel (D4, D5), and P7, P9, P11 of the Philippe transcripts. For each child, the number of utterances is nearly equally divided between T1 and T2.

3. Only utterances with no subject whatsoever are counted as null subject sentences. Sentences with postverbal subjects are counted separately.

4. I address the status of word order errors in English child language in chapter four.

5. It should be noted that the child Nathalie uses some novel words as verbs, especially during an early period. For example, she says "myamyam" as opposed to "manger" to mean either *food* or *eat*. My interpretation of these forms follows Lightbown (1977), who based her interpretation on discourse context and on translations offered by Nathalie's mother.

6. MLU for Philippe was calculated by me according to the guidelines in Brown (1973), whereas MLU for the Lightbown children was calculated by Lightbown according to the guidelines in Bloom (1970), which differs from Brown in that it does not count the child's immediate repetitions of utterances.

7. Note that postverbal subjects persist in French speech in the form of so-called right dislocations, sentences with both a preverbal pronoun and a postverbal subject. I deal with these structures separately, for reasons that will become clear.

8. It should be noted that one consistent problem in the interpretation of the French data is the phonological ambiguity in French between regular infinitives and past/passive participles. On this I concur with Lightbown in noting, from examining the discourse context, that the child's utterances tend overwhelmingly to refer to ongoing activity. Ambiguous forms are thus to be regarded as infinitives throughout, unless they co-occur with auxiliary verbs or the context explicitly indicates use of the past tense. More importantly, it should be noted that the question of whether these verb forms are infinitives or participles does not affect the analysis of them as verbs forms which do not raise to tense, but which may raise to some lower projection of inflection (cf. Pollock, 1989).

9. For Daniel, there is no correlation between nonfinite tense and postverbal subjects. This appears to be because his use of

postverbal subjects has not decreased by the last available transcript, while his use of nonfinite verbs has. I assume that transcripts of Daniel's speech at a later stage would have revealed a decrease in postverbal subjects.

10. There are a few ambiguous cases with past participles that are homophonous with the present tense. For example, Philippe at P3 says "pas fait un gros" (not make/made a big one). I believe this is an instance in which both subject and the tensed auxiliary have been dropped, in which case utterances like these are not counter examples to the generalization here. The underlying or intended utterance, then, is "j'ai pas fait un gros".

11. This results is also highly significant when calculated for all three children separately.

12. Pollock (1989) argues that the [-finite] affix lowers into the verb phrase in French. Alternatively, Emonds (1985) maintains that French infinitives are base generated forms. The child language data concur with the latter analysis.

13. I am assuming, following Kayne 91987) and Pollock (1989) that infinitives and participles may raise to a position in inflection below tense and negation.

14. Of the 22 utterances of type (16d), 11 were produced by Daniel, 4 by Philippe and 7 by Nathalie.

15. (*) in (16d) indicates not generated by the French child's grammar.

16. Bates excludes copular constructions and wh-questions from these tabulations.

17. In these data, the category subject encompasses both pronouns and other noun phrases. Note, however, that subject pronouns in Italian are so-called strong form pronominals, not clitics. Thus, I argue below that the inclusion of subject pronouns in the Italian data on subjects and word order does not impede comparison to French usage of NP subjects.

18. Guillaume, 1927 (English translation by E. Clark in Ferguson & Slobin (eds.), 1973).

19. Also note the examples in (18) of chapter two.

20. These numbers are from Table 27, p. 186 in Lightbown (1977).

21. See Deprez (1988) for a detailed discussion of this point.

22. Without this analysis, verb raising to INFL in French child language is in essence string-vacuous (Hyams, personal communication).

23. This was pointed out to me by Nina Hyams, personal communication.

24. This assumes that pronominal subjects are in inflection in syntax and that the topic in left dislocations must pass through [SPEC,IP] position in order to avoid a strong crossover violation. If the child does not access [SPEC,IP] positions, then this derivation is not available to him. Wh-movement across the pronoun yields a strong crossover violation (Chomsky, 1986a), barring these structures in early grammar.

26. Data on the other two children at older ages was not available.

27. Left dislocation is French is one point where the analogy breaks down. Left-dislocated subjects in French do not have the

status of preverbal subjects in the dialects. Rather, they are topics according to their pragmatic and prosodic properties (cf. Larsson, 1979; Lambrecht, 1981; Barnes, 1985). Jaeggli (1982) provides a plausible account for the absence of true preverbal subjects in the context of a subject clitic. He argues that INFL is a possible governor in French and that it must govern [NP, IP] position in order to assign nominative case. If there is no subject clitic in INFL, then INFL governs the subject position. However, a subject clitic generated in INFL blocks government of the subject position, with the result that lexical subjects fail to be licensed there.

Chapter 4: Aspects of English child language

4.1 Introduction. In the preceding pages, I have provided motivation for a set of recent theoretical proposals on the basis of data from French child language. In this chapter, I test the predictions of this general framework against findings for English child language as reported in the literature, highlighting a number of previously unaccounted for differences between French and English syntactic development. Specifically, the model makes the following six predictions concerning the course of acquisition in English:

(I) Null subjects are licensed at an early stage in English child language.

A central claim of this thesis is that naturalistic data from child language provide confirmation of the hypothesis that the subject is generated within the VP. In this chapter, I discuss the evidence for this claim from English child language. Following Rizzi (1986a) and others, I suggested above that where lexical subjects are licensed to remain within the VP at S-structure, *pro* may also be licensed in the position of the subject. The optionality of lexical subjects in French child language was explained in this way. It is naturally predicted that null subjects will be produced in English child language during the early stage in which subjects are assigned case within the VP, prior to the emergence of subject raising. It is well-

known that the English speaking child of two often leaves out the subject. In section 4.2, I briefly discuss the facts concerning null subjects in English child language.

(II) Postverbal subjects are not licensed in English child language.

In chapter three I described data from three French speaking children which strongly suggest that the subject is generated within the VP. I also considered the possibility that the position of the subject within the VP is not fixed in French. Sportiche (1988) claims that this is the correct description of French, based on the fact that French exhibits overt postverbal subjects in cases of licensed inversion in certain interrogative structures. The important point, however, was the underived status of postverbal subjects in French child language, a point which follows whether or not V'-[SPEC,VP] order is fixed. As mentioned above, many, including Borer (1986a), Contreras (1987) and Bonet (1989), have argued that postverbal subjects in Romance languages are base generated in postverbal position within the VP, as opposed to being adjoined to the VP.

In this chapter, I argue, contrary to Kitagawa (1986), that the VP-internal subject in English is a left-branching sister of the V', one of the options defined by the VP-internal subject parameter (cf. section 3.4). The data presented below indicate that the English-speaking child knows at a very early age that subjects are generated to the left of the verb in his language.[1] The few exceptions to standard subject-verb order observed in the natural production data turn out to involve unaccusative verbs. The near absence of word order

errors in English child language is striking in contrast to the word order variability found in French child language. While some of the verbs occurring with postverbal subjects in French child language are unaccusatives, many are not.

(III) English speaking children are late to acquire productive inflectional affixation.

In chapter two, I reviewed the literature on verb raising to INFL which establishes that all finite verbs undergo raising in French, but only *be* and auxiliary *have* raise out of the VP in the syntax of English. Main verbs are inflected in syntax via the mechanism of affix lowering. Following Chomsky (1988), where it is argued that affix lowering is more costly in derivational terms that verb raising, and assuming generally that derivational economy constrains the acquisition process, late emergence of productive inflectional affixation in English is thereby predicted. In fact, the child acquiring English is typically over three years of age when he masters the system of verbal inflection in his language (Brown, 1973; Pinker, 1984; Guilfoyle, 1984; Hyams & Jaeggli, 1988, among others).

(IV) There is an early stage in which modals are sentence-initial in English language development.

Another difference between the inflectional systems of English and French discussed above concerns the content of tensed inflection the two languages. While tensed INFL is always realized as an inflectional affix in French, English has a separate class of auxiliary elements, the modals, which are base generated in INFL.

Emonds (1985) argues that the English modals form a word-class distinct from the class of verbs. In effect, English has two sets of inflectional elements, affixes and modals. Unlike modal verbs in French, which raise to INFL along with other verbs, modals in English are never situated within the verb phrase.

The class of English modals thus provides a unique test for the claim that early child language is characterized in part by a delay in the emergence of syntactic processes which integrate INFL and the VP containing the subject. These processes include affix lowering, verb raising and subject raising. Unlike syntactic affixes, which are filtered out if they remain unbound, modals stand on their own. Thus, it is predicted that an early stage in the use of modals will include modals exclusively in sentence-initial position or in wh-questions, to the left of any overt subject, while a later stage will include modals distributed both to the left and to the right of the subject NP.

(V) There is an early stage in which nonanaphoric *no/not* is sentence-initial in English child language.

Because main verbs fail to raise to INFL in English, the negative particle *not*, assumed to be in fixed position in INFL, always appears to the left of the main verb, along with a modal auxiliary.[2] Following the same logic as directly above, the child who lexically instantiates NEG prior to the acquisition of subject raising is expected to utter sentences with *not* (or *no*) in sentence initial position, to the left of any overt subject. This particular stage in the acquisition of negation has been widely discussed in the literature (Bellugi, 1967;

Bloom, 1970; McNeill, 1970; DeVilliers & DeVilliers, 1985; among many others).

(VI) Subject pronouns are not syntactic clitics in English.

In a final section of this chapter, I examine the distribution of subject pronouns in English and French in the context of comparative child language data. In my discussion of French child language in chapter three, I described the effects of the weak or clitic status of subject pronouns in spoken French on the acquisition of inflection and word order. In contrast, subject pronouns in English are not syntactic clitics. While a striking contingency between subject pronouns and inflection in French child language was discovered, the same is not expected to hold of English. It is predicted that the English speaking child will use subject pronouns as independent morphemes, in syntactic environments where they fail to occur in spoken French (i.e., in conjoined NPs). At the same time, it is predicted that the French speaking child will treat subject pronouns as obligatory clitics in environments where they are redundant in English and thus optional for the English speaking child (i.e., in clausal conjunction).

4.2 Null subjects in English child language. The observation that subjects are frequently dropped in early English has long been a focus of research and analysis in the study of child language. The relevant facts have been described from a variety of perspectives, including theories of processing bottlenecks (Pinker, 1984; Bloom, 1989), semantic-pragmatic constraints (Bates, 1976; Greenfield & Smith, 1976), perceptual biases (Brown and Bellugi, 1964; Read &

Schreiber, 1982) and universal grammar (Hyams, 1986a; Guilfoyle, 1984; Hyams & Jaeggli, 1988). I contend here that subject deletion in the early stages of English child language follows directly from the VP-internal subject configuration, just as it does in French. Given the mechanism of case assignment in early child language as outlined above (cf. section 3.4), the VP-internal subject position is assigned nominative case. Since the distribution of *pro* subjects is coextensive with the domain of nominative case assignment, as Rizzi (1986a), Koopman & Sportiche (1988) and others have claimed, then it follows that *pro* is licensed in VP-internal subject position.[3]

I turn briefly to the findings concerning subject deletion and the decrease in null subjects over the course of development for one child, Naomi (Sachs, 1983), based on data available through the Child Language Data Exchange System (MacWhinney and Snow, 1985). That Naomi is representative of other English speaking children at same stage in linguistic development is clear from the numerous reports of subject omission found in the child language literature (Bloom, 1970; Brown, 1973; Pinker, 1984; Hyams, 1986; Valian, 1989, Bloom, 1989 and others). Researchers report maximal frequencies of subject omission at a particular stage, roughly until the age of two and a half years, between 30% (cf. Valian, 1989) and 65% (cf. Hyams & Jaeggli (1988), based on the Brown corpus for the child Adam). According to Bloom (1989), who reports an average of 55% subject deletion across three children at this stage, objects are omitted from obligatory contexts only 9% of the time.

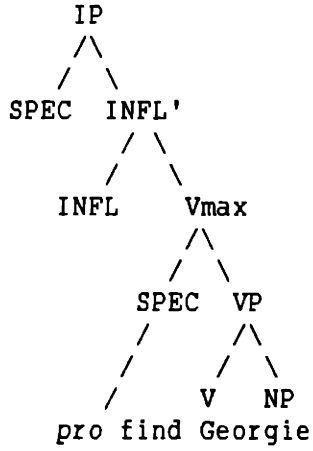
Until the age of two years, Naomi drops subjects in over 40% of her verb-containing utterances.[4] Here are some examples of her null utterances at this time:

(1)

a. bang foot (1:10;10) = one year, 10 months, 10 days
b. playing ball (1:10;10)
c. fall down (1:10;11)
d. want more (1:10;17)
e. get clip (1:10;28)
f. changing (1:10;28)
g. find Georgie (1:11;2)
h. is broken (1:11;3)
i. can make tail (1:11;20)

I am assuming that the structural representation of the child's null subject utterances at this stage is as in (2),

(2)



and that *pro* is licensed via structural case assignment from INFL. Inflectional affixation (i.e., affix lowering) has not yet been acquired and there is no evidence of subject raising to [SPEC,IP] at this point. Within a period of two months, the rate of subject omission decreases to below 15% of utterances overall, and continues to drop off steadily after that (see Table 7 in Appendix B.)

The present model predicts a relationship between the development of inflectional affixation and the loss of subject optionality along the following lines: the attachment of affixes to the verb via lowering removes inflection from a position where it can assign case to the subject within the VP. With inflection no longer in a governing position, a *pro* subject is no longer licensed, just as an overt subject is no longer assigned case within the VP. It is noteworthy in this regard that Sachs (1983) describes Naomi at 22 months as just beginning to use the regular past tense morpheme *-ed*, and Naomi at 25 months as having achieved 72% morpheme use.[5] As shown in Table 7, subject omission drops from over 40% to below 15% during the same period.

In fact, the licensing of null subjects has been tied to the absence of inflectional affixation in numerous other accounts. Guilfoyle (1984), Hyams & Jaeggli (1988) and Kazman (1988) all claim to have substantiated this connection.

4.3 Postverbal subjects in English child language. There are few cases of postverbal subjects in the early English language data. It is considered common knowledge in the field of child language that children learning English do not overgeneralize from subject-auxiliary inversion in questions to errorful cases of inversion involving non auxiliary verbs (Pinker, 1984). What is important, however, is that the preponderance of those errors that are observed involve a select group of verbs. Pinker (p. 273) lists the only three examples of postverbal subjects in the child language data he is aware of:

(3)

a. goes paci(fier) in mouth?
b. where's going to be the school?
c. where goes the wheel?

Note that all three examples contain the verb *go*. In Gruber's (1967) study of the child Mackie at about two years of age, it is reported that there are an equal number of NP subjects to the right as to the left of the predicate -- a rather exceptional finding. Some of these right periphery subjects occur in presentative constructions (e.g., *There's the man, In there baby*). Of those containing lexical verbs, the only two verbs used are *go* and *break*:

(4) Mackie (Gruber, 1967)

a. go truck
b. go in there train
c. all broken wheel
d. break pumpkin

Gruber argues that what appear to be lexical subjects in early child language are actually topics (cf. also Lebeaux, 1987), which would explain their freedom to distribute to the left as to the right if the VP.

Among some of the inverted subjects I observed in the speech of nine children, based on published corpora, are the following:

(5) Kendall II (MLU = 1.48) (Bowerman, 1973)

a. see Kendall (*when Kendall sees*)
b. Mommy hit Kendall (*when Kendall hits Mommy*)
c. hug Mommy (*when Mommy hugs*)

(6) Andrew (Braine, 1963; 1976, p. 7)

a. all gone juice
b. all gone outside (*said when the door is shut*)

c. all gone pacifier
d. all done milk
e. byebeye Calico (*said after death of a cat named Calico*)
f. byebye car
g. byebye papa

(7) Jonathan (23-24 months) (MLU = 1.6) (Braine, 1976, p.33-34)

a. all gone stick (*uttered twice*)
b. all gone rock
c. all gone blow (*no more matches to blow out*)
d. all gone big stick
e. all gone stone
f. all gone bee
g. all wet pants
h. all wet ball
i. wet pants
j. wet diaper

(8) David (22 months) (cf. Braine, 1976, p. 44)

a. crying baby
b. I can't get open door

(9) Eve[6]

a. (here) come Eve (1:7)
b. all gone grape juice (1:7)
c. came a man (*uttered twice*) (1:8)
d. come Fraser (1:8)
e. want some Eve (1;8)

(10) Peter

a. fall the cradle (2:2;13)
b. it's broken flag (2:2;13)
c. broken the light (*uttered twice*) (2:2;13)
-- followed in discourse by adult asking,
Is the light broken?
d. comes me! (2:3;24)

(11) Naomi

a. going (re)corder (1:10;10)
b. going it (<*uttered twice*>) (1:10;28)
c. is shoes off (*declarative*) (1:11;2)
d. is kitty sleep (*declarative*) (1:11;3)
e. is it hard <*declarative*> (1:11;3)
f. is it broken <*declarative*> (1:11;3)
g. is it fixed <*declarative*> (1:11;3)
h. bybebye sun (*uttered twice*) (1:11;6)
i. all gone sun (1:11;6)

(12) April

a. go Foster in town (2:9)

(13) Adam

a. write pencil Adam "D" (2:3)
b. write Adam (2:3)
c. hit Adam roadgrader (2:3)
d. hit door head (2:3)
-- in response to *what happened to your head?*
e. I go Adam take off (2:3)
-- followed in discourse by adult saying
oh no, you can't take it off yet
f. kick Adam (*when Adam kicks*) (2:3)
g. bite Adam (*when Adam bites*) (2:3)
h. (come) Adam (2:3)
i. (come) Adam over (2:3)
j. come Mommy (2:3)
k. come airplane (2:4)
l. here come tickle (2:4)
m. broken car (*uttered twice*) (2:4)
n. come Cromer? (2:5)
o. broken dis? (*many*) (2:6)
p. broken truck (2:6)
q. broken point (2:7)

These examples in (5) through (13) were culled from thousands of verb-containing utterances, and thus represent a fairly small proportion of the young English speaking child's sentential utterances. What is impressive is the extent to which postverbal subjects recur with only a few verbs across a number of children. The verbs *go, break, come,* and perhaps others exemplified above, are

members of the class of unaccusative verbs. While it is true that there are exceptions to this generalization (e.g., *bite Adam, kick Adam, hug Mommy*), the majority of these occurred with one child. Furthermore, these cases reflect a small proportion of post predicate arguments in English child language.

Intransitive verbs have been analyzed as falling into two classes, the unaccusatives and the unergatives (cf., among others, Perlmutter, 1978; Zubizarreta, 1985; Burzio, 1986; Grimshaw, 1987; Belletti, 1988). Unergatives assign only an external theta role, and are generally characterized as being agentive. These include verbs such as *talk, shout, hide, hate pretend, think, wish*. Unaccusatives assign only an internal theta role, and are generally characterized as being nonagentive, as the unique argument is a patient. These include the verbs *come, go, arrive, remain, descend, climb, run*. Some verbs, such as *break, sink*, undergo transitive-unaccusative alternation:

(14)
a. Maria broke the vase/The vase broke
b. A storm sank the boat/The boat sank

The underlying structure of English sentences containing unaccusative verbs is with the sole argument NP in direct object position:

(15)
a. D-structure: e arrived the women
b. S-structure: the women$_i$ arrived t_i

Since the vast majority of the children's word order errors are with verbs that fall into the unaccusative class, these utterances fail to do damage to the claim the acquisition of word order in English is relatively error free. The child who says *come airplane* is

simply failing to raise the NP argument out of its base generated position, [NP, VP]. Based on the scarcity of postverbal subjects that do not conform to this generalization in the English data, it can be maintained that the parameter which fixes the order of V' and [SPEC,VP] within VP is set very early, in this case to subject-verb order.[7]

I turn now to a closer look at some of the unaccusative utterances listed above. Very young children are famous for saying things like *all gone juice*. Such productions have traditionally been viewed as primitive routines lacking in internal structure. In contrast, Lebeaux (1988, p. 278-9) argues that predicates like *all gone* and *byebye* are unaccusatives (meaning, respectively, *is finished* and *disappeared*). He infers these meanings from contextual descriptions that accompany reports of these utterances in context (in particular, based on Braine, 1963). In Lebeaux's view, the child usually realizes these predicates with postverbal arguments because that is how they are represented in his lexicon. In short, these data provide evidence for Lebeaux's claim that theta assignment, as opposed to case assignment, determines word order in early speech.

I contend here, in accord with Lebeaux (1988), that the majority of postverbal subjects found in English child language at this early stage are not in [SPEC,VP] position. As established above, [SPEC,VP] is generated exclusively to the left of the V' in English. Considering, furthermore, all of the utterances containing the verb *come* that the child Adam produced at age 2:4

(16) preverbal subject	postverbal subject	imperative (?)
a. Jack Jill come	b. come Cromer, Urler?	j. come, Mommy
	c. come Sun a weeK	k. come play toy
	d. come Mommy	l. come on, Mommy
	e. come airplane	m. come on, airplane
	f. come block	n. come on, pencil
	g. come block 'nere	o. come on
	h. come airplane, Mommy	
	i. here come tickle	

it appears that NPs accompanying unaccusative verbs surface predominantly in postverbal position at this early stage. The anecdotal evidence presented here is only suggestive in this regard. Consider, perhaps more convincingly, the context and intended meaning of some of these utterances. (16b) was uttered as the doorbell rang and intended roughly as "Is that Cromer, Ursula?". With (16c), it appears from context that Adam was trying to say "Sunday comes at the end of the week". These examples show that the child's postverbal subjects with the verb *come* are not just reductions of "*here comes X*".

These data are readily accounted for by the generalization that the child has not yet acquired NP raising to [SPEC,IP] position. Recall that case is being assigned to the VP-internal argument by INFL and that what rules out true postverbal subjects is fixed word order and a lack of verb raising, rather than case theory.

4.4 Inflection and modal auxiliaries in early English. In chapter two, I reviewed evidence for the claim that verb raising in English is limited to the auxiliary *have* and *be*. On Pollock's (1989) account, verbs that assign thematic roles are prevented from raising to INFL in English because properties of inflection in English block theta

transmission. Since *be* and auxiliary *have* do not assign thematic roles, raising to INFL does not result in a violation of the theta criterion. Inflectional affixation in English, then, is accomplished by raising to INFL in the case of *be* and auxiliary *have*, and by affix lowering onto the verb in the case of all other verbs.

There are a number of reports in the literature to the effect that the child acquiring English is slow to achieve productive inflectional affixation. This stands in contrast to the earlier acquisition of inflectional morphology in languages which have more complex systems for overt marking of tense and agreement, such as Italian (Hyams, 1984) and Polish (Weist et al., 1984). According to Brown's (1973) ranking of the acquisition order of 14 grammatical morphemes in three children, productive appropriate use of the past and third person regular morphemes is late, ranking nine and ten respectively. Brown's success criterion of 90% occurrence of a morpheme in required syntactic contexts was not achieved for *-ed* and *-s*, based on the children that he studied, until sometime after the age of three years. These overall results were replicated by deVilliers & deVilliers (1973) in a cross-sectional study of the acquisition of grammatical morphemes.

Seemingly less consistent with the predictions of the present account is the early acquisition of the present progressive morpheme *-ing*. The morpheme *-ing* is ranked first in the order of acquisition, both by Brown (1973) and deVilliers & deVilliers (1973). If affix lowering is not established until it is evidenced by productive attachment of *-ed* and *-s*, as I am maintaining, where does this leave -

ing? I hypothesize that the progressive participle is a base generated form for the child (and perhaps for the adult), such that it is not represented at syntactic levels as an analyzed stem + affix. Rather, it is morphologically derived (cf. also Hyams, 1986b).[8]

Emonds (1985) argues at length for the existence of what he terms bare VPs in Spanish and English, non-NP gerunds that are not immediately dominated by an S-node. On Emonds' account, these include what is normally called the progressive form as well as other gerundive forms, such as the reduced relative (e.g., *They burned a box containing books*) and adverbial gerunds (e.g., *John always studies chemistry using my notebooks*). Based on the syntactic distribution of this class of elements, namely as nonfinite complements to verbs, Emonds argues the they do not undergo inflectional affixation. Rather, this type of gerund is a "*direct morphological realization of a base structure*" (p. 110). In short, there are independent arguments in the linguistic literature for base generation of the progressive participle. I show below in chapter five that these forms also arise at very early stages in Spanish acquisition, prior to productivity with other inflected forms.

A second argument for the base generation of the progressive participle comes directly from the child language data. Simply to say that progressive participles surface early falls short of characterizing the extent of their usage in early child language. These forms, without the required auxiliary *be*, are used in abundance at early stages. For the child Naomi, progressive participles account for 25% of all verbs uttered through the age of 23 months,

distributing with null, pronominal and lexical subjects. If one maintains that the child who can utter only two to three words in sequence will avoid unnecessary morphemes, it is even more difficult to account for the this rate of occurrence without positing that *-ing* does not count as an independent morpheme, i.e. that progressives are base generated. At age 22;2, when Naomi is dropping subjects at a rate of roughly 40%, 26 out of the 36 sentences with lexical NP subjects contained progressive participles.

In addressing the phenomenon of overtensing errors, Pinker (1984, p.264) points out that many such errors with auxiliaries involve the progressive participle (e.g. *Fraser go sitting in that chair* uttered by Eve at 1:11). This further suggests that these participles base generated forms. In conclusion, the claim the inflectional affixation is slow to be acquired in English child language is not negated by the fact of early progressives, as the latter do not entail inflectional affixation in syntax.

I turn now the emergence of auxiliaries in English child language, beginning with *be*.[9] The earliest occurrences of *be* reported in the literature are noncontractible tensed forms in sentences like *here it is* and *there it is* (Brown, 1973). Indeed, in the recorded speech of the child Naomi (Sachs, 1983) through the age of 22 months, *is* occurs in the following constructions:

(17)
a. There it is (*uttered nine times*)
b. There is (*uttered four times; variant of (17a)*)

It is clear from the discourse that these phrases serve a deictic function, yet are not always used appropriately. Here is an example of a parent-child interchange:

(18)
Father: Where's the horsey? I don't see him.
Naomi: There it is.
Father: What's this?
Naomi: There it is, kitty.

Many have argued, based on the contextual distribution of these phrases in child language, that they are rote learned units (cf. Bowerman, 1982; Peters, 1983). I will assume here that this is the correct analysis, and that it also holds of early occurrences of contracted *be* in *that's, there's, here's* etc. Bellugi (1967) argues that pronoun + contractible *be* forms are merely surface variants of the pronouns themselves. The child does not analyze them into their component parts until a later stage.

In subsequent stages, still at a very early age, Naomi's utterances with *be* include those with *is* used appropriately in yes/no questions, wh-questions and as a copula:

(19)
a. is this doggie? (Naomi16) (1;10;19)
b. is it raining? (Naomi23) (1;11;6)

(20) where is it?
(21)
a. is fixed (Naomi22)
b. is broken
c. is empty

Naomi is also using the plural form *are* at this time:

(22)
a. are sheep running? (Naomi23)
b. Where are the more?

Note that Naomi is using *be* largely as a main verb copula, but also as an auxiliary, as in (19b) and (22a). Since *be* in both cases undergoes raising to INFL, the distinction between the two is not a point of concern here. Actually, there are two potential analyses of *be* at this stage that are consistent with this framework. Either *be* has raised to INFL in these constructions, or it is generated in INFL along with the class of modals in English. The noteworthy fact about early use of *is* in constructions which appear to be structurally analyzed by the child is precisely that it occurs in sentence-initial position. One can in fact discern a stage in which *is* fails to appear with a subject to its left. Between the ages of (1:10;19) and (2;0;18) Naomi produced 65 utterances with *is* in sentence-initial position; one of these was wh-question in (20). During the same period, she produced only one preverbal subject with *is* (*he is cry?*).[10] Here, for example, are all utterances containing *is* produced at (1:11;6):

(23)
a. is toaster (*uttered twice*)
b. is it raining? (*uttered twice*)
c. is locked?
d. is locked (*uttered 3 times*)
e. is it gone? (*uttered twice*)
f. is it going to work?
g. is he going to work? (*uttered 4 times*)
h. how big is

Naomi's use of *are* at this time conforms to a similar pattern, with one exceptional utterance:

(24) <u>initial *be*</u> <u>non-initial *be*</u>

a. are sheep running?
b. where are the more? (*uttered twice*)
c. are eating grass
d. the stars are running

In fact, the placement of *are* varies significantly from one age-range to the next in this regard ($X_{obs}^2 = 9.39$, $p = .002$):

(25)

age	initial	non-initial
1-2 years	9	2
2-3 years	14	31

Even more impressive from the standpoint of prediction #4 (cf. section 4.1) is that some of these *be*-initial constructions were actually intended by the child as declarative utterances, as determined from examination of the discourse context. Following are some examples of these errors in context, errors that as far as I know have not been discussed previously in the literature:

(26)

a. Father: Naomi, do you want an egg?
Naomi: No, is it broke.
F: What? The ice is broken? What is broken Naomi?
N: Is it fixed.
F: Is it fixed?
N: Is fixed, is broken.
F: The ice isn't broken Naomi.

b. Mother: Look at the shoes.
Naomi: Is shoes off. Shoes shoes shoes
M: What about it? Yes, those are shoes.

c. Mother: Yes, you can have some bread, honey.
Naomi: Is that Naomi's. Want that [!] dinner.
M: Want that kind of dinner, too?

d. Naomi: Is kitty sleep.
Mother: Is kitty asleep?

e. Naomi: Is.
Father: What, Naomi?
N: Is it hard.

F: Yes, it is hard. Is it hard?

f. Mother: Hey, Naomi, what's this?
Naomi: Is it, flowers.

Here is a similar example from Adam's speech (Brown, 1973):

(27)
Adult: It's Goldilocks. Is it?
Adam: Yep, is it, Goldilocks.

And one from Peter (Bloom, 1970):

(28)
Situation: (*Adam sees adult look at the tape recorder*)
Adam: Is that tape, right Patsy?

In general, data from other children examined appear to conform to generalization that *is* is first used in questions. Eve's (Brown, 1973) first uses of *is* are also in questions:

(29)
a. What is Fraser doing? (1:10)
b. What is that? (1:11)
c. Sue, is that hat? (1:11)

The same goes for April at 25 months (Higginson, 1985):

(30)
a. Who is that?
b. Is that my blanket?
c. Who is it?

Note that it is likely that more of these *is*-initial utterances were intended as declaratives, but it is not usually possible to identify these cases without access to detailed conversational context. While there may well be children who do not conform to this generalization, this would not conflict with the general claim that there is evidence for VP-internal subjects in children who produce *be* and have not yet acquired subject raising.

The point of the data in (19) through (30) is to show that one can arguably discern a stage in early English child language in which inflectional material is present, but remains in some sense external to the rest of the sentence. I now turn to related findings concerning modals. Once again, Naomi's speech best exemplifies this aux-first stage. Before the age of two, Naomi uses *can* and *could* only in yes/no questions and declaratives with empty subjects. (31) lists all of Naomi's utterances with *can* from 1:11;6 through 1:11;23:

(31)

a. can take it (*uttered 3 times*)
b. can I get down? (*uttered 4 times*)
c. can I get up?
d. can climb it (*uttered 5 times*)
e. can stand up
f. can eat it
g. can lie down (*uttered twice*)
h. can do this?
i. can do this!
k. can I read this book? (*uttered twice*)
l. can use this? (*uttered twice*)
m. can make fish?
n. can make that (*uttered twice*)
o. can make it
p. can make tail
q. can drink cocoa
r. can drink it? (*uttered 3 times*)
s. can drink coffee
t. can eat nana

In fact, no overt subject appears to the left of *can* until Naomi reaches two and a half. The following pattern in the placement of *can* as a function of age emerges ($X_{obs}^2 = 35.33$, $p = .0001$)[11]:

(32)

age	initial	non-initial
1-2 years	57	1
2-3 years	14	17

The child Peter's placement of *can* conforms to a similar pattern (X_{obs}^2 = 26.76, p = .0001):

(33)

age	initial	non-initial
26 to 29 months	14	1
30 t0 34 months	17	56

To reiterate, the existence of a stage in English child language in which inflectional material occurs predominantly on the left periphery of the sentence provides support for the analysis assumed here. Modals are generated in INFL and the subject is generated within the VP, while the derivational processes which permute this underlying configuration must be explicitly acquired.[12,13]

4.5 Errors in the placement of negation.[14] Concurrent to the aux-first stage, the framework proposed here predicts a stage in which NEG appears on the left periphery of the child's negative utterances. I assume that the negative marker is generated in INFL and does not move, following Pollock (1989). If the child is not yet raising the subject from [SPEC,VP] to [SPEC,IP] position, then structures that conform to NEG-(SUBJ)-VP order in early English are expected. The relevant structures contain the negatives *not* and *no* in initial position (e.g., *no/not want spinach*).[15] In this case, the child Naomi

cannot serve as an example, simply because she produced very few negative utterances, none of them with *not* or *no*:

(34) before 1:10
can't push
can't

1:10;10 to 1:10;25
can't
I-can't
don't, like, it
can't open

I turn now to a look at the early negatives produced by other children. On the basis of the discourse, all cases discussed were determined to be nonanaphoric uses of the negative. That is, a child utterance such as *No want that*, determined from context to mean *No, (I) want that*, was not considered. Bear in mind that the aim is to show the existence of an early stage, for some but not necessarily all children, in which NEG fails to appear sentence internally.

The child Eve's first negatives at (1;9) conform to this generalization. She is not even using *can't* and *don't* at this time.

(35)
a. (Why) no Mommy giving baby Sarah milk? (x4)
b. Not Fraser read it.
c. Not have coffee.
d. Not write this book.

e. No eating that one
f. Mom(,) not eating chocolate ice cream

The utterance (35b) occurs in the following interchange:

Eve: Not Fraser read it.
Adult: Fraser's not going to read it.

Eve: Eve read it.

The context of the utterance (35f) indicates that *Mom* is not the subject:

Eve: Mom, I'm eating chocolate ice cream.
Adult: Eating chocolate ice cream? We're not eating chocolate ice cream now.
Eve: Mom not eating chocolate ice cream. Mom, (my) arm stuck.

The child Adam (Brown, 1973) between (2:3) and (2;5) also conforms to this pattern, although most of his negatives include *no* as opposed to *not*:[16]

(36)
a. No fall. (x2) (*imperative*) (2:3)
b. No I see truck.
c. No go back. (*nonimperative*)
d. No sunny outside.

e. No tear book. (*nonimperative*) (2:3)
f. No the sun shining. <x2> (2:4)
g. No heavy.
h. No not raining.
i. No fit. (2:4)
j. No sit dere (*imperative*) (2:5)

The contexts of (18b,e,f) are as follows:

Adult: Did you see the truck?
Adam: No I see the truck.
Adult: No, you didn't see it.

Adam: No, no tear book.
Adult: No, you won't tear the book.

Adult: Well, is the sun shining?
Adam: No the sun shining.

To mention a third example, the child Peter omits subjects from all of his negative utterances through (2:2) with one exception (*Me no*

push it).[17]. And at (2:2;13), there is one occurrence of a lexical subject to the right of the negative:

(37) Adult: Is Butch gonna walk?
Peter: no no no # no Butch is gonna walk # too cold

Thus, overall, Peter conforms to the neg-first profile, his main strategy being to leave out subjects altogether in these negatives.[18]

The account of this stage that I am proposing is similar in its description of the facts and in spirit to that originally proposed by Bellugi (Klima & Bellugi, 1966; Bellugi, 1967). Bellugi describes this early period as follows:

> During Period A... the children have some means for expressing some aspects of negativity. They attach a negative element *no/not* to a sentence nucleus, and the negative does not occur internally to the sentence ("No the sun shining"). (p.111)

In the grammatical framework assumed by Bellugi, this stage represents the D-structure input to a transformation which lowers NEG into the VP (cf. Klima & Bellugi, 1966). Within her model, then, the existence of this stage can be used to argue for the reality of the D-structure input to the transformation.

Others have objected to Bellugi's interpretation of early negatives. Bloom (1970), for instance, argues based on the speech of the children she studied that all cases of sentence-external negation are in fact anaphoric. deVilliers & deVilliers (1979) report extensive use of NEG + sentence to express true (nonanaphoric) negation, in the case of their son between 23 and 29 months. In a recent review of the debate surrounding this issue (deVilliers & deVilliers, 1985), however, they conclude that different children simply have different

strategies for expressing negation, in their view voiding the argument that external negation is a universal stage (cf., e.g., McNeill, 1970):

> ...The initial *no*-negatives do not seem to constitute a universal first step, but individual children may adopt such a strategy. (p. 82)

I am not in a position here to evaluate the merits of either of the two extreme positions. For my purposes, it is enough to point out that there are children at a particular stage who conform to the predictions of the framework argued for here.[19]
In the case of English acquisition, the child is learning a language in which the verb does not raise. If he begins to use negatives productively prior to productive raising of the subject, then sentence-initial negation ensues.

4.6 The non-clitic status of subject pronouns in English. The proposals motivated by my findings in French child language, taken together, predict very different analyses of subject pronouns in French and English. That subject pronouns in English are not syntactic clitics is revealed in their distribution as independent morphemes that can be separated from the verb, modified, contrastively stressed and conjoined (cf. Kayne, 1975, among others).

Certain tests of morphemic independence reveal that the subject pronoun has independent (nonclitic) status for the English speaking child. One test considers the recurrence of subject pronouns under clausal conjunction. According to Lambrecht (1981), clausal conjunction in spoken French involves the obligatory repetition of the

subject pronoun in the second conjunct. While the (a) examples are acceptable in standard or written French, the (b) examples are more likely to be generated in spoken French[20]:

(38) a. Il mange et boit comme un cochon
(He eats and drinks like a pig)

b. I-mange et i-boit comme un cochon
(He eats and he drinks like a pig)

(39) a. ?Je lis et puis ecris
(I read and then write)

b. J-lis et puis j-ecris
(I read and then I write)

As is clear from the English glosses in each case, (a) and (b) are equally acceptable in English; repetition of the pronouns, as in the (b) examples, adds an emphasis. Note that the contrast between standard and nonstandard French does not maintain in cases of nonclausal conjunction, such as conjoined participial and infinitival phrases. In these structures, the locus of conjunction is below inflection. If whole clauses of these types are conjoined, either both the auxiliary and the pronoun are repeated or neither are:

(40) a. Elle a mange et danse
(She ate and dansed)

b. Elle a mange et elle a danse

c.*Elle a mange et a danse

Turning to the child language data, we encounter clear evidence that Lambrecht's (1981) characterization of spoken French accounts for the French child's usage, and that this contrasts with the English child's usage. For Philippe, the conjunction of tensed clauses with a

pronominal subject invariably involves repetition of the subject pronoun. Here are some examples:[21]

(41)

a. Moi je sautes et je descends (P4)
(Me I jump and I come down)

b. Il se ouvre et il se ferme (P7)
(It opens and it closes)

c. Je vais ouvrir le couvercule et je vais faire... (P21)
(I'm going to open the cover and I'm going to...)

d. Ben on ouvre et puis on, on prend le gateau (P27)
(One opens (it) and then one, one takes the cake)

e. Je le met dedans et puis je le tiens (P28)
(I put it inside and then I hold it)

In examples (41b and e), all preverbal clitics recur along with inflection in the second conjunct. With conjunction of untensed clauses, as in the case of conjoined past participles, the pronoun, as expected, does not recur:

(42)

J'ai joue et travaille (P12)
(I (have) played and worked)

Conjunction in the speech of Philippe's mother conforms to the same patterns, as in the following:

(43)

a. Si tu as froid aux pieds et si tu enleves tes chaussons...
(If you have cold feet and if you take off your slippers...)

b. Tu t'assieds et tu le regardes
(You sit down and you watch it)

c. Je me l'ai demande et je l'ai pas trouve
(I asked myself that and I didn't find it)

d. Marc il boit et puis il trempe ses trucs

(Marc he drinks and then he wets his things)

Note that the use of puis (then) before the second conjunct, as in (41d,e) and (43d), seems to force recurrence of the pronoun. This is the basis for the "(?)" in standard French (21a) (V. Deprez, personal communication).

Considering that children often leave out unnecessary words due to processing limitations, the fact the French child repeats the clitic in the second conjunct is a strong indication that the subject clitic is a syntactic requirement in both clausal conjuncts (i.e., that it is attached to the tensed verb).

In contrast to the outcomes for French, the English data reveals language appropriate non repetition of the subject pronoun.[22]

(44)

a. Put my head down and cough (Eve (1:11))
b. We goed to the beach and saw...(Eve (2:2))
c. We goes to bed and wake up in the morning (Eve (2:3))

d. Walk in a circle and fall down like me did (Peter (2:5;3))
e. I roll it up and put the band (Peter (2:6;16))
f. Stepped on a shell and cut you finger (Peter (2;8;12))
g. They wake up and sleep in that bed (Peter (2:8;12))

h. I up by taking a bath and tell the story about...(Naomi (3:5)
i. And you walk around the house and look outside (Naomi (3:5))

j. He puts his instruments and listens to my ear (April (2:9))

There are numerous examples of conjunction of embedded VPs, where repetition of would be ungrammatical:

(45)

a. I going down and see Fraser (Eve (2:0))
b. I going go and see Fraser (Eve (2:0))
c. Hab go doctor and put bandaid on it (Eve (2:1))
d. I gotta hurry and get some milk (Peter (2:7))

e. I go put 'em on and skate (Peter (2:7))

On the basis of the data in (44), one can argue that the subject pronoun is not in inflection in the syntax for the English speaking child. For the French child, on the other hand, the analysis of the subject pronoun as a syntactic clitic holds up under the relevant tests. As reviewed in chapter two, French subject pronouns can be distinguished from other NPs, and from subject pronouns in English, on the basis of their inability to be separated from the verb, modified or conjoined to another NP[23]:

(46)

a. *Il, parait-il, est fou
He, it appears, is crazy

b. *Il, souvent, mange du fromage
He often eats cheese

c. *Ils tous partiront bientot
All of them will leave soon

d. *Jean et il partiront bientot
John and he will leave soon

Philippe commits no errors of the above sort. At the same time, there are instances of type (46d) in the English child language data:

(47)

a. You and Fraser be downstairs (Eve (2:1))
b. You and Papa have having tomato sandwich (Eve (2:2))
c. You and Cromer (Eve (2:1))
d. Peter and he see Roy (April (2:1))

4.7 Conclusion. In this chapter, I have shown that a profile of syntactic development constructed largely on the basis of findings in the study of French child language holds up against the facts of English child language, despite some striking differences between the

two child language populations. The fact that the grammar for English at no point exhibits a stage in which true postverbal subjects are licensed, but only in the case of unaccusatives, was attributed to a parameter which specifies fixed versus optional ordering of the verb and subject within the VP. Further, I highlighted the existence of a stage in English child language in which INFL is lexically instantiated but nonetheless separated from the VP, which contains the subject. This stage does not arise in French development because inflection is only realized in the form of bound morphemes in French. The NEG-initial stage that was observed in English was observed in French child language only in the case of one child at a very early stage; verb raising to INFL in French, which permutes the underlying NEG-initial order, emerges fairly early. In a final section, the syntactic necessity of subject clitics in French was made more salient in contrast to the non-clitic status of subject pronouns in English.

This clustering of properties, including the null subject option, visible delays in the mastery of inflectional processes and errors in the placement of negation and *be*, is readily accounted for on the hypotheses that the subject is generated within the VP and that derivations which re-order constituents must be acquired. If these derivational processes reflect parametric choices, as they in fact appear to, then this may be one factor in the short developmental delays observed (cf. section 2.3). It is predicted that once the child acquires affix-lowering, the VP-internal subject will no longer be in a case-assigned position, triggering in turn the onset of subject raising to [SPEC,IP] position. Before this time, there is strong

evidence that the subject does not raise out of its base position. I turn now to some comparative and contrastive aspects of Spanish child language.

-- Notes --

1. Bloom (1987) also attributes early knowledge of basic word order in English to a parameter that fixes subject-predicate order.

2. Pollock (1989) and Chomsky (1988) argue that NEG blocks affix-lowering, so that an auxiliary is necessary to bind inflectional affixes. *Do* is inserted to save a structure that lacks the necessary auxiliary.

3. I assume, following Jaeggli & Hyams (1988), that *pro* is identified by an empty discourse topic (cf. Huang, 1984) in early English and French child language, given the absence of overt specification of agreement at this stage. That the child at this stage has topicalization is evident from other cases of early A'-movement, such as the early topics discussed in chapter three above and the well-known early acquisition of wh-movement.

4. All utterances considered here, unless specifically indicated otherwise, are spontaneous declarative sentences. These sentences were examined in the context of discourse between the child and her parents, and as such were determined not to be imperatives, questions, or repetitions of all or part of an immediately preceding adult utterance. Also excluded from calculations over subjects are utterances containing demonstratives and other deictic forms that have been argued extensively to be unanalyzed units at the early stages (Bowerman, 1982; Peters, 1983; deVilliers & deVilliers, 1985). These include: *That is ..., This is..., There is ... and Here is ...; That's ..., There's ... and Here's ...* The motivation for viewing these as rote-learned forms is reviewed in section 4.4 below.

5. Following Brown (1973), rate of morpheme use is calculated as the number of utterances in which the morpheme is used over the number of utterances in which the morpheme is expected.

6. Parentheses around words indicate uncertain transcription.

7. Note that most of the exceptions to the unaccusative generalization are produced by the child Adam at (2:3) (cf. (13) above). That the majority of exceptions in the data are confined to a given child at a given stage suggests that they may be practice or groping patterns in the sense of Braine, 1976).

8. Pinker (personal communication) suggests that the phonological salience of *-ing* relative to other inflectional morphemes is in part responsible for its early acquisition.

9. The auxiliary *have* arises very late (Brown, 1973). Indeed, *have* is used exclusively as a main verb until more advanced stages in the development of American English and thus will not be considered here.

10. Even if the utterances which I am considering to be formulaic (e.g., *this is ...*) are included, there are still far more *is*-initial utterances at early stages.

11. Note once again that it is possible that some of the utterances in question form are intended declaratively, but this is frequently difficult to determine.

12. It is of course conceivable that not all children will overtly pass through the stage described in this section. The child who acquires subject raising early, for example, might not.

13. These findings are all the more striking when one considers the nature of the input. Sentence-initial auxiliaries are frequently omitted colloquial English, sometimes along with the subject (cf. Akmajian et al., 1984):

(i)

a. Have the time?

b. Gotta run.

c. John coming to dinner?

d. Made it to the city lately?

14. The discussion and analyses in this section form part of ongoing work in collaboration with V. Deprez. For more detailed analyses and crosslinguistic comparison, the reader is referred to Deprez & Pierce (in preparation).

15. Unanalyzed forms that are excluded from this analysis include *(I)-can't, (I-)don't, (I-)won't*. It has been argued that *can't* and *don't*, which are the earliest modals to appear, are unanalyzed markers of negation (Bellugi, 1967; others). Failure to utter the affirmative modals on their own until a later stage indeed suggests that this is so. In addition, some children first use the subject pronoun *I* in these constructions, in the absence of other uses of the pronoun. For instance, the child David at 21 months, discussed in Braine (1976), uses *I* solely in the routines *I-can't* and *Can-I*. These routines continue at 22 months, along with more widespread distribution of *I*.

16. It is my impression after looking at a substantial amount of this data that children sometimes confuse *no* and *don't*. For example, Adam01 utters *no fall* as an imperative in place of *don't fall*. This confusion may have phonological roots.

17. The non-nominative pronoun here may well be in topic position

18. There are other possible accounts of the negation-internal subject facts just discussed. For one thing, many of these are marked in the transcripts as responses to questions. As such, they may be interpretable as cases of propositional negation in which the a sentence-medial aux + n't constituent has dropped; there are other instances of neg-dropping noted in the transcripts. As an example, the utterance "No I see truck" might be an approximation of "No, I don't see the truck" in the adult language. Note, however, that this fails to account for early negative utterances with *not*.

19. It should be noted that Lebeaux (1988) also hints at an analysis of external negation along the lines of the VP-internal subject hypothesis:

> A Kitagawa-Sportiche type analysis of the base structure of S receives striking confirmation from the acquisition data, if we assume that negation is fixed throughout the acquisition sequence. (p. 38)

20. The examples in (38) and (39) are from Lambrecht (1981), p. 24.

21. There are only a small number of clausal conjunctions with subject pronouns (about 10 examples counted) in the Philippe transcripts, but there are no exceptions to the stated generalization.

22. Once again, note that there are few cases, most from older stages. According to Lust (1977;1980), clausal conjunction becomes productive only at about two and a half years.

23. The examples in (46) are from Kayne (1975), p. 84-85.

Chapter 5: Findings in Spanish child language

In the first part of this chapter, I review anecdotal evidence from Spanish child language which, like the Italian data, shows early variability of word order with an overall preference for subject omission. There is, however, some data which suggest that the Spanish child passes through an early phase in which subject-verb order predominates -- in contrast to Bates' (1976) findings of a preference for verb-subject order in Italian early on. In the second part of this chapter, I describe the results of an original empirical study encompassing two experiments on the acquisition of the passive in Spanish. A full report on these experiments is provided in Appendix A. While the study was conceived to address to the acquisition of the passive, some of the results obtained are quite relevant to the issues raised here. Namely, they show that certain constructions with subject NPs in derived position are hard for Spanish-speaking children (ages three to six) to comprehend and produce.

5.1 Data from spontaneous speech. In Pina (1984), the author describes the linguistic development of her son Rafael from the start of his acquisition of (Madrid) Spanish as a native language through advanced linguistic stages. Although no statistical information concerning the child's use of various syntactic structures is provided, Pina presents many examples of utterance types according to age, and often mentions which types were used in abundance and which

to a lesser extent. From the text, the following points relevant to my concerns here are clear.

5.1.1 Word order. At the two-word stage (18-24 months), subject-verb order is utilized more than verb-subject order. Of the 29 utterances produced in the simple present tense and recorded, three contain postverbal subjects, 14 contain nonpronominal preverbal subjects and 12 contain null subjects.[1] Some examples follow in (1) to (3):

(1) subject-verb 18-24 months

a. nena come (*child eats*)
b. senor habla (*man talks*)
c. Rita pega (*Rita hits*)
d. gafas rompes (*glasses break-2ps*)
e. autobus anda (*bus goes*)
f. cabeza duela (*head hurts*)

(2) verb-subject 18-24 months

a. viene camion (*comes truck*)
b. anda autobus (*goes bus*)
c. (me) pega papa (*hits (me) papa*)

(3) null subject 18-24 months

a. tira (*throw-3ps*)
b. bajo (*get down-1ps*)
c. juega (*play-3ps*)

Concerning the examples in (1) through (3), first note the lack of variability in agreement marking on the verb. With only two exceptions, all verbs occur with third person singular (*-3ps*) endings. One exception ((1d)) involves an agreement error: *gafas* is in the plural (like the English word *glasses*), and thus requires the third person plural (*-3pp*) marking *-en* on the verb. The second exception is (3b), which includes the first person singular (*-1ps*) marking *-o* on

the verb. According to the text, certain examples which lack this ending are in fact intended as first person verbal forms. For instance, Pina indicates that the example in (3c) represents an attempt on the part of Rafael at the sentence *(yo) juego (I play)*. It should also be noted that two of the postverbal subject constructions in (2) occur with unaccusative verbs, *venir (to come)* and *andar (to go)*. That is, the argument in these constructions is analyzed as being positioned in [VP,NP] (cf. section 4.3).

There is corroborating evidence from Gonzales (1970), based on his observation of a small group of Mexican-American children, of infrequent postverbal subjects early on. In his data, the only postverbal subjects at 24 months (the earliest period of observation) occurred with the verb *estar* (locative *to be*). There were few of these, one example being *ahi esta carro (there is car)*. The remaining verbal utterances at this stage contained null or nonpronominal preverbal subjects.

While there is seemingly little variability of word order in the 18-24 month period, Pina describes the 25-30 month period as rich in such variability. Of the many utterances containing postverbal structures at this time, intransitive verb-subject constructions appear to be the most common. Pina notes, further, that many of these contain the reflexive clitic *se*. The examples from the text (p. 263-4) are:

(4) verb-subject 25-30 months

a. marcho papa (*walked Papa*)
b. (se) me cae el elefante (*fell to me the elephant*)
c. no pasa tren (*doesn't pass train*)
d. se cayo mama (*fell Mama*)
e. se va tren a la puente (*goes train to the bridge*)
f. no puede nene (*no can child*)
g. no ha venido cartero (*no has come the mailman*)

Less common, but still used (in Pina's own words), are sentences conforming to V-S-O linear order:[2]

(5) verb-subject-object 25-30 months

a. cojo papa elefante (*caught Papa the elefant*)
b. arreglao papa radio (*fixed Papa the radio*)
c. pega nene oso malo (*hit child bad bear*)
d. pega el nene elefante (*hit the child elephant*)

Finally, Pina describes the order V-O-S as being less common in comparison to V-S-O. The two examples in the text are:

(6) verb-object-subject 25-30 months

a. cogiendo papeles yo (*getting papers I*)
b. coge galletas Rita (*get crackers Rita*)

In examining (4) through (6), note once again that all of the examples in (4), with one exception ((4f)), occur with unaccusative verbs. Generalizing over (1) and (4), and assuming that Rafael is representative of other children at this stage of grammatical development, one can say that VS constructions in an early stage of Spanish acquisition tend to be unaccusatives. However, the examples in (5) and (6) show that the child in the post two-word stage produces postverbal subjects in other constructions, in which the subject is arguably in VP-internal subject position. Within the model of the grammar as it is construed here, (5) and (6) reflect distinct

underlying word orders. Assuming that the verb raises to inflection in Spanish, as in French, the V-S-O constructions in (5) result after verb-raising out of a VP with an underlying S-V-O ordering of constituents.[3] Those in (6), in contrast, arise out of an underlying order of V-O-S. Alternatively, they could be produced by rightward movement of the subject and adjunction to VP (cf. Torrego, 1984), whereas V-S-O constructions are only derived via verb raising.

More data of this type, showing that V-S-O order is more productive in Spanish and emerges earlier than V-O-S, could be viewed as indicative of fixed NP_{subj}-V' ordering within VP in Spanish, where raising of the tensed verb from underlying S-V-O leads to V-S-O. This goes against the hypothesis of underlying V-O-S order in Spanish (cf. Contreras, 1985). Furthermore, it lends support to the claim that postverbal subjects surface only in languages which manifest verb fronting. Others have indeed argued that Spanish has an inherent bias toward V-S-O (cf. Green, 1976). Though I do not presume to resolve this controversy, these issues are discussed further in part 2 of this chapter.

5.1.2 Inflectional affixation. If 29 verbal utterances produced between 18 and 24 months (see above) sounds like a surprisingly low number, this is because the majority the Rafael's verb-containing utterances during this period were not in the present indicative tense. Pina reports that the earliest verbs used in two-word utterances were tenseless forms. That is, the earliest verbal forms -- apparently constituting the majority of forms produced through 22 months -- were imperatives, infinitives, past participles and

progressive participles, whereas the simple present tense appears to predominate after that.

> El *imperativo-desiderativo* fue una de las dos formas verbales mas tempranas... La otra fue el *infinitivo* presentando un indice mas alto de occurencia... Tambien en la etapa de las dos palabras (hasta las 24 mesas) registramos casos con *gerundio*...Y con *participio* ...(p. 245).[4]

Two examples of each type follow:

(7) imperatives

a. canta Lola (*sing Lola*)
b. mama abre (*open Mommy*)

(8) infinitives

a. nenes sentar (*children sit*)
b. beber agua (*drink water*)

(9) progressives

a. papa durmiendo (*Papa sleeping*)
b. hombre hablando (*man speaking*)

(10) passive participles

a. puerta cerrada (*door closed*)
b. roto tren (*broken train*)

The utterances in (7) are listed as imperatives by Pina, presumably on the basis of discourse context. As is clear, and as the author notes, the utterances in (9) and (10) are missing the copula (estar). For example, (9b) is the child's rendition of *el hombre esta hablando (the man is speaking)*.

Pina further observes that while the earliest verbal clauses reveal knowledge of the distinctions among tenses (i.e, present, imperative, progressive and past), knowledge of agreement early on is barely evident. To quote from Pina once again:

> Al termino de la etapa de las dos palabras, el verbo no encerro para Rafael otros matices que los temporales (las categorias de persona y numero eran incipientes).(p. 247).[5]

As support for this claim, Pina notes that most early tensed utterances are specified for third person-singular, resulting in explicit errors of agreement. Consider examples (1d) and (3c) above, as well as the following:

(11)

a. todos quemas (queman)
   (all burn-2ps)

b. puede abrir (no puedo abrir)
   (I) (no) can-3ps open)

At about 24-25 months, Rafael begins to mark agreement more consistently. In Gonzales (1970), in accordance, there is one example of explicit subject-verb agreement at 24 months, e.g. *son pollos (are chickens)*, while there are many at the subsequent observation (30 months).

I would like to consider the examples in (7) through (10) somewhat further. Recall from the discussion of English child language in the previous chapter that progressive participles are base generated verb forms. Emonds (1985) analyzes present participles both in English and in Spanish as base forms (bare VP's). Hyams (1986b) also proposes that V+*ing* forms are lexically, as opposed to syntactically, derived at early stages in English grammar. This approach, which provides an explanation for why the progressive morpheme is first in the order of acquisition of English grammatical

morphemes (cf. section 4.4), may also apply to Spanish. This is, in fact, what Emonds (1985) argues for adult Spanish.

Similarly, it might be argued that the passive participles in (10) are lexically derived adjectival participles for the child (cf. Borer & Wexler, 1987). Infinitives, too, may be analyzed as being base generated verbal forms (cf. Emonds, 1985). At least, it is clear that infinitives do not normally raise to INFL (Pollock, 1989). Finally, note, that the inflectional endings on the *tu* (informal) imperatives in (7) are identical to regular 3ps affixes in the present indicative. All in all, then, an interpretation of the earliest verbs in Spanish as base generated forms which do not necessarily undergo syntactic affixation of inflectional morphology is consistent with findings concerning progressives in English child language and infinitives in French child language. While the Spanish child acquires a complex system of inflectional affixes quite early, we can still discern an initial stage in the grammar of Spanish before the onset of productive syntactic affixation and, hence, before the onset of verb raising to tense. If this approach is along the right lines, than the early stage of inflexible subject-verb word order may also be accounted for as a pre-verb raising stage.

5.1.3 Subject pronouns. In comparison to English, writes Pina, mastery of the system of personal pronouns in Spanish appears to be somewhat delayed. Pina attributes this to the optionality of subject pronouns in Spanish. The only pronouns to occur at the one-word stage are demonstratives. Some personal forms, both nominative and accusative, are evident during the latter part of the two-word stage

(22-25 months), around the time that agreement morphology begins to emerge.

The two examples given in the text, apparently the earliest instances of personal subject pronouns, are:

(12)
a. yo (voy) a tudia (*I'm going to study*)
b. abre tu (*open you*)

Note the occurrence of a postverbal subject pronoun in (12b). In contrast to French, subject pronouns in Spanish are strong forms, and thus distribute like lexical subjects. Pina also reports that the subject clitic *se* surges in use at this time. Turning once again to Gonzales (1970) for corroborating evidence, he reports complete absence of subject pronouns at 24 months, although use of reflexives clitics and *se* is well-established at this time. Here are some examples from the 24 month stage in Gonzales:

(13)
a. Juan se va (*Juan leaves*)
b. me queme (*burnt myself*)
c. te fuiste, Mami (*you left, Mommy*)

I return in part two of this chapter to the question of the clitic *se*.

5.1.4 Negation. Finally, we look briefly at the acquisition of negation in Spanish. The negative particle that expresses simple negation in Spanish, *no*, is clearly not the equivalent of *pas* in French or *not* in English. Rather, it is akin to the negative *ne* in French, and *non* in Italian, occurring as a clitic on the left periphery of the inflectional complex. Verbs that raise to INFL in Spanish and Italian still surface to the right of this particle.

However, they occur to the left of other negative elements in tensed structures (cf. Rizzi, 1989):

(14)

French:	Jean ne mange plus.
Spanish:	Jean no come mas.
Italian:	Jean non mangia piu.
	Jean NEG eats more.

Turning to acquisition data, Pina reports no errors in placement of the negative *no* with respect to the verb. Without exception, Rafael places *no* to the left of the verb. On occasion, however, the negative appears to be absent from utterances intended as negative (e.g., *pasa nada (happens nothing))* intended as *no pasa nada;* and *puede abrir* intended as *no puedo abrir ((I) cannot open))*.

Pina (p. 266) characterizes Rafael's negative utterances at the two-word stage as instantiating the following patterns:

(17) two-word stage

a. no + object *no caca (no caca)*
b. no + verb *no hay (there is no)*
c. no + verb + object *no hay galletas (there is no crackers)*
d. subject + no *yo no (not me)*

Note in particular the absence of the pattern subject + no + verb (+ object) at this stage. Structures conforming to this pattern would be clear evidence of subject raising. The example in (17d) should most likely not be interpreted as an instance of subject raising.

In the next stage in the acquisition of negation that Pina describes, beginning at 26 months, Rafael adds imperative structures with a sentence-initial NP to his negative repertoire:

(18) 26 to 30 months

a. papa, no hables (papa, don't talk)
b. mama, no tires libro (mama, don't take the book away)
c. mama, no duermas mas (mama, don't sleep anymore)

These, too, cannot be analyzed as involving subject raising, but rather as involving topicalization. Only somewhat later, at about two and a half to three years, do instantiations of subject + no + verb appear. Here are some examples from this older period:

(19)
a. yo no peso mucho (*I don't weigh much*)
b. eso no vale (*that doesn't count*)
c. tu no sabes hablar? (*you don't know (how) to talk?*)

Thus, I argue that the course of development evidences a very early stage prior to the mastery of subject raising. If it is true that the child passes through such a stage, as he appears to do based on the findings concerning stages in the acquisition of Spanish negation, then we may analyze early cases of SV order such as those in (1) (prior to productive inflectional affixation) as underived constructions with the subject and verb located within the VP. This clearly holds of the examples with participles and infinitives in (8) through (10). That VS order should fail to be evident at some early stage suggests that it may not be a base generated order. The earliest productive cases of VS order, recall, were unaccusatives (see (2) and (4)), the analysis of which does not necessarily entail -- on the basis of liner order of constituents -- raising of the verb. Finally, the scarcity of V-O-S constructions in the Spanish child language data also suggests, albeit tentatively, that the order of the verb and the subject within the VP is fixed to underlying S-V order, as in English and perhaps French.

5.2 Discussion of experimental findings on the acquisition of Spanish passive. In this section, I discuss the motivations and outcomes of two experimental studies on the acquisition of the passive in Spanish, focusing on the relevance of the experiments to the issue of word order and case assignment in child language. The main finding to emerge from these studies is that young children appear to have the capacity to assign nominative case directly to the postverbal subject of the morphological passive construction, at the same time that they have difficulty comprehending and producing passives in which the subject occurs in derived position. The reader is referred to Appendix A for a full description of the procedures and results of the experiments.

5.2.1 Experiment One. This experiment was designed to test the no-A-chains hypothesis of Borer and Wexler (1987). According to this hypothesis, the child lacks A(rgument)-chains (i.e., nonlocal assignment of features) until some maturationally determined point. The Borer-Wexler approach was primarily motivated to account for the late acquisition of syntactic passives in English. In the periphrastic syntactic passive, the D-structure object moves to nonthematic subject position to be assigned case, since the accusative case of the verb is absorbed by the passive morphology (cf. Jaeggli, 1986). This movement of an NP results in an A-chain:

(20)
a. D-structure: e was thrown the ball
b. S-structure: The ball$_i$ was thrown t_i

Experiment One tested the hypothesis that passives which presumably have no A-chains -- namely, passives in which the subject

occurs postverbally -- will be acquired earlier than passives containing an A-chain. That is, it was predicted that younger children would find (21a) easier to comprehend than (21b):

(21)
a. Fue visto Mickey por Donald (*was seen Mickey by Donald*)
b. Mickey fue visto por Donald (*Mickey was seen by Donald*)

This hypothesis was disconfirmed. In fact, passives with postverbal subjects elicited significantly poorer performance in a comprehension task than passives with derived, preverbal subjects. I take these overall results to indicate that the postverbal subject in the Spanish periphrastic passive is not assigned case directly in [NP,VP] position. I argue that [NP,VP] position of the passive participle is an inherently caseless position (cf. Fabb, 1984). Thus, the D-structure object must move in order to be assigned case.[6]

The control condition of experiment one is particularly relevant to the questions raised in the preceding pages. In the control condition, children were tested for their comprehension of S-V-O and V-O-S constructions in the preterit (simple past) tense. There is an example of each in (22):

(22)
a. S-V-O: Juan peino a Maria (*Juan combed Maria*)
b. V-O-S: Peino a Maria Juan (*Combed Maria Juan*)

Contrary to the expectation of no effect of word order in the active condition, children at all ages performed significantly better on S-V-O than on V-O-S test sentences.[7]

Consistently poor comprehension of V-O-S constructions on the model of (22b) (below 60% correct responses within the oldest age

group tested, five to six years), concurs with the limited production of V-O-S in spontaneous speech of the Spanish child discussed above. It thus serves as a further indication that V-S is not generally accessible at early stages, the base generated word order being S-V. Another way to interpret this outcome is in terms of late acquisition of the non-local assignment of features (cf. Borer & Wexler, 1987). Assume that the underlying word order is S-V, such that every verb-initial construction evidences verb raising. It is possible that verb raising with transitives is difficult for the child because the transitive verb must assign case and a theta role to its object. When the verb raises, it is no longer in a local relation with the object and thus cannot accomplish feature assignment to the object. In this way, the early grammar of Spanish may block V-S-O constructions.[8]

5.2.2 **Experiment Two.** This second study examined the development of the morphological or reflexive passive in Spanish, using an elicited production task.[9] Because the morphological passive is far more common in spoken Spanish than the copulative passive, the results of experiment two are in this sense more reliable than the results of experiment one. The guiding hypothesis here was the same as in the experiment one. Given direct assignment of nominative case to the postverbal argument in [NP,VP] position (cf. (23b), these structures will be produced more readily by young children than equivalent sentences in which the NP argument has been preposed (cf. (23a)):

(23)

a. S-V: Se cerraron las puertas (*were closed the doors*)

b. V-S: Las puertas se cerraron (*the doors were closed*)

In (23a), *las puertas* has moved to [SPEC,IP] position, forming an A-chain with its trace in [NP,VP] position.

The hypothesis was strongly supported in the case of experiment two. Children in all age groups failed to produce the reflexive passive in S-V order most of the time. V-S order with this passive was strongly preferred, to the extent that children often produced V-S order when being asked to reproduce S-V order. This finding is taken to indicate that nominative case can be assigned directly to [NP,VP] in these constructions. Because all test constructions were in the plural, and plural subject-verb agreement was marked with pre- and postverbal subjects, the relevant case is clearly nominative, not accusative. I maintain that nominative case can be assigned into object position of the morphological passive when the verb raises to INFL or, following Baker (1988), is incorporated into inflection. This same analysis holds of direct assignment of nominative case to the argument of unaccusative verbs.[10]

The active control condition of experiment two included two types of active constructions, the simple intransitive (cf. (24a)) and the active reflexive (cf. (24b)):

(24)

a. Los ninos cantaron/Cantaron los ninos
(*the children sing*)

b. Los ninos se lavaron/Se lavaron los ninos
(*the children wash themselves*)

In this condition, no significant effect of word order emerged. It is worth noting, however, that the younger children performed better on S-V than on V-S intransitives (73.1% versus 65.4% correct) and reflexives (65.4% versus 57.7%). These children also tended to produce S-V order when asked to reproduce V-S order in intransitives. Though in no way decisive, these findings may be taken as further testimony to the underlying preference for S-V over V-S order in the emergence of Spanish syntax.

5.2.3 **Summary.** There are two types of raising to [SPEC,IP], raising from object position, as in passives and unaccusatives, and raising from VP-internal subject position. In the first part of this chapter, I presented natural production data from a Spanish speaking child which, like the data from early French and English child language, evidences a delay in the acquisition of subject raising from [SPEC,VP]. A strong source of evidence for this delay in Spanish was the absence of negative constructions with overt preverbal subjects at early stages.

The results discussed in part two of this chapter mostly concern raising from the object position in passive clauses. In both experiments, structures with derived subjects caused difficulty for children at all ages tested. This finding is in accord with the data presented in chapter three to the effect that only unaccusatives

produced by young English speaking children contain postverbal arguments. These results also concur with those of Borer & Wexler (1987) on the late acquisition of passives in English and Hebrew.

In sum, it is apparent that the passive is a late acquisition and that difficulty with the passive involves complexities beyond subject raising. Although the data examined in this dissertation are not conclusive in this regard, it does not appear as though VP-internal subjects fail through the age of five years to raise productively to a higher subject position in active sentences.

The salient result of this experimental study, then, is that the passive with a derived subject is a marked structure from a developmental perspective. This result is consistent with the Borer-Wexler hypothesis. More generally, it is consistent with the predictions of the model of early grammar presented here in showing that subject raising is delayed relative to the emergence of principles which license arguments in their D-structure positions.

-- Notes --

1. This is from Table 15 on p. 246. Pina does not state explicitly that this table, entitled "Formas verbales de los 18 a los 24 mesas" is exhaustive, but this appears to be the case.

2. In the cases of (5c,d), I am deducing that V-S-O, as opposed to V-O-S is the appropriate interpretation.

3. According to Contreras (1987), Spanish does not require strict adjacency for case assignment.

4. The English translation of this is:

> The imperative-desirative was one of the earliest verbal forms. The other was the infinitive, with a higher index of occurrence. Also at the two-word stage, we note cases of the gerund. And of the (passive) participle.

5. English translation: At the end of the two-word stage, Rafael's use of the verb included only indications of tense (the categories of person and number were incipient) (i.e., just beginning).

6. It should be noted that the periphrastic passive is largely a literary form in contemporary Spanish, there being a strong preference for use of the morphological or reflexive passive in spoken Spanish (cf. Green, 1975). This consideration renders the results of the passive condition in experiment one somewhat tentative.

7. Unfortunately, no V-S-O test sentences were administered. Judgments from adult informants indicate, however, that V-S-O may be the preferred postverbal subject order in these constructions.

8. Hyams (personal communication) suggests that verb raising with transitives may be blocked generally in this manner in early grammar.

9. As mentioned in Appendix A, a comprehension study proved impossible in the case of the morphological passive, due to the underlying ambiguity of these structures.

10. In light of this proposal, it is interesting to note that performance on V-S passives by the youngest age group (three to four years) was below chance, although better than performance on S-V passives. The young children performed poorly largely because they tended to produce the verb with singular agreement, as in (i), as opposed to reproducing the verb with plural agreement to agree with the postverbal subject, as in (ii):

i. Se rompio las ventanas (*Arb. broke the windows*)

ii. Se rompieron las ventanas (*Were broken the windows*)

In (i), the structure preferred by young children, the NP is assigned accusative case. In (ii), it is assigned nominative case. This might be an indication that the young children had not yet acquired verb raising or incorporation.

CHAPTER 6: Conclusion

Despite a long history of reports in the child language literature concerning the surprising extent of nonstandard word order in early French, this phenomenon has until now not been accorded a grammatical explanation. Previous discussion of these facts centered on potential extragrammatical motivations and analyses.

I have attempted here to account for the abundance of postverbal subjects in French child language on the basis of a combination of syntactic factors. The model of the grammar which incorporates the option to generate the subject directly in postverbal position contributes crucially to this account. An explanation for the initial absence of subject raising, in terms of an innate bias towards underived structures, also sheds light on the endurance of the postverbal subject stage. The analysis of subject pronouns in French as inflectional clitics further motivates the early grammar to generate postverbal subjects in argument position.

I take the position here, with many others, that the French language is in a transitional period, in which it is approaching the Northern Italian dialects in terms of the clitic status of subject pronouns and the licensing of postverbal subjects. According to a number of typologists, one force in language change is the gradual reanalysis of peripheral or informal structures as core phenomena, whereby the grammar shifts to incorporate new forms. I am proposing here that this is the case with right dislocations in French, and

claiming that this process is more transparent in child language than in adult language, since the force of transition may be counteracted in the adult language. A crucial step in this process is the loss of pragmatic or prosodic marking on the particular structures discussed above. Presumably, the currents of language change will be more visible in the language of the child because of a purer manifestation of core principles, before they are masked by language-specific, idiosyncratic acquisitions.

I have attempted in this dissertation to provide confirmation of recent proposals in the theoretical literature on the basis of crosslinguistic data from child language. Assuming the VP-internal subject hypothesis, the verb raising analysis of inflectional morphology in French, the affix lowering account of inflectional morphology in English and a principled bias in UG toward isomorphism, we succeed in accounting for a cluster of properties in the early grammar.

Specifically, null subjects in English and French child language fall out naturally on the theory that they are VP-internal subjects, assigned case in base position. Also on account of the VP-internal subject approach, postverbal subjects in French are construed as unmoved VP-internal subjects, either in right branching SPEC position or in left branching SPEC in constructions in which the verb has raised. The absence of postverbal subjects in English is attributed to the absence of verb raising in that language and perhaps to a parametric choice of fixed subject-verb order within the VP as well.

Contrasting patterns in the acquisition of inflection in French and English, and the related patterns in the placement of negation, lend support to the verb raising versus affix lowering account of inflectional affixation in the two languages. One surprising outcome was the substantial tendency in early English grammar towards auxiliary-initial structures, a tendency strong enough to lead the child to place not only NEG but also *be* in initial position in the context of declarative utterances.

A clear theme in the early grammars of French, English and Spanish is the delay in the acquisition of subject raising. In all three cases, in spontaneous speech as well as in experimental results, young children fail to produce sentences which contain subjects in derived position. In contrast, the assignment of nominative case to the VP-internal position of simple sentences, as well as passives and unaccusatives, is an early acquisition.

I conclude that the data from French, English and Spanish, taken together, constitute striking confirmation of the VP-internal subject theory. Reformulating the economy of derivations guidelines as a metric for the time-course of acquisition, structures with VP-internal subjects unmoved are predicted. I have shown here that this prediction is borne out by the facts of early language. For my purposes here, it is of little concern that the window of delay prior to the onset of particular derivational processes is small. It has been enough to show that it exists, and that one can see through it to the roots of syntactic structure.

I hope, then, to have provided convincing evidence for recent proposals in the syntactic literature on the basis of crosslinguistic data from early language. Assuming the VP-internal subject hypothesis and the syntactic attachment of inflectional affixes, we succeeded in accounting for a cluster of findings in child language. In turn, this success is interpreted as substantiation of the relevant theoretical assumptions, and of the VP-internal subject model in particular.

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APPENDIX A: Two experiments on passives in Spanish child language

This appendix describes two experiments designed to study the acquisition of the passive construction in Spanish. In concurrence with results of research on the development of the passive in English, the acquisition of the copulative passive by Spanish-speaking children has been found to be markedly delayed in comparison to active constructions (Keller, 1976). Previous studies, however, examined only the copulative passive, which is in fact one of a number of constructions representing passive voice in Spanish.

A broad goal of these experimental studies, therefore, is to extend the research on Spanish passive to other passive constructions. A specific motivation is to test a particular theoretical hypothesis proposed to account for late emergence of the passive in child language. Borer and Wexler (1987) claim that argument chains, which underly the derivation of the syntactic passive, are not accessible to the young child.[1] That is, the child is construed as lacking A(rgument)-chains until a certain maturationally determined point. The absence of A-chains from early grammar is argued to explain late comprehension and production of the passive.

Spanish can serve as a test case for this hypothesis. First of all, the verbal passive can be formed in Spanish both as in (1a) and as in (1b).

(1) a. Este libro fue escrito en Mexico.

b. Este libro se escribo en Mexico.

(*This book was written in Mexico.*)

The sentence in (1a) is a periphrastic passive, with the auxiliary verb ser (*to be*) and a passive participle. The reflexive or morphological passive in (1b) contains the subject clitic se and the preterit tense of the verb escribir. This is in fact the more common form of the passive in colloquial Spanish (Green, 1975). The structures in (2), with the subject occurring to the right of the verb, are also acceptable:

(2) a. Fue escrito este libro en Mexico.

b. Se escribo este libro en Mexico.

These inverted structures are crucial to evaluation of the Borer-Wexler hypothesis because subjects in postverbal position may well be marked with nominative case directly, without formation of an A-chain. If the Borer-Wexler hypothesis is on target, we would expect passives that do not contain A-chains to be acquired earlier than passives that do.

Copulative passives (cf. (1a) and (2a)) are the focus of experiment one, a comprehension study. The production of morphological passives (cf. (1b) and (2b)) is investigated in experiment two. In a final section, results of the two experiments are compared and their implications for language acquisition and linguistic theory are explored.

EXPERIMENT ONE

In this experiment, children's comprehension of full passives (containing by-phrases) is compared with performance on actives.

METHOD

Subjects

This experiment tested 18 children in attendance at a public pre-school and kindergarten in Ensenada, Mexico. 13 boys and 5 girls were tested. The children, who ranged in age from 3;7 to 5;9, were acquiring Spanish as their first language. They were divided into three age groups according to their class at school, where class membership was determined by year of birth. The three age groups, each containing six children, are as follows: Group 1 -- three to four years, Group 2 -- four to five years, and Group 3 -- five to six years. Subjects were selected according to their willingness to participate in the study.

Design of the test constructions

The overall design of the experiment, including all test sentences, is illustrated in Table 8. A 2-by-2 design was employed, where the two

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Insert Table 8 about here

---

independent variables were Voice -- active versus passive -- and Word Order -- subject-verb (SV) versus verb-subject (VS). There were four

sentences in each condition, resulting in 16 test items. Four verbs (peinar *to comb*, lavar *to wash*, ver *to see* and oir *to hear*) were tested. Each verb occurred once in each of the conditions. All test constructions appeared in the past tense and contained two NP slots. Four proper names, each corresponding to a different cartoon figure in the picture-identification task, were used to instantiate these NPs.

The passive conditions contained an additional, nested factor: agreement cue versus no agreement cue. That is, only two of the verbs in the passive (fue peinado and fue lavado) co-occurred with the NP pair marked by a gender distinction (i.e., "Juan" and "Maria"). Because passive participles are marked for agreement with the passive subject in Spanish, the marking on the participle in these cases (e.g.,lavado versus lavada) serves as a cue to the subject of the passive sentence. The other two verbs (fue visto and fue oido) appeared with the NP pair "Mickie" and "Donald". Because both of these NPs are masculine proper names, agreement on the participle did not vary.[2] The number and relative positions of the NPs were otherwise counterbalanced.

Task, test materials and general procedures

This study used a picture-identification task to test subjects' comprehension of the four construction types described above. Along with each test sentence, the subjects were presented with two cartoon pictures. Each picture contained two characters (either Juan and Maria or Mickie and Donald) involved in one of the four possible activities. In each pair of pictures, one picture corresponded to the test

sentence being presented, and the other picture to the semantic reversal of the test sentence. For instance, the child heard the experimenter say "Juan combed Maria". At the same time, he was instructed to look at two pictures, one in which Juan is combing Maria and the other in which Maria is combing Juan. The subject's task was to point to the correct picture. An example, including test sentence, pictures and instructions to the subject, is shown in Figure 3 of Appendix B.

Insert Figure 3 about here

The picture pairs were organized into a bound book. Half of the time, the pictures appeared side-by-side. The other half of the time, the pictures appeared one directly above the other from the subject's point of view. This was done to prevent subjects from forming the habit of pointing to one position within the response space. Positions of correct and incorrect picture responses were counterbalanced.

Subjects were tested one at a time by two native speakers of Spanish, one to administer the test and the other to record responses on a prepared response sheet. The experimenters were undergraduates at the University of California, Irvine who had been trained in the testing technique.

Before presentation of the test sentences, the subject was familiarized with the four characters to the point where he could name and/or point to them on his own. In addition, each child was presented

with two training sentences in order to familiarize him with the task. Training items were unrelated to the test items in terms of syntactic structure. During training, wrong responses were corrected and items repeated until the subject made the correct response on his own. Once actual testing began, however, subjects were not corrected for their wrong responses. Each test item was presented at most twice.

Predictions

In accordance with the A-chain deletion hypothesis, and the theoretical claim that postverbal subjects in the copulative passive do not form an A-chain with the empty [NP,S] position (cf. Jaeggli, 1986b; Borer, 1986a), it was predicted that younger children would have more difficulty comprehending the passive in SV order than with the passive in VS order. At the same time, it was predicted that there would be no significant effect of inversion on the active control constructions. Finally, it was predicted that the presence of agreement cues on the participle would have a facilitating effect on comprehension performance.

Results and Discussion

Overall results of Experiment One are illustrated in Figures 5 through 7. Actual percentages of correct responses are given in Table 9.

Insert Table 9 about here

Figures 5 and 6 show that the main prediction is strongly disconfirmed. It is seen in Figure 5 that postverbal subjects do not facilitate younger children's understanding of the passive. But neither is the null hypothesis of no difference supported.

Insert Figure 5 about here

In fact, passives (with agreement) in VS order elicited significantly poorer performance at all ages tested than passives in SV order, $F(1,15) = 11.90$ ($p < .005$). Children's correct performance on passives without inversion (i.e., in SV order) ranged from 58.4% to 75% (mean: 63.9%). On passives with inversion, the range was from 45.9% to 70.9% (mean: 56.9%).

From Figure 6, it is evident that the negative effect of inversion on performance in this experiment persists in active constructions.

Insert Figure 6 about here

In active conditions, the difference reflecting poorer performance on inverted structures is smaller but significant, $F(1,15) = 6.43$ ($p < .05$). The overall main effect of word order was thus highly significant, $F(1,15) = 16.58$, $p < .001$.

Turning to the nested factor, there was a significant main effect of distinctive agreement marking on the participle in SV passives, $F(1,15) = 6.80$ ($p < .05$). As is clear from Figure 7, subjects' comprehension of the passive is facilitated in the case of distinctive agreement between the participle and the passive subject. Correct performance ranged from 66.7% to 83.4% (mean: 77.8%), as opposed to a range of 33.4% to 66.7% (mean: 50.0%) in the case of no agreement cue in the SV passive.

Insert Figure 7 about here

In the VS passives, on the other hand, there was no significant main effect of this nested factor, indicating that agreement does not boost performance on inverted passives. The result is a significant order X agreement interaction in the passive, $F(1,15) = 6.36$ ($p < .05$), showing that subjects performed best on those passives containing both explicit agreement and the subject in preverbal position.

No significant developmental trends emerged. Nor was there a significant main effect of voice. This is because poor performance on inverted actives contributed to a low mean percentage of correct responses on actives in general (overall mean: 68.4%). We turn now to a discussion of the results.

The crucial finding is that children do not find passives with postverbal subjects easier. In fact, they find them more difficult. While explicitly disconfirming the prediction stated above, this result can be interpreted as supporting the Borer-Wexler hypothesis if

postverbal subjects in the passive are analyzed as forming an A-chain with the non-thematic [NP,S] position. There are two ways that an A-chain might arise. Burzio (1986) argues that an A-chain forms between the empty category in [NP,S] position and the postverbal subject automatically, without movement, for the purposes of transmitting case to the [NP,VP] position and a theta role to [NP,S] position. Such a chain, according to Burzio, is indistinguishable from a movement-derived chain.

Another possibility is double movement, whereby the NP in direct object position moves to [NP,S] to receive nominative case and then postposes to a VP-adjoined position. In this case, the postverbal subject in the passive would not be in direct object position at S-structure, but would nonetheless form part of an A-chain containing one case and one theta role. The prediction according to both of these positions, then, is that the child who "lacks" A-chains would not exhibit any differential performance on subject-initial and subject-final passives.

EXPERIMENT TWO

In this experiment, children's production of morphological passives is compared with performance on true reflexives and simple intransitives in an elicited production task.

METHOD

Subjects

Subjects in this study were 45 children, 19 girls and 26 boys, in attendance at the same public preschool and kindergarten in Ensenada. The children ranged in age between 3;5 and 6;0 and were divided into three groups, as described in the Subjects section of experiment one. While a few of the subjects who took part in experiment one also took part in experiment two, most did not because the teachers preferred to give other children in their classes a chance to participate. The two sets of subjects are therefore considered to be separate.

Design of the test constructions

The overall design of experiment two, including all test constructions, is illustrated in Table 10. The design was 2-by-2, where the two

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Insert Table 10 about here

---

independent variables were Voice (active and passive) and Word Order (SV and VS). Furthermore, the active condition contained a nested factor: simple intransitive versus reflexive verbs.

Eight verbs were used in the study,[3] four in the active (bailar *to dance*, cantar *to sing*, lavarse *to wash self* and peinarse *to comb self*) and four in the passive (quebrar *to break*, cerrar *to close*, manchar *to stain (make dirty)* and colgar *to hang*). The two intransitive verbs (bailar and cantar) were important as controls because of the detransitivized nature of reflexive passives. The true reflexives were useful as controls because they mimic the NP-se-VP/ se-VP-NP structure of the passive. Each verb was instantiated once in SV order and once in VS order. All test constructions were in the plural[4] and in the past tense. Each item contained one plural NP.

Task, test materials and general procedures

The task combined imitation and elicited production procedures. The child was presented with a pair of pictures, where the pictures in each pair represented two parallel events involving different characters or objects. The experimenter pointed to one of the pictures in the pair and described it using an intransitive, reflexive or passive sentence. The experimenter then pointed to the second picture and instructed the child to describe that picture *in the same way* or *using the same words*. An example, including pictures and instructions

to the child, is shown in Figure 4. In short, the subject's task was to imitate the sentence he had just heard, substituting in another NP. He had the advantage of having heard the verb in exactly the same form in which he was required to produce it.

Insert Figure 4 about here

The sentences and picture pairs were organized into a bound book. The picture that the child was instructed to describe was always the one closest to him in the experimental setting. Subjects were tested one at a time, by two native speakers of Spanish. The two experimenters, one to administer the test and the other to record responses, were undergraduates at the University of California, Irvine who had been trained in the necessary experimental techniques. Each testing session was also tape recorded, so that written responses could later be checked against taped responses.

Before exposure to the test items, each subject was familiarized with the task in a training session. Both training items were syntactically unrelated to the test constructions. During training, subjects were corrected for wrong responses and given as many trials as needed. During the actual experiment, however, each item was presented at most twice and subjects were not corrected for wrong responses.

Predictions

Under an analysis of morphological passive in which the syntactic subject is base-generated in object position, it was predicted that younger children would have difficulty producing the se-passive in SV order, tending instead to use VS order. It was also predicted that younger subjects might omit the plural agreement on the verb in generating the target passive, producing as a result the active se-impersonal. A brief look at the syntax of se-constructions motivates these predictions.

There is an extensive literature on the syntactic role of the subject clitic se in Spanish, and its Italian counterpart si, in formation of the reflexive passive (cf., e.g., Burzio (1986), Jaeggli (1986b), Belletti (1982), Hyams (1986c) among many others). It is generally argued that se acts much like the passive morpheme in the copulative passive, absorbing the external theta role as well as accusative case. Yet se also enters into the formation of another construction, the active impersonal, in which it absorbs the external theta-role and nominative case. (3a) below is an example of an impersonal se-active, (3b) and (3c) are reflexive se-passives and (3d) is ambiguous between active and passive readings:

(3) a. [e [Se rompio las ventanas]]
(*Someone$_{arb}$ broke$_{pl}$ the windows*).

b. [e [Se rompieron las ventanas]].
(*Were broken the windows*)

c. [[Las ventanas] se rompieron t].
(*The windows were broken*).

d. [e [Se rompio la ventana]].
(*Someone broke the window* or *The window was broken*).

The impersonal (3a) is characterized by a lack of agreement between the verb and the postverbal noun phrase. Se in this case is base-generated in INFL, where it is assigned nominative case and the external theta role, and also acts as a proper governor for the empty [NP,S] position (Belletti, 1982; Jaeggli, 1986b). The postverbal NP here is assigned accusative case. The reflexive passives (3b) and (3c) are characterized by agreement between the subject NP and the verb, indicating that nominative case is assigned to the NP and not absorbed by the clitic se. The issue of whether or not nominative case can be assigned directly to the postverbal NP in (3b) is somewhat controversial. For the time being, the important observation is that passives like (3c), but most likely not passives like (3b), must be analyzed as containing an A-chain.

Results and discussion

Overall results of this experiment are illustrated in Figures 8 through 12. Mean percentages of correct responses are shown in Table 11.

Insert Table 11 about here

Consistent with the predictions stated above, children made significantly more errors in attempting to produce the passive in SV order than in producing the passive in VS order, $F(1,42) = 14.73$ ($p < .0005$). This result is illustrated in Figure 8. There was also significant developmental improvement in these passives, $F(1,42) = 8.29$ ($p < .001$).

Insert Figure 8 about here

In the active conditions there was no significant effect of word order. Figure 9 illustrates this for the intransitives and Figure 10, for the reflexives. The overall main effect of word order was nonetheless significant, $F(1,42) = 8.66$ ($p < .01$). In addition, the interaction of voice and word order was significant, $F(1,42) = 7.42$ ($p < .01$).

Insert Figures 9 and 10 about here

The main effect of voice in SV conditions was highly significant, $F(1,42) = 46.11$ ($p < .00001$). This is illustrated in Figure 11, while Figure 12 depicts the effect of voice in the VS conditions ($F(1,42) = 6.38$, $p < .05$). Overall performance was best on simple intransitives, ranging from 69.3% to 80.9% (mean: 75.6%). Correct responses on the active reflexives ranged from 61.6% to 76.7% (mean: 69.1%). Passives elicited the poorest performance, ranging from 38.5% to 65.0% (mean:

52.9%). Thus, the main effect of voice has highly significant at $F(1,42) = 41.08$ ($p < .00001$). Finally, a small but significant effect of age group, $F(1,42) = 4.85$ ($p < .05$), indicates developmental improvement in ability to produce the test constructions.

Insert Figures 11 and 12 about here

A within-subjects analyses by age group of the onset of both SV and VS order in the morphological passives is shown in Table 12. These analyses show definitively that passives in SV order emerge subsequent to passives in VS order for the majority of subjects, as predicted. Only 9% of subjects manifest a developmental pattern that contradicts the prediction. The remaining 91% are consistent with our model: 42% fail at both orders in the passive, 20% succeed at both, and 29% succeed only at VS passives.

Insert Table 12 about here

The results of Experiment Two are more complex than the statistics would lead one to believe. What have been termed "errors" in response to test stimuli are really only failures to conform to the target pattern. For the most part, children's untargeted responses were grammatical rewordings of the target items. It is what the children did say -- and not what they failed to say -- that is of particular interest. For this reason, a more detailed analysis of the types of responses actually elicited was conducted.

There are four major untargeted response types. One type involves changing the verb form to the singular. A moderate number of these responses were elicited (4.2% of all errors), diminishing in frequency over age group: the type 1 error X group interaction was significant, $F(1,42) = 3.62$ ($p < .05$). A second type of untargeted response consists of deleting the subject NP altogether. This type of response constitutes 10.6% of all errors, but was not found to occur more with passive than with active items. A third response type is omission of the subject clitic **se**, resulting in seemingly grammatical intransitive or ergative structures. Subjects omitted the clitic significantly more in the case of the passive than in the reflexive, $F(1,42) = 3.61$ ($p < .05$).

The most common type of untargeted response was reversal of subject-predicate order, accounting for 17% of all errors and 33.5% of grammatical untargeted responses. There were more such responses in the passive than in the active conditions, $F(1,42) = 10.65$ ($p < .05$). By far, the greater tendency was toward displacing the subject rightward, i.e. replacing SV with VS order. The main effect of leftward versus rightward movement of the subject was significant, $F(1,42) = 12.81$ ($p < .001$), but reflects a strong tendency toward rightward movement in the case of the passive only. The greater tendency in the case of active responses was toward leftward movement. While 78% of all reversed responses in the passive involved rightward movement, 92% of all reversals in the intransitive active condition involved leftward movement of the subject. The pattern with reflexives is less clear, with 52% of all reversals rightward. In sum, there was

a highly significant interaction of inversion directionality and voice, $F(1,42) = 27.17$ ($p < .0001$).

These results conform to the predictions stated. Children's difficulty in generating the morphological passive with SV order, alongside the facility with which they produce impersonal actives and the passive in VS order is consistent with the Borer-Wexler hypothesis. In addition, these findings support the position in linguistic theory which states that postverbal subjects in the reflexive passive receive nominative case within VP, in the absence of A-chain formation, while preverbal subjects in these constructions are clearly derived.[5]

General discussion

The clear result to emerge from these studies is that assignment of nominative case directly into the VP is accomplished earlier in development than the assignment of nominative case via NP-movement.

A brief summary of the experimental results is in order. Experiment One revealed that subject-final copulative passives are not understood better or earlier than subject-initial passives. In fact, the inverted structures elicited poorer comprehension performance that non-inverted structures in this study. In general, the copulative passive was not well understood. Even subjects in the oldest age group were far from achieving 100% correct performance. In Experiment Two, on the other hand, a significant main effect of word order in the morphological passive resulted from poorer production performance on

subject-initial se-passives that on subject-final items. With intransitives and reflexives, placement of the subject had no significant effect on subjects' ability to produce the target sentences. While performance on the se-passives was seen to improve with age, the active conditions produced no significant developmental effects.

With the assumption that integrating the results of studies involving different experimental methodologies -- comprehension and production -- is linguistically meaningful, we proceed to compare the two sets of findings.

Recall that one reason for studying development of the passive in Spanish is that it serves as a test case for the hypothesis that late acquisition of the passive reflects delayed access to argument chains. If postverbal subjects in the passive do not invoke A-chain formation, then they are predicted to emerge earlier in the course of development than passives with preverbal subjects, in which an A-chain forms between object and [NP,S] positions. The experimental results strongly suggest that postverbal subjects in the morphological passive do not involve A-chain formation. Rather, nominative case appears to be assigned directly within the VP. Not so for the copulative passive.

The results of experiment one cast doubt on the claim that the postverbal subject in the copulative passive can be assigned nominative case in [NP,VP] position. They argue instead for an analysis according to which the postverbal subject in the passive enters into an A-chain, either because the relevant A-chain is not

derived via movement (Burzio, 1986), or because double movement has occurred. In the latter case, the postverbal NP moves to non-thematic [NP,S] to receive case and then postposes to a VP-adjoined position. As such, the postverbal subject does not reside in direct object position. This is consistent with established accounts of free inversion in Spanish, according to which postverbal subjects are derived via rightward movement and adjunction to VP (Torrego, 1984).

The results of Experiment Two, however, indicate that nominative case may be assigned directly to postverbal subjects within VP in certain constructions. According to Borer (1986a), the existence of the non-thematic [NP,S] position is optional in a free inversion language like Spanish. When a base-generated postverbal subject does not front to [NP,S] position, that position arguably does not exist, so that there can be no chain. At the very least, the results of Experiment Two lead us to reject an analysis of subject-final morphological passives (marked with plural subject-verb agreement) which claims that they derive via the sort of double movement described above (cf. Belletti, 1982), as in (4):

(4) e [$_{I}$ se [$_{VP}$ abren [$_{NP}$ t] las puertas]]
(The doors were opened.)

Rather, postverbal subjects in the morphological passive appear to be assigned nominative case within the VP. According to Baker's (1988) treatment of morphological passive, for example, direct assignment of nominative case to [NP,VP] position is made possible by the incorporation of verb into INFL. If the verb incorporates into INFL, INFL can govern [NP,VP] (see Baker, pp. 353-354 for details) and

nominative case can be assigned directly. The subject clitic se in these structures is generated in INFL, bears the external theta role, and is assigned accusative case by the incorporated verb.

While these experimental results do not serve as definitive proof of the failure of subjects to raise to [SPEC,IP] position in early grammar, they nonetheless contribute to the overall picture of early grammar that has been constructed in the preceding pages. If we take these experimental results seriously, this is an instance in which empirical findings from the study of language acquisition can be used to argue for one position in linguistic theory over another. We are led to support accounts of the periphrastic passive according to which the ability to assign structural case to deep structure object position is completely suspended on morphological grounds (cf. Fabb, 1984). Whether it occurs preverbally or postverbally, the syntactic subject in the copulative passive enters into an A-chain in order to be assigned nominative case. The morhological passive, which entails no such morphological transformation of verbal form, retains its structural case assigning capacity throughout. The postverbal subject in this type of passive is an instance in which nominative case is assigned directly into the VP.

-- Notes --

1. Informally, an argument chain is the relationship that is captured by the coindexing of the empty category and the syntactic subject in a structure such as (i): *(i) Mary$_i$ was congratulated ec$_i$.* Here, the underlying object *Mary* moves to [NP,S] position to receive case, since the structural case assigning ability of the verb is suspended in the passive. Argument chains always terminate in a case-marked position. Other formal properties of argument chains are discussed below.

2. Note that the nested factor just described is confounded with another nested factor. While the participles lavado and peinado are rather natural as derived adjectives, the participles visto and oido do not constitute natural derived adjectives. Since the issue of adjectival and verbal passives in acquisition is not being explored here, the potential effects of this confound will not be discussed.

3. It should be noted that the syntactic structures under examination do not allow for a choice of verbs that could occur in both active and passive conditions.

4. As described in more detail below, only reflexive passives in which the verb is explicitly marked for agreement with the subject are unambiguously passive; the same construction with singular agreement is ambiguous between active impersonal and passive readings.

5. It may be argued that V-S order in the morphological passive is preferred in adult speech and that this is what causes the child to produce many more of these passives with postverbal subjects. However, the fact that this study incorporated a quasi imitation task and that children performed well on the active condition presumably controls for this objection.

APPENDIX B: Tables and figures

TABLE 1: Distribution of all utterances examined

		Postverbal subjects	Preverbal subjects	Pronominals	Null subjects	Total
Nathalie:	Finite	5	47	162	90	304
	Nonfinite	115	42	7	131	295
	Total	120	89	169	221	599
Philippe:	Finite	77	26	497	182	782
	Nonfinite	30	7	4	153	194
	Total	107	33	501	335	976
Daniel:	Finite	27	16	80	150	273
	Nonfinite	18	10	11	166	205
	Total	45	26	91	316	478
	Total:	272	148	761	872	2053

TABLE 2: Distribution of all utterances at T1

		Postverbal subjects	Preverbal subjects	Pronominals	Null subjects	Total
Nathalie:	Finite	4	2	33	31	70
	Nonfinite	111	22	3	85	221
	Total	115	24	36	116	291
Philippe:	Finite	59	15	196	95	365
	Nonfinite	23	6	3	97	129
	Total	82	21	199	192	494
Daniel:	Finite	6	8	18	67	99
	Nonfinite	14	6	3	125	148
	Total	20	14	21	192	247
	Total:	217	59	256	500	1032

TABLE 3: Distribution of all utterances at T2

		Postverbal subjects	Preverbal subjects	Pronominals	Null subjects	Total
Nathalie:	Finite	1	45	129	59	234
	Nonfinite	4	20	4	46	74
	Total	5	65	133	105	308
Philippe:	Finite	18	11	301	87	417
	Nonfinite	7	1	1	56	65
	Total	25	12	302	143	482
Daniel:	Finite	21	8	62	83	174
	Nonfinite	4	4	8	41	57
	Total	25	12	70	124	231
	Total:	55	89	505	372	1021

TABLE 4: Age, MLU, and number of postverbal subjects

Nathalie

Transcript Code	Age	MLU	Total # of utterances	Total # of post-verbal subjects
N1	21;3	1.75	101	44 (44%)
N2	22;2	2.04	110	45 (41%)
N4	24;1	1.62	80	26 (33%)
N6	26;2	1.91	133	5 (4%)
N7	27;2	2.11	175	0

Philippe

Transcript Code	Age	MLU	Total # of utterances	Total # of post-verbal subjects
P1	25;3	3.04	93	7 (8%)
P2	26;0	2.98	162	17 (11%)
P3	26;1	4.15	132	30 (23%)
P4	26;2	3.34	107	28 (26%)
P7	27;0	3.90	113	13 (12%)
P9	27;2	> 4.0	137	7 (5%)
P11	30;0	> 4.0	232	5 (2%)

Daniel

Transcript Code	Age	MLU	Total # of utterances	Total # of post-verbal subjects
D1	20;1	1.50	104	8 (8%)
D2	20;3	1.52	126	12 (10%)
D3	21;3	1.69	17	0
D4	22;2	2.25	34	5 (15%)
D5	23;1	2.45	197	20 (10%)

TABLE 5: Proportion of lexical subjects that are postverbal

Nathalie

Transcript Code	Total # of post-verbal subjects	Total # of pre-verbal subjects	Percentage of lexical subjects that are post-verbal
N1	44	19	70
N2	45	2	96
N4	26	3	90
N6	5	45	10
N7	0	20	0

Philippe

Transcript Code	Total # of post-verbal subjects	Total # of pre-verbal subjects	Percentage of lexical subjects that are post-verbal
P1	7	7	50
P2	17	5	77
P3	30	6	83
P4	28	3	90
P7	13	5	72
P9	7	7	50
P11	5	0	0

Daniel

Transcript Code	Total # of post-verbal subjects	Total # of pre-verbal subjects	Percentage of lexical subjects that are post-verbal
D1	8	6	57
D2	12	7	63
D3	0	1	0
D4	5	5	50
D5	20	7	74

Table 6: Italian data: types of subjects

Claudia, from 1;3;19 (MLU 1.85) to 1;9;21 (MLU 3.66)

Total # of null subject constructions: 374
- verb only: 249
- verb-object: 111
- object-verb: 14

Total # of postverbal subject constructions: 88
- verb-subject: 76
- object-verb-subject: 6
- verb-subject-object: 5
- verb-object-subject: 1

Total # of preverbal subject constructions: 33
- subject-verb: 24
- subject-verb-object: 9

Francesco, from 1;4;03 (MLU 1.65) to 2;0;14 (MLU 2.25)

Total # of null subject constructions: 282
- verb only: 229
- verb-object: 52
- object-verb: 1

Total # of postverbal subject constructions: 82
- verb-subject: 61
- object-verb-subject: 8
- verb-subject-object: 4
- verb-object-subject: 9

Total # of preverbal subject constructions: 24
- subject-verb: 18
- subject-verb-object: 6

Table 7: Subject omission in the child Naomi at different ages

age	% null subjects	total # of utterances
1:10;10 - 1:10;17	45.3%	152
1:10;28 - 1:11;06	48.0%	200
1:11;20 - 1:11;23	41.0%	100
2:00;05	23.9%	88
2:01;17	13.7%	117
2:11;13	2.4%	82

Table 8: Design of the Test Constructions, Experiment One

Number in parentheses indicates the (randomly determined) order of occurrence within test battery.

WORD ORDER

	SV	VS
ACTIVE		
	Juan peinó a Maria (7) *Juan combed Maria*	Peinó a Juan Maria (11) *Combed Juan$_o$ Maria$_s$*
	Maria lavó a Juan (13) *Maria washed Juan*	Lavó a Maria Juan (3) *Washed Maria$_o$ Juan$_s$*
	Mickie vió a Donald (9) *Mickie saw Donald*	Vió a Mickie Donald (15) *Saw Mickie$_o$ Donald$_s$*
	Donald oyó a Mickie (1) *Donald heard Mickie*	Oyó a Donald Mickie (6) *Heard Donald$_o$ Mickie$_s$*

VOICE

PASSIVE		
	Maria fue peinada por Juan (16) *Maria was combed by Juan*	Fue peinado Juan por Maria (5) *Was combed Juan by Maria*
	Juan fue lavado por Maria (2) *Juan was washed by Maria*	Fue lavada Maria por Juan (10) *Was washed Maria by Juan*
	Donald fue visto por Mickie (12) *Donald was seen by Mickie*	Fue visto Mickie por Donald (4) *Was seen Mickie by Donald*
	Mickie fue oido por Donald (8) *Mickie was heard by Donald*	Fue oido Donald por Mickie (14) *Was heard Donald by Mickie*

Table 9: Percentages of Correct Responses, Experiment One

	ACTIVE		PASSIVE			
	SV	VS	SV		VS	
			AC	NAC	AC	NAC
Group 1 N = 6 (3;09)	66.7	58.4	66.7	50.0	41.7	66.7
Group 2 N = 6 (4;09)	79.2	58.4	83.4	33.4	41.7	50.0
Group 3 N = 6 (5;09)	91.7	54.2	83.4	66.7	75.0	66.7
Total N= 18 (4;09)	79.2	57.0	77.8	50.0	52.8	61.0

AC = agreement cue
NAC = no agreement cue

Table 10: Design of the Test Constructions, Experiment Two (Structures to be generated by subject)

Number in parentheses indicates the (randomly determined) order of occurrence within test battery.

WORD ORDER

	SV	VS
Intransitive	Las ninas cantaron (1) *The girls sang*	Cantaron los ninos (10) *Sang the boys*
	Los ninos bailaron (13) *The boys danced*	Bailaron las ninas (4) *Danced the girls*
active		
Reflexive	Los elefantes se lavaron (11) *The elephants washed selves*	Se lavaron las ninas (6) *Washed selves the girls*
	Los hombres se peinaron (8) *The men combed selves*	Se peinaron los ninos (16) *Combed selves the boys*

VOICE

passive	Las camas se mancharon (9) *The beds were stained*	Se mancharon las mesas (7) *Were stained the tables*
	Las cortinas se colgaron (3) *The curtains were hung*	Se colgaron los cuadros(12) *Were hung the pictures*
	Las ventanas se quebraron (15) *The windows were broken*	Se quebraron los trenes (2) *Were broken the trains*
	Los libros se cerraron (5) *The books were closed*	Se cerraron las puertas (14) *Were closed the doors*

Table 11: Percentages of Correct Responses, Experiment Two

	ACTIVE				PASSIVE	
	SV		VS		SV	VS
	INTR	REFL	INTR	REFL		
Group 1 N = 13 (3;09)	73.1	65.4	65.4	57.7	34.6	42.3
Group 2 N = 17 (4;09)	76.5	64.7	85.3	73.5	41.2	69.1
Group 3 N = 15 (5;09)	70.0	70.0	83.3	83.3	50.0	80.0
Total N= 45 (4;09)	73.2	66.7	78.0	71.5	41.9	63.8

INTR = (simple) intransitive
REFL = (active) reflexive

Table 12: Within-subject analysis: percentage of subjects who passed or failed the morphological passive condition*

GROUP 1

VS \ SV	fail	pass
fail	100	--
pass	--	--

GROUP 2

VS \ SV	fail	pass
fail	29	12
pass	47	12

GROUP 3

VS \ SV	fail	pass
fail	7	13
pass	33	47

TOTAL

VS \ SV	fail	pass
fail	42	9
pass	29	20

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* Pass is equivalent to 3 or more correct responses out of 4

Figure 1: Proportion of intransitive and transitive utterances in the speech of Daniel and Nathalie which conform to SV word order.

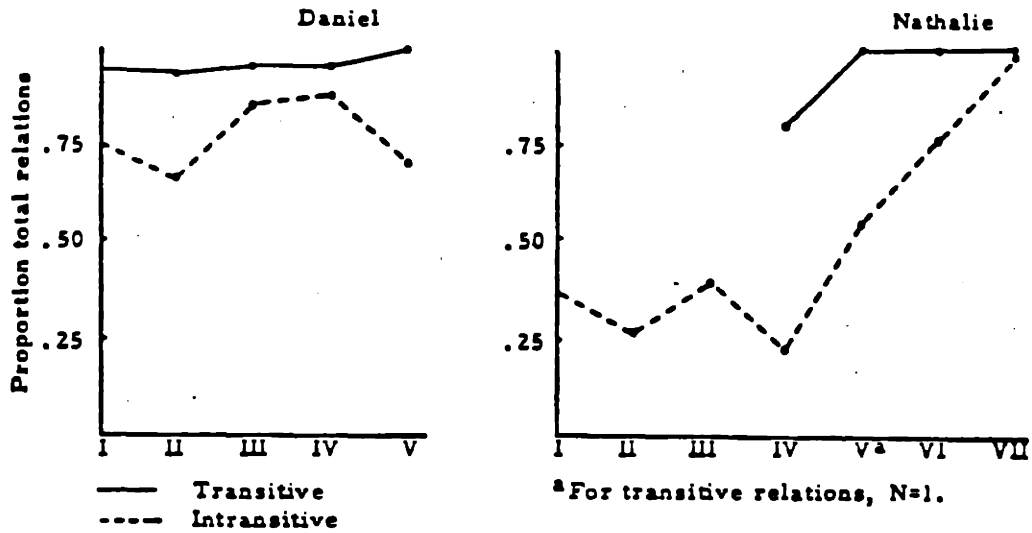

Figure 2: Correlation Matrices

a) Philippe

	age	null subjs	nonfinite	postver...	rightDisl...
age	1				
null subjs	-.835	1			
nonfinite	-.897	.778	1		
postverbal	-.545	.435	.832	1	
rightDisloc	.768	-.562	-.876	-.652	1

b) Nathalie

	age	null subjs	nonfinite	postver...	rightDisl...
age	1				
null subjs	-.174	1			
nonfinite	-.959	.357	1		
postverbal	-.98	.264	.924	1	
rightDisloc	.883	-.607	-.953	-.893	1

c) Daniel

	age	null subjs	nonfinite	postver...	rightDisl...
age	1				
null subjs	-.973	1			
nonfinite	-.864	.938	1		
postverbal	.54	-.391	-.054	1	
rightDisloc	.931	-.89	-.875	.326	1

Figure 3: Example presentation of a test sentence, Experiment One

Experimentor: Ahora [nombre] mire a las dos fotos y apunte a la foto que va con la historia...

"Juan fue lavado por Maria"

Translation: *Now (name of child) look at the two pictures and point to the picture that goes with the story...*

"Juan was washed by Maria"

Pictures:

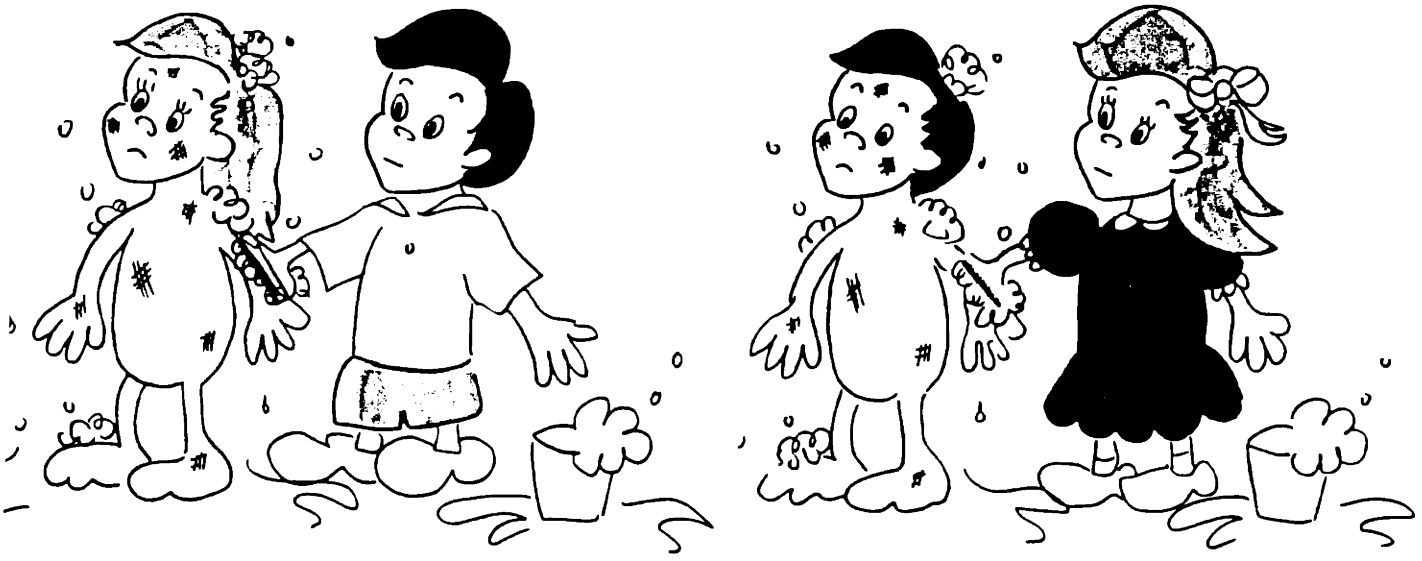

Figure 4: Example presentation of a test sentence, Experiment Two

Experimenter: (Pointing to picture A)
Mire a esta foto (A):

"Los cuadros se colgaron", verdad?

Ahora [nombre] digame en el mismo modo que paso en esta foto (B):

TARGET: "Las cortinas se colgaron"

Translation: *Look at this picture (A):*

"The pictures were hung", right?

Now (name of child) tell me in the same way what happened in this picture (B):

TARGET: "The curtains were hung"

Pictures:

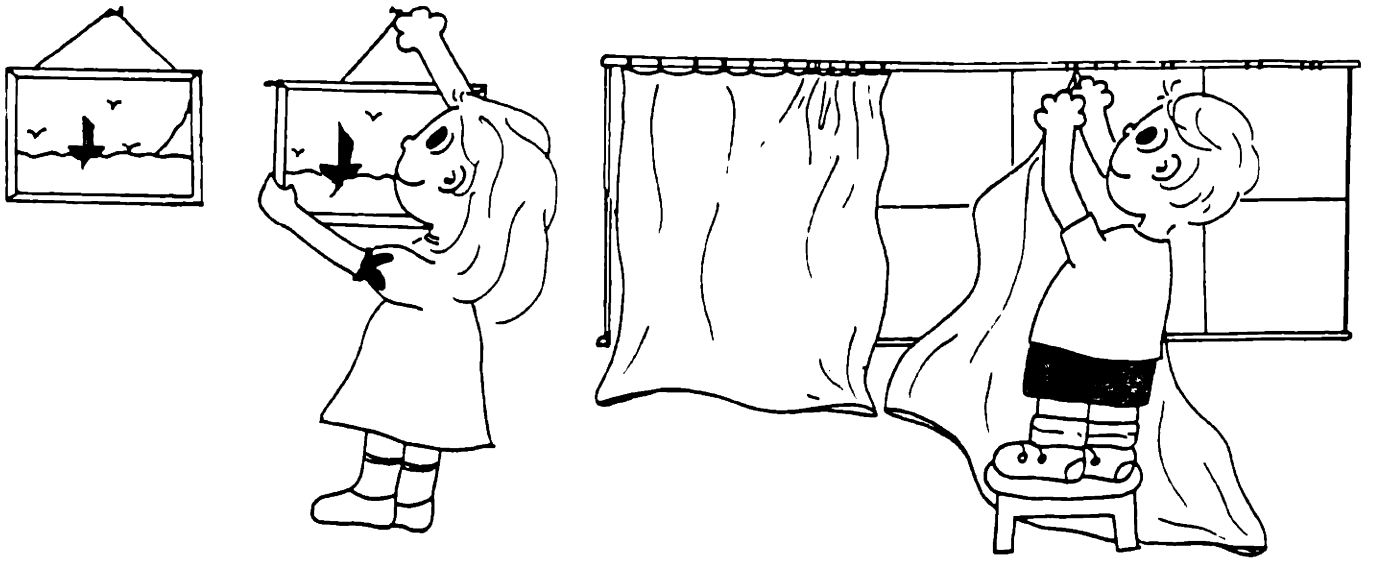

Figure 5: Developmental comparison of subjects' correct responses to the two passive constructions in Experiment One (SV and VS orders)

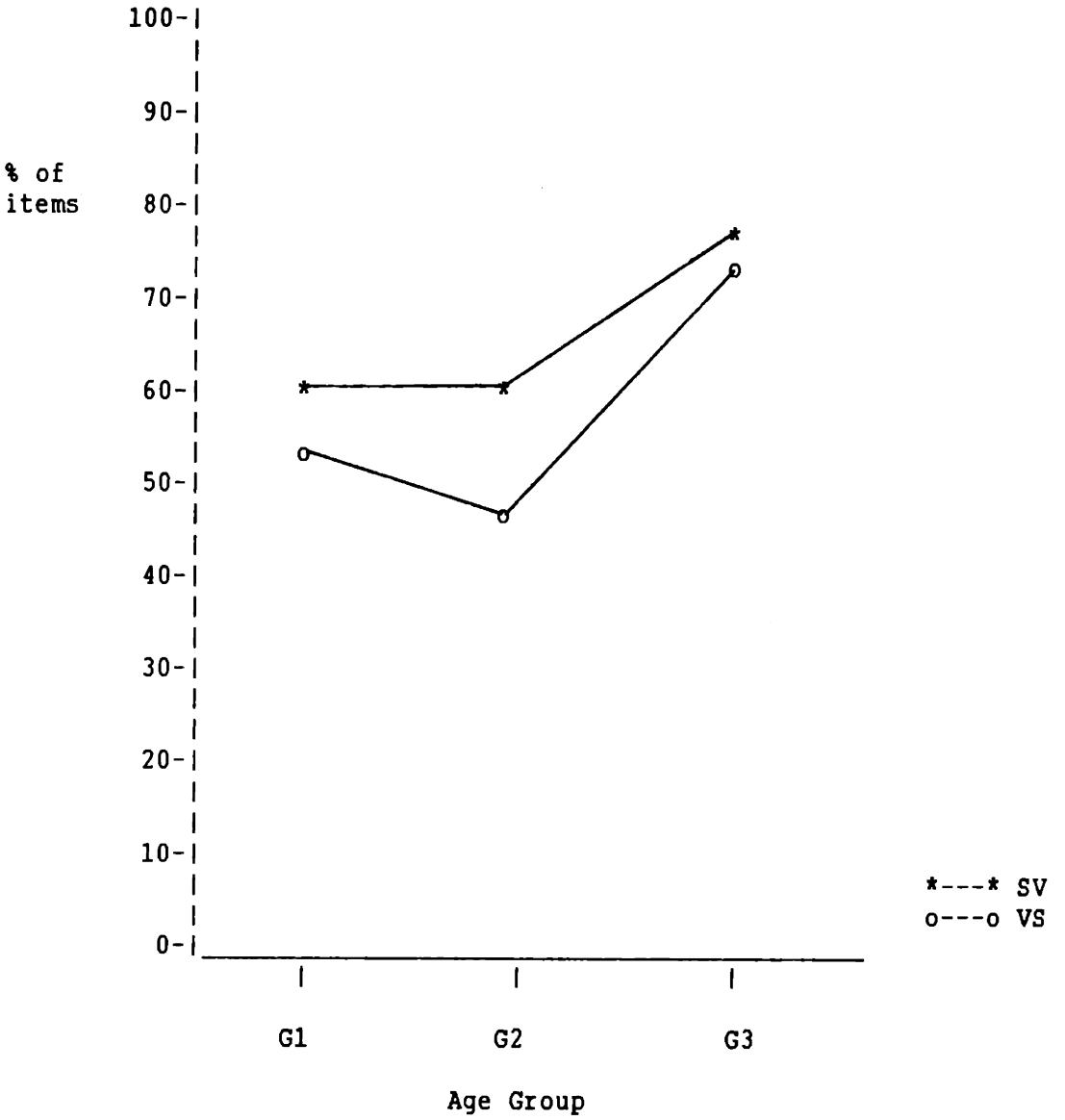

Figure 6: Developmental comparison of subjects' correct responses to the two active constructions in Experiment One (SV and VS orders)

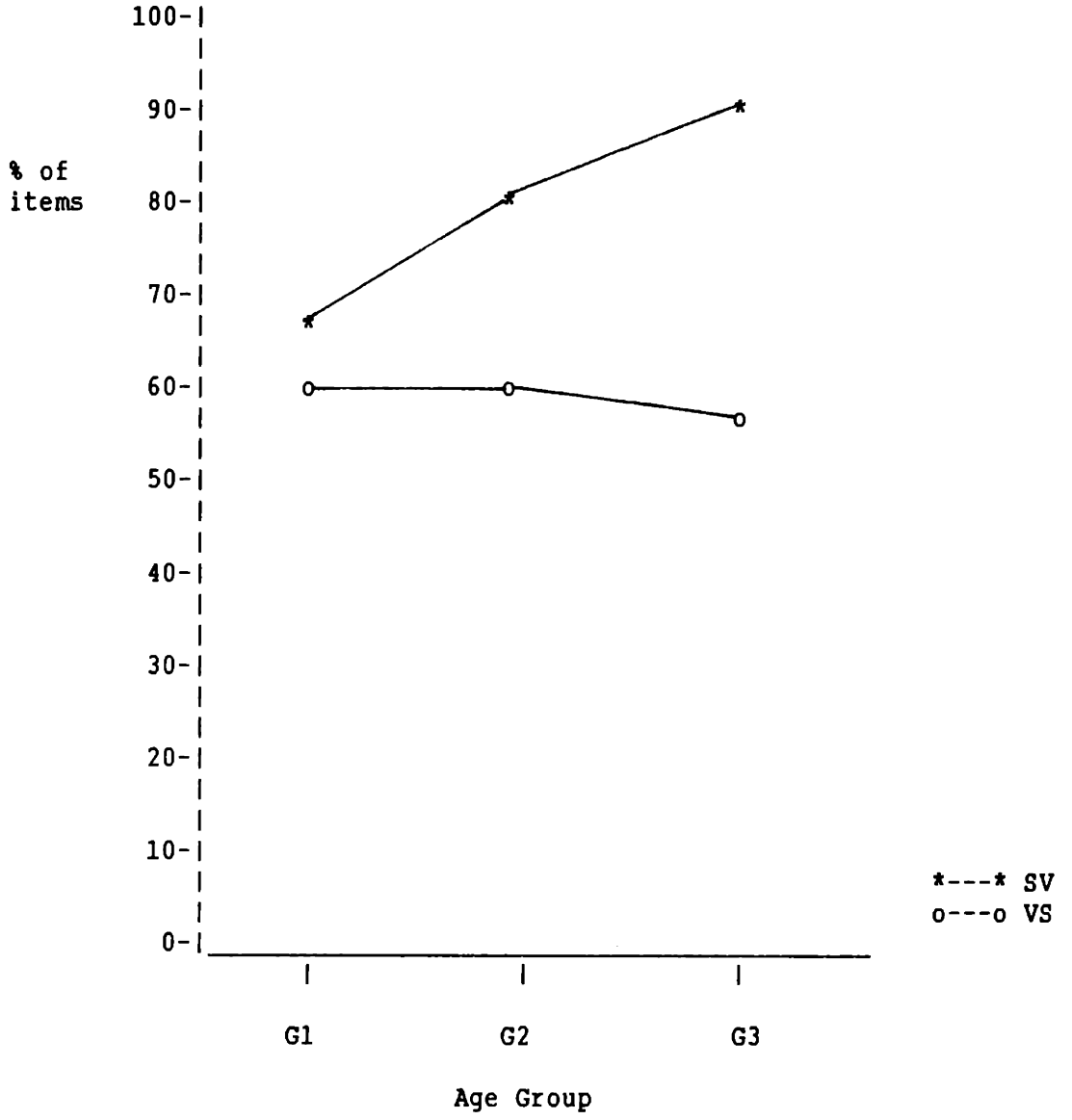

Figure 7: Developmental comparison of subjects' correct responses to the two SV passive constructions in Experiment One (agreement cue (AC) versus no agreement cue (NAC))

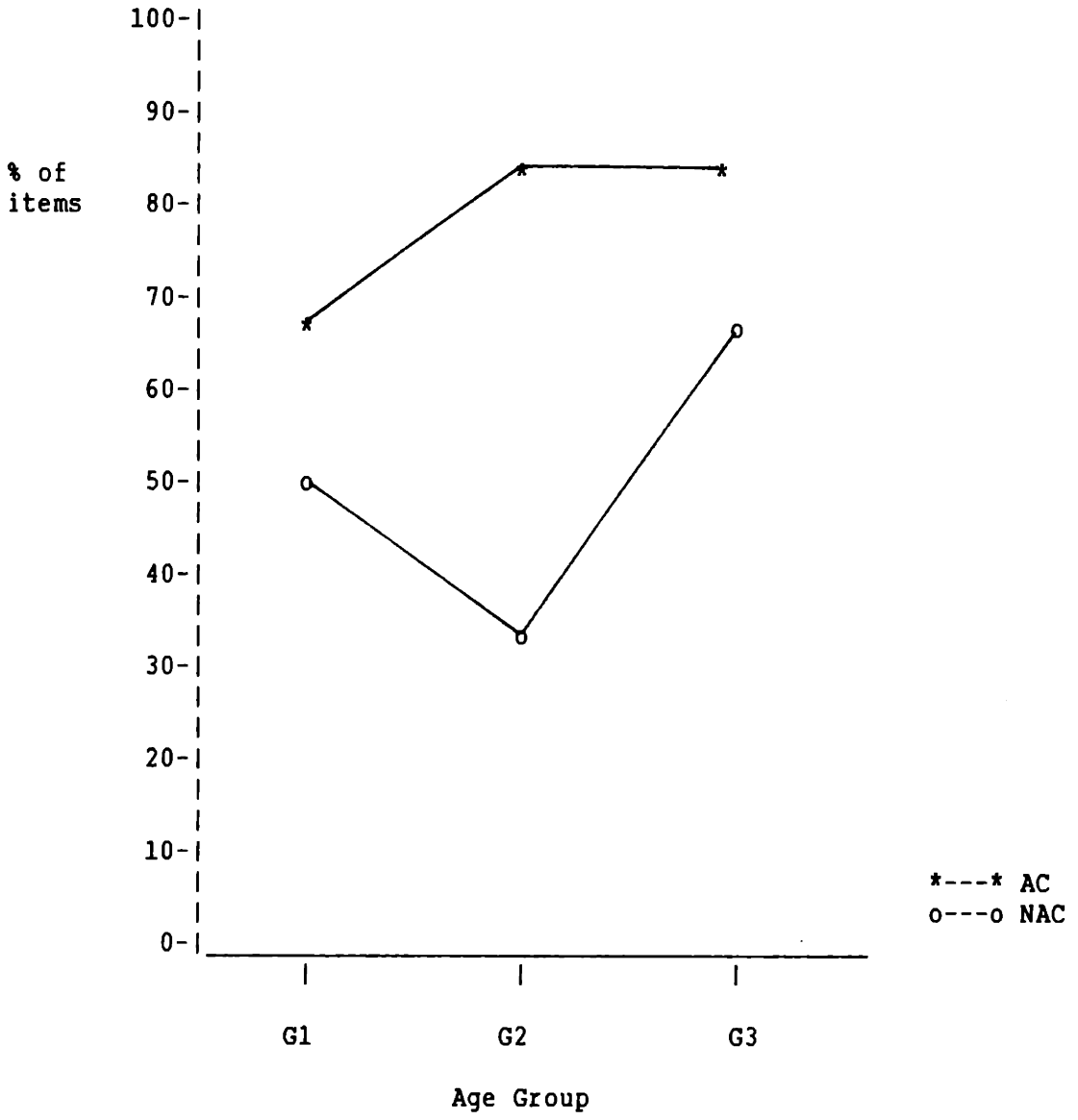

Figure 8: Developmental comparison of subjects' correct responses to the two passive constructions in Experiment Two (SV and VS orders)

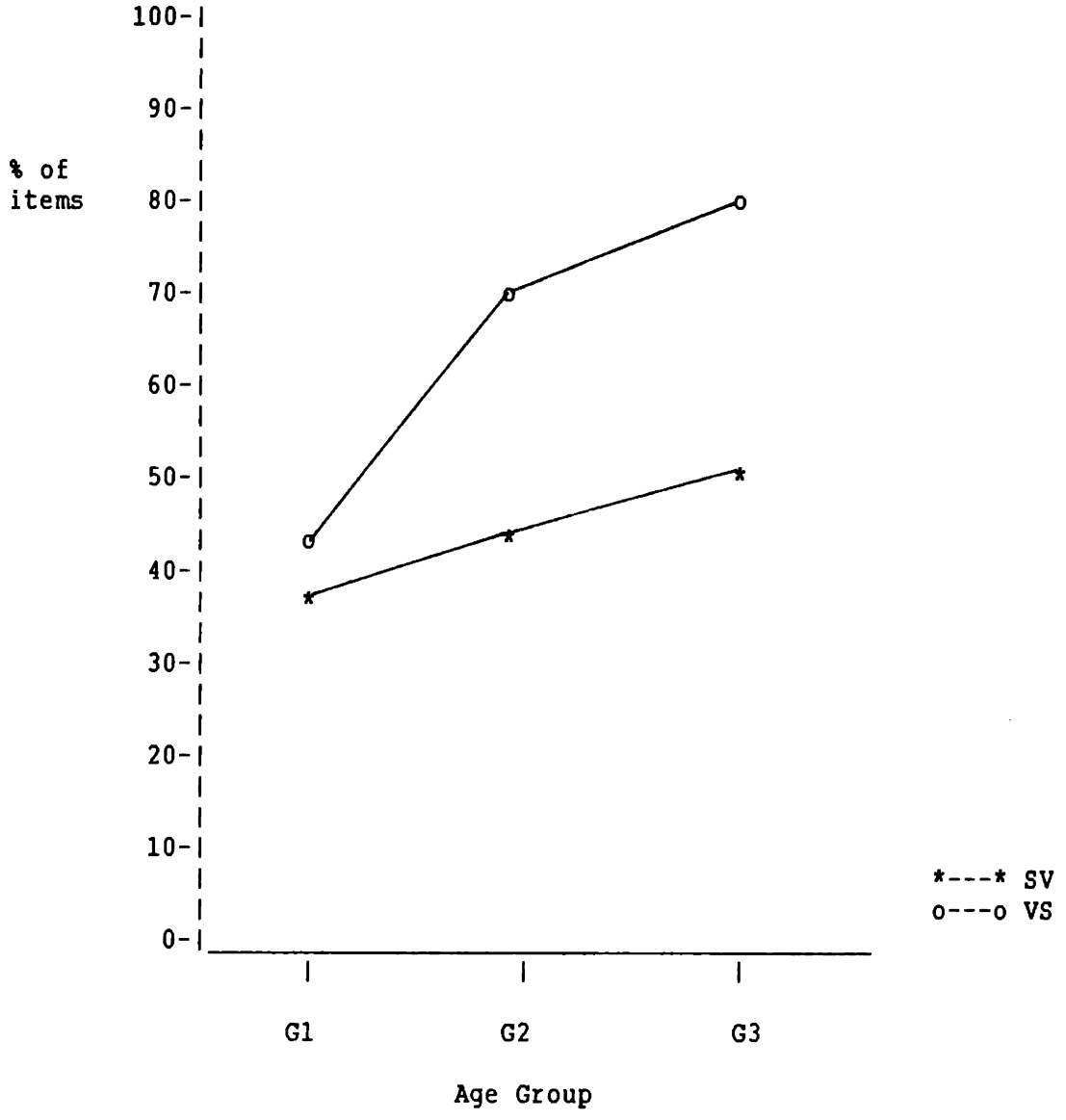

Figure 9: Developmental comparison of subjects' correct responses to the two active intransitive constructions in Experiment Two (SV and VS orders)

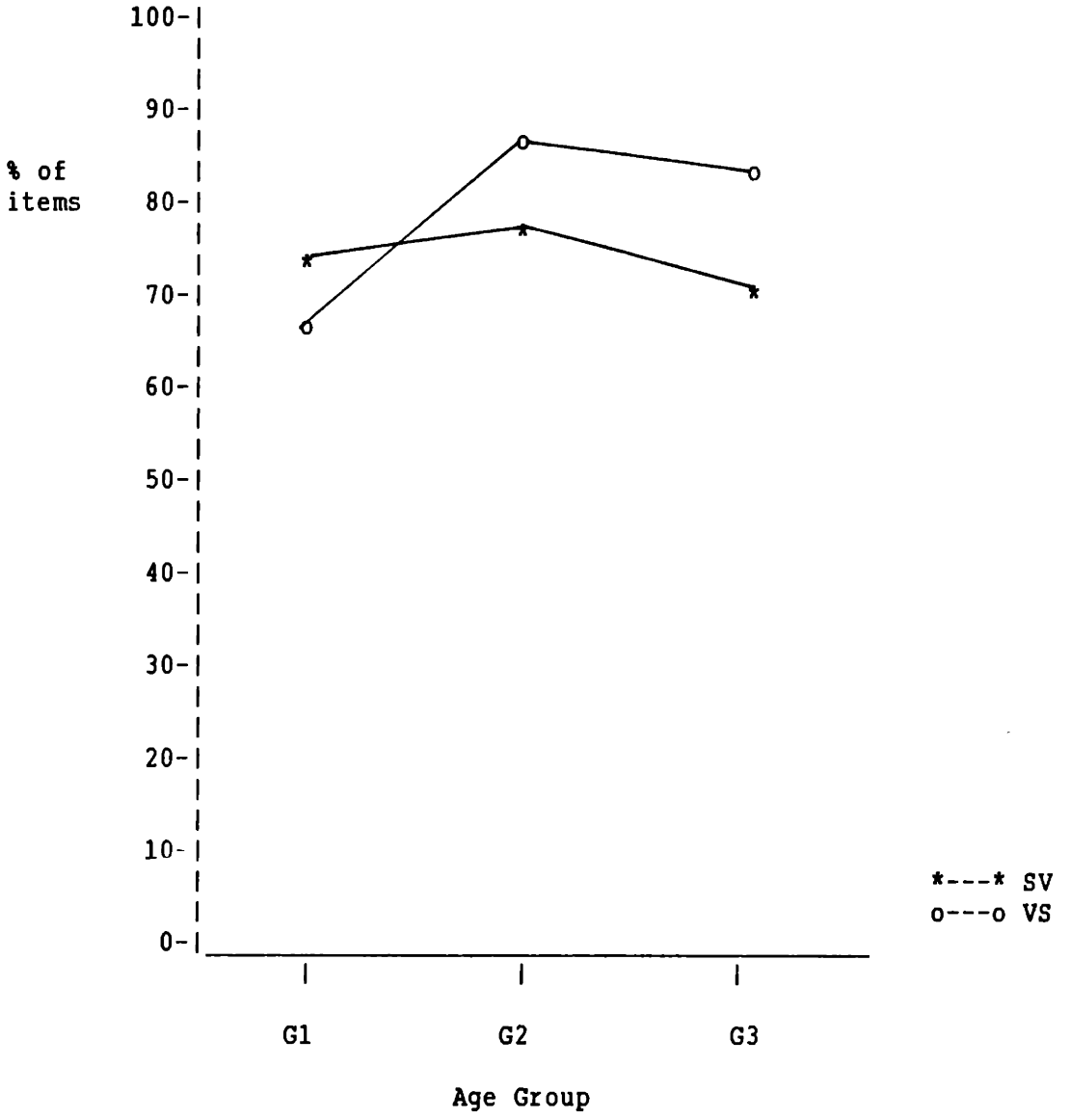

Figure 10: Developmental comparison of subjects' correct responses to the two active reflexive constructions in Experiment Two (SV and VS orders)

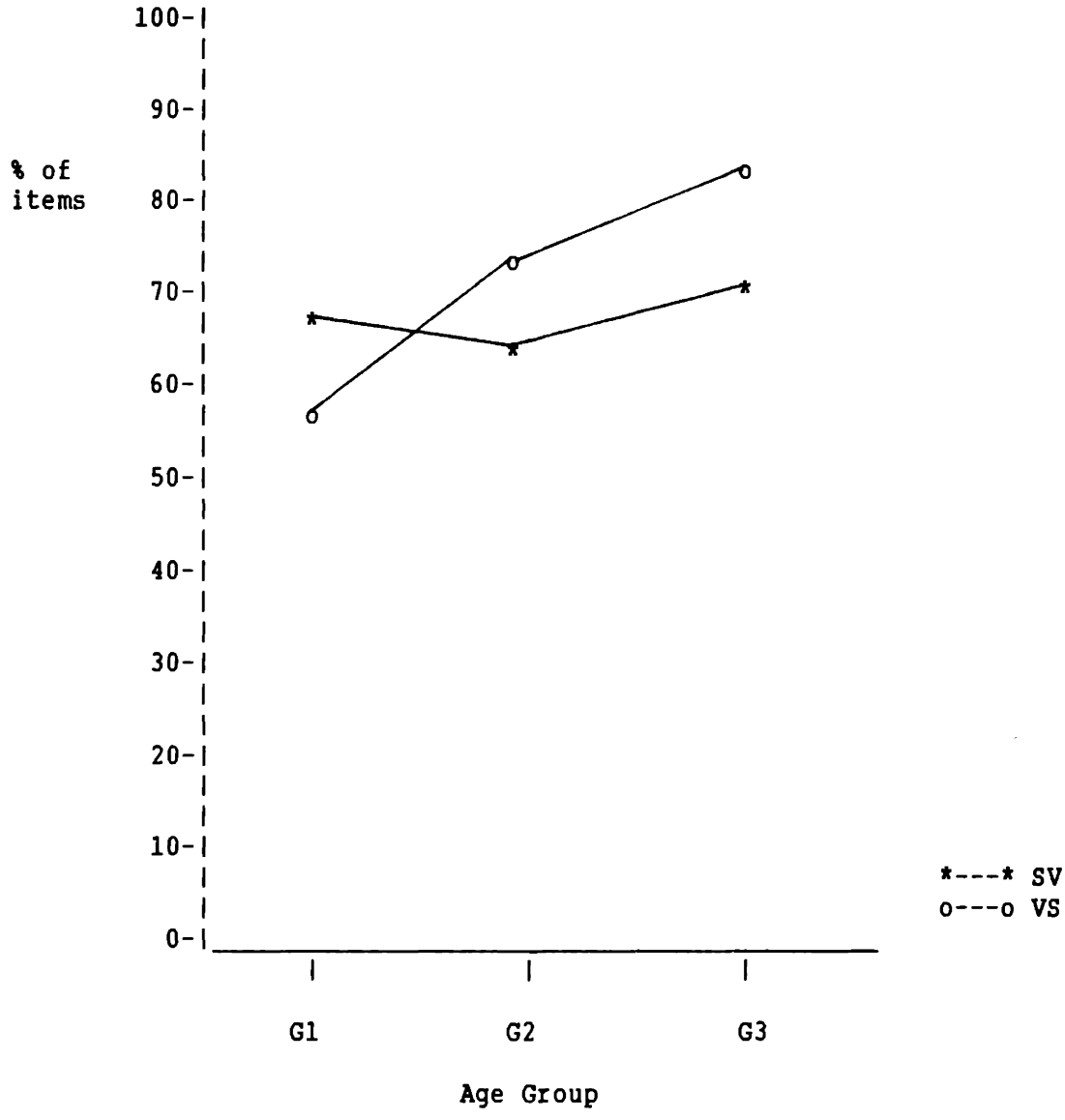

Figure 11: Developmental comparison of subjects' correct responses to all SV constructions in Experiment Two

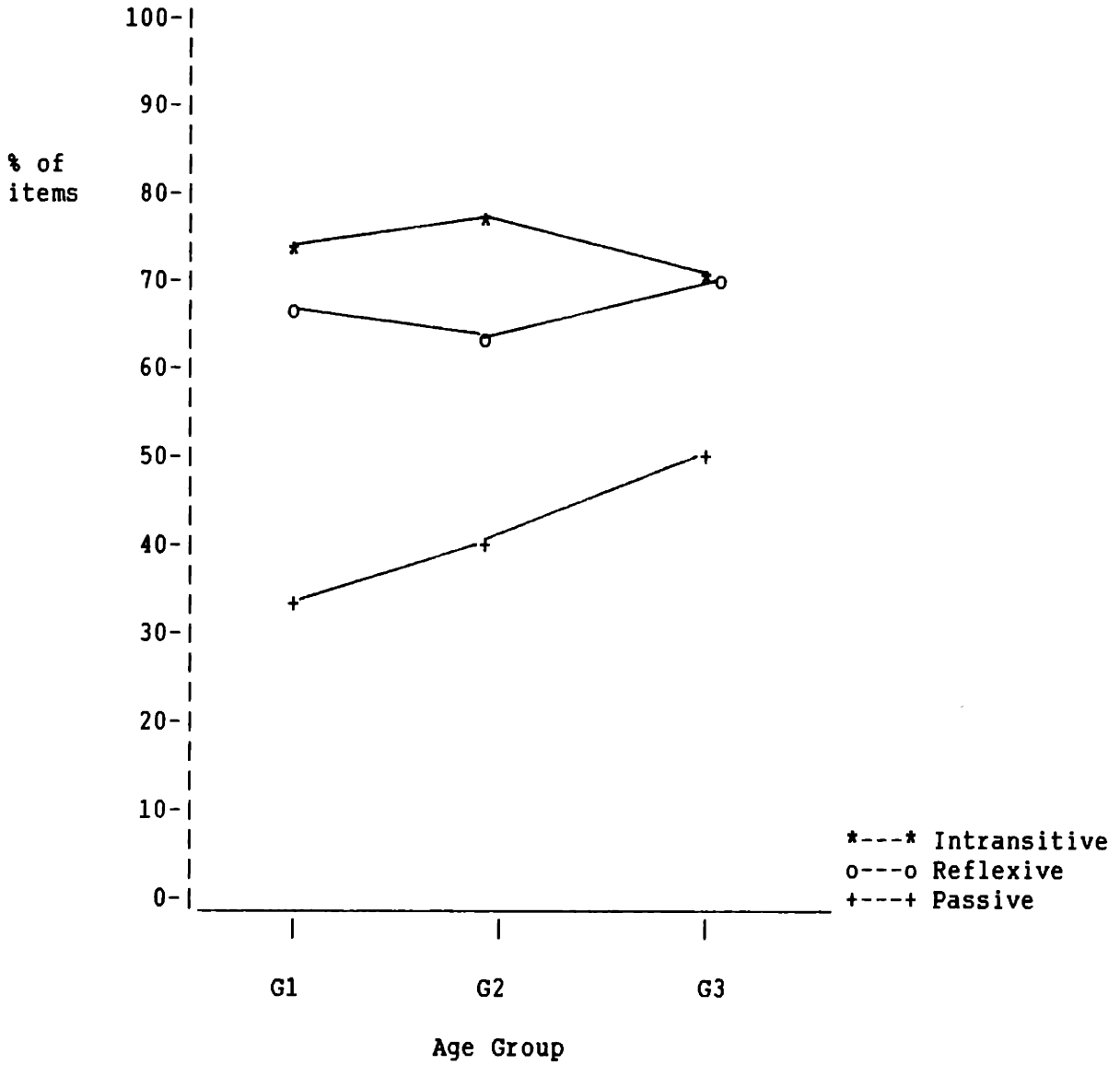

Figure 12: Developmental comparison of subjects' correct responses to all VS constructions in Experiment Two