V2, Null Arguments and COMP Projections

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1. Introduction

The question of how children acquire functional heads has a long history within language acquisition research. Brown (1973) attempted to describe and explain what appears to be an invariant order in the development of the '14 grammatical morphemes,' following what he dubbed THE TELEGRAPHIC STAGE, a stage during which various functional elements and closed-class items such as inflections, determiners, auxiliaries, etc. were either completely absent or not reliably produced in the child's language. This observation led ultimately to the hypothesis that children's early grammars were semantically-based (Bowerman 1973; Schlesinger 1971), which is to say that they expressed semantic or thematic relations, but not structural ones.

A more recent hypothesis concerning the nature of telegraphic speech is Radford's (1990) SMALL CLAUSE HYPOTHESIS (henceforth SCH), also proposed under somewhat different assumptions by Guilfoyle & Noonan (1989) and Lebeaux (1988). The central idea is that children start out with maximal projections of lexical heads, that is, small clauses, and gradually add the functional categories DET, INFL, COMP and their projections during the course of development.

The SCH, while not implausible *a priori*, faces both conceptual and empirical problems. First, there is the problem of explaining how the functional categories are acquired if they are initially absent. Most proponents of the SCH would suggest a maturational account (cf. Radford 1990), that is, the functional categories are biologically determined to emerge at specific points in development some time after the emergence of lexical categories. While maturation of functional

categories is in principle possible, it is not the optimal working hypothesis. A much stronger claim would be that children's grammars have the same basic form as adult grammars and are constrained by the same principles of grammar (Klein 1982; Hyams 1983, and many others). This is often referred to as the CONTINUITY HYPOTHESIS (Pinker 1984). The Continuity Hypothesis has far fewer degrees of freedom. If the assumption of continuity cannot be maintained for some specific aspect of grammar, then maturation becomes a plausible account. In short, I take continuity to be the null hypothesis concerning development.

There are also empirical problems with the SCH. Thus far, the main empirical basis for the SCH has been English child language.[1] However, there is a broad range of acquisition data from other languages which cannot be readily accounted for under the assumption that early grammars lack all functional heads. In fact, it is fair to say that the characterization of early language as 'telegraphic', then 'asyntactic', and finally 'small-clause-like' is in large measure a historical accident. Had the grammatical study of early child language begun with German and Dutch, for example, rather than English, a very different picture would have emerged. In these languages, as well as many others, we see that children acquire certain inflectional elements at a very early age, from the beginning of their multi-word utterances. Moreover, they control syntactic operations such as verb raising and verb second (V2), which are dependent on the presence of functional head positions (cf. Clahsen 1991; Hoekstra & Jordens, this volume; Hyams 1992a; Meisel & Müller 1992; Pierce 1989; Pierce & Deprez 1993; Sigurjónsdóttir 1987; Weissenborn 1992; Poeppel & Wexler 1993, and others). We return to this in Section 2.

There is another proposal concerning early phrase structure, one which I will focus on in this paper. This proposal is that children have one or more INFL projections, but do not have COMP or its projections (Meisel & Müller 1992; Clahsen 1991; Gawlitzek-Maiwald, Tracy & Fritzenschaft 1992; Penner 1992). I will refer to this as the SHORT CLAUSE HYPOTHESIS (ShCH). The ShCH also suffers some conceptual problems. First, given the close relationship between INFL and COMP in natural language, it seems particularly unnatural for the child to project lexical categories and INFL (or AGR, TENSE, etc.), but not COMP. Second, we are still faced with the problem of explaining how COMP develops.

The ShCH also raises questions of an empirical nature. There is a range of child language phenomena related to the verb second requirement in Germanic and residual V2 (see Section 2.1, p. 25) in languages like English, and also to the child's use of null arguments, which are most naturally accounted for by assuming that

the child has a full clausal structure. Moreover, I believe that the assumption that children begin with a COMP-less grammar raises a significant learnablity problem. In this paper I would like to focus on these two issues — the empirical and learnability-theoretic motivation for what I will call the FULL CLAUSE HYPOTHESIS (FCH). The model I will propose is one in which children begin with a minimal as well as maximal functional projection, that is, IP and CP. INFL may ultimately split into two or more functional heads depending on the particular language being acquired, but I will have little to say here about this process. Thus, I am proposing that the child begins with roughly the structure in (1).

(1)
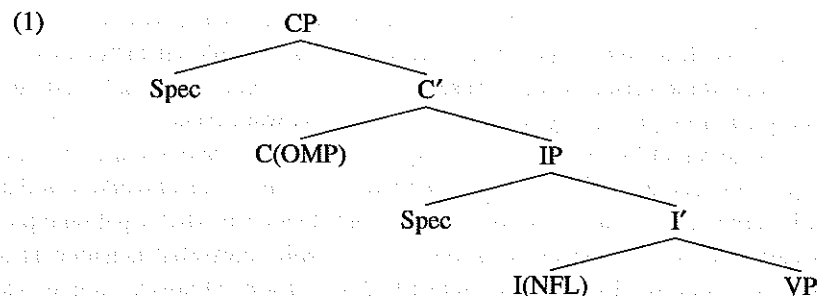
This chapter is organized as follows. In Sections 2 and 3 I will discuss two sorts of empirical problems with the ShCH. As noted above, the first of these concerns V2-related phenomena in early language. This is discussed in Section 2. The second problem is related to the null argument phenomenon in child language. I turn to this in Section 3, where I also offer a new account of the null argument parameter intended to explain the crosslinguistic variation associated with null arguments in early language. In Section 4 I will discuss the learnability issue.

2.   Verb Second

The verb second phenomenon, which exists in all the Germanic languages (though only marginally in English, cf. Rizzi 1991a), provides a direct route for exploring the question of whether young children have functional categories, and specifically, a COMP system. The standard analysis of V2 within current theory, based on the original insights of Koster (1975) and den Besten (1983), involves movement of a finite verb to the head of CP. Subsequent movement of an XP to the specifier of COMP results in the verb appearing in second position.[2] V2 is restricted to main clauses, except in Icelandic and Yiddish where it also holds in subordinate clauses. The German sentences in (2) illustrate standard V2 effects.

(2)   a.   *Ich kenne den Mann.*
           'I know the man.'
      b.   *Hans sagt daß er den Mann kennt.*
           'Hans says that he the man knows.'
      c.   *Hans behauptet den Mann zu kennen.*
           'Hans claims the man to know.'

The question for us is: Do children show knowledge of the V2 requirement? If they do, then we have good reason to believe that they have the functional categories involved in the V2 effect. There has been a good deal of cross-linguistic research devoted to this question and all of the available evidence shows that from the earliest multi-word utterances, children distinguish finite from non-finite verb forms and raise finite verbs to some functional head outside the VP. Let us just briefly review some of the relevant facts.

Clahsen (1991) notes that in early German modals and verbs with a *-t* affix appear in second position, while infinitives (*-n* affix) and unmarked verbs (Ø affix) only occur in final position. He also notes that postverbal negation typically occurs with verbs inflected with the *-t* affix, while preverbal negation is used with the infinitive form and the unmarked verb form (Ø affix). Similar results are reported in Meisel & Müller (1992), Weissenborn (1990) and Pierce & Deprez (1993).

In a closely related language, Dutch, de Haan (1986), Frijn & de Haan (1991) and Weverink (1989) note that at around age 2, the Dutch child uses finite verb forms in first and second position (first position when the subject is dropped), and nonfinite verb forms in final position.

Platzack (1992) calculates the rate of verb movement in finite vs. non-finite sentences in early Swedish. Swedish is underlyingly SVO and hence evidence for movement is somewhat less robust than in Dutch or German. We need to look for non-subject initial V2 structures. Platzack's data show that there are many such cases in finite utterances, while there are no cases of movement in utterances with non-finite verbs. Thus, the pattern that we observed in the other Germanic languages is repeated in Swedish. The distribution of finite and non-finite forms in Dutch, German and Swedish follows straightforwardly if we assume that the finite verb form undergoes movement to a functional position preceding NEGP (recall the German negation facts), arguably to COMP, though we return to the question of which functional position the finite verb moves to in the following section.[3]
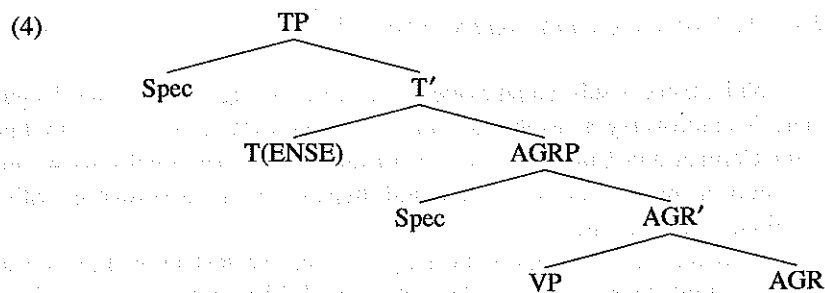
2.1   *The Position of V in V2 and Residual V2 Language*

While there is substantial evidence for verb raising in early child language, there is controversy as to the landing site of the moved verb. We saw that in adult German and Dutch, the finite verb moves to COMP and thus we might take movement to COMP as the null hypothesis, in accordance with the Continuity Hypothesis.

However, the Germanic child language data present us with an apparent paradox. While there are clear V2 effects in the V2 languages, we see little other direct evidence of COMP. For example, Meisel & Müller (1992) note that the two French-German bilingual children they studied used no complementizers before the ages of 2;6 and 3;0. Radford (1990) and others have made the same observation about English-speaking children. Meisel & Müller observe, moreover, that the children in their study fail to invert the auxiliary and subject clitic in French, as in (3). In the adult grammar the auxiliary would raise to COMP in these cases (Emonds 1978; Rizzi & Roberts 1990), as illustrated by the sentences in parentheses — a phenomenon which Rizzi (1991a) refers to as "residual V2" (examples from Meisel & Müller).

(3)   a.   *Où il est le papa?*   (cf. *Où est-il le papa?*)
           'Where he is the Daddy?'
      b.   *Où l'est le papier?*   (cf. *Où est-il le papier?*)
           'Where it is the paper?'
      c.   *Où il est baguette?*   (cf. *Où est-elle la baguette?*)
           'Where it is (the) stick?'

To reconcile the V2 facts with the lack of inversion in *wh*-questions and the absence of complementizers, Meisel & Müller adopt Pollock's (1989) 'split INFL hypothesis', in which INFL consists of (at least) two projections — TP and AGRP, and they propose that in the early grammar, the verb raises only as far as TENSE, the higher of the two projections. The COMP system is unavailable. The subject (or other XP) raises from a VP-internal position to Spec-TP giving rise to an apparent V2 effect. Thus, on Meisel & Müller's analysis, children have 'short clauses'. I have referred to this as the Short Clause Hypothesis (ShCH).[4] Meisel & Müller's structure for German is given in (4).

(4)

```
                    TP
          _____|_____
        Spec              T'
                    _____|_____
                T(ENSE)            AGRP
                            _____|_____
                          Spec              AGR'
                                       _____|_____
                                      VP            AGR
```

On the ShCH, the development of V2 in child language arises from the setting and resetting of a number of parameters, including the head parameter and Platzack & Holmberg's (1989) finiteness parameter, which specifies the placement of <±finite> either in INFL, as in English, or in COMP, as in German. Meisel & Müller assume that German children (and all children) initially place the <+F> feature in INFL (=TENSE). Moreover, they assume that while AGRP and TP are both head-final in adult German, children assume a mixed system in which AGRP is head-final and TP is head-initial. Thus, TP is head-initial and contains the <+F> operator making it a landing site for the raised verb.

Although the ShCH has a good deal of intuitive appeal, it runs into a number of problems, which we will discuss in the following sections.

2.2 *V-above-Subject*

First, it is unclear how the ShCH can handle verb raising in languages such as English and French (residual V2).

Klima & Bellugi (1967) were the first to observe that English-speaking children go through a stage (their Stage C) in the development of questions in which they front the *wh*-phrase but fail to invert the auxiliary, as in (5).

(5) a. *What he can ride in?*
     b. *Which way they should go?*
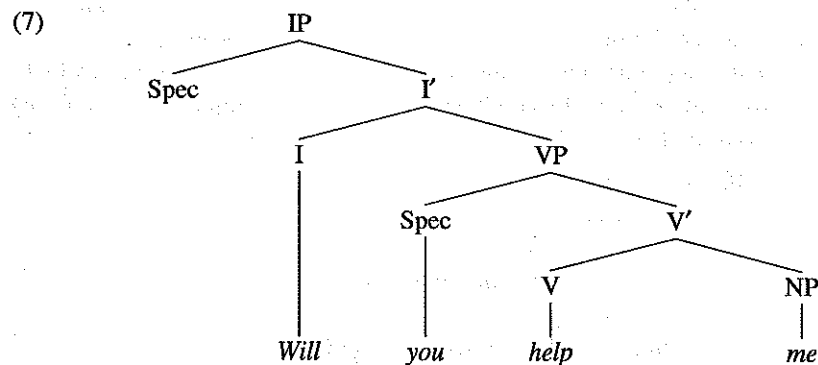   c. *Where the other Joe will drive?*
     (Klima & Bellugi 1967 — Stage C)

The sentences in (5) bear a striking similarity to the French sentences in (3). Recall that Meisel & Müller take the lack of inversion in (3) as evidence that children do not have a COMP position. What is curious about this stage is that the English-speaking children who are producing the sentences in (5) *do* invert the auxiliary systematically in *yes/no* questions, as in (6).[5]

(6) a. *Does the kitty stand up?*
     b. *Is Mommy talking to Robin's grandmother?*
     c. *Will you help me?*
     d. *Can I have a piece of paper?*
     (Klima & Bellugi 1967 — Stage C)

The inverted structure in (6) provides *prima facie* evidence that children do have a functional projection above the subject in Spec-IP, namely COMP. However, there is an alternative hypothesis, proposed by Guilfoyle & Noonan (1989). Guilfoyle & Noonan adopt the VP-internal subject hypothesis (Koopman & Sportiche 1991; Kitagawa 1986), according to which subjects are base-generated inside some projection of V, say Spec-VP. They further propose that children producing inverted sentences such as those in (6) actually raise the verb to I but leave the subject in its VP-internal position. The relevant structure would be as in (7). On this analysis, then, there is no COMP projection.

(7)

```
                       IP
              _____|_____
            Spec                 I'
                           _____|_____
                          I            VP
                          |       _____|_____
                          |     Spec          V'
                          |      |       _____|_____
                          I      V      V            NP
                          |      |      |            |
                        Will    you    help          me
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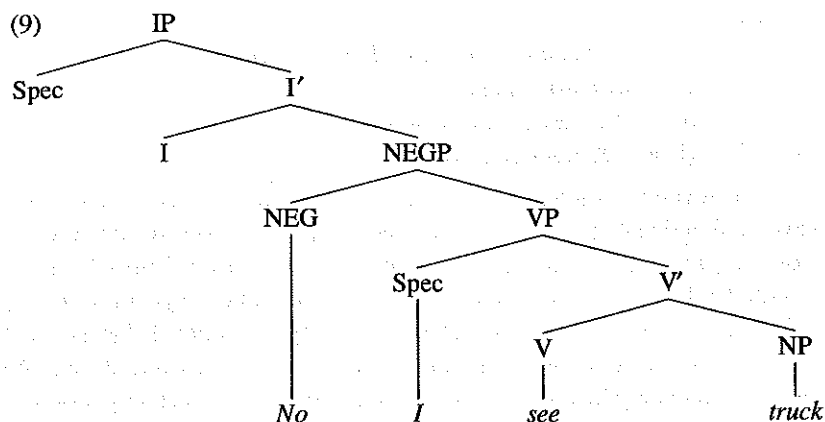
As discussed by Pierce (1989), Lebeaux (1988) and Guilfoyle & Noonan, there is some evidence from the early placement of negation that children do, in fact, go through a stage in which the subject fails to raise from its base-generated VP-internal position. As Klima & Bellugi note, the sentences in (8) are quite typical in the earliest stages of development.

(8) a. *Not the sun shining.*
     b. *No Fraser drink all tea.*
     c. *No I see truck.*
     (Klima & Bellugi 1967 — Stage A negation)

If we assume that there is a NEGP between the VP and INFL, then the 'external negation' in (8) would result from a failure to raise the subject to Spec-IP, as in (9).

(9)   IP

```
        Spec              I'

             I              NEGP

                    NEG           VP

                      |      Spec        V'

                      |       |      V       NP

                    No        I    see      truck
```

However, it is important to note that children who are producing inverted *yes/no* questions are well beyond this VP-internal subject stage. The sentences in (8) occur during Klima & Bellugi's Stage A (mean age 2;1), while the inverted *yes/no* questions occur during Stage C (mean age 3;0), at which point negative sentences are by and large well formed. Examples of Stage C negation are given in (10).

(10)   a.   *You didn't eat supper with us.*
       b.   *I can't see it.*
       c.   *It's not cold.*
       d.   *I gave him some so he won't cry.*
       e.   *I not crying.*
            (Klima & Bellugi 1967 — Stage C)

Thus, the hypothesis that children fail to raise subjects out of their VP-internal position fails to account for the correct placement of negation during Stage C. Moreover, the Guilfoyle & Noonan proposal raises a further question, namely, if children can have the subject internal to VP in *yes/no* questions, producing apparent inversion as in (6), why don't they also allow the subject to remain inside the VP in *wh*-questions, in which case we would find apparent inversion in *wh*-questions as well, rather than the uninverted questions in (5). Thus, the facts in (5) and (6) are more compatible with the hypothesis that the subject is in Spec-IP. If this is so, then the auxiliaries in (6) must be in a functional position above Spec-IP, presumably COMP. Thus, the evidence from the development of questions in English argues that children at this stage do have a COMP system.[6]

2.3 *Verb Raising in German Child Language*

A second argument against the ShCH concerns the V2 phenomenon in early German and Dutch. Recall that in the adult German and Dutch, finite verbs raise to COMP in main clauses, as in (11a); verb raising to COMP in tensed subordinate clauses is blocked by the presence of the complementizer in COMP, as illustrated by the contrast (11b, c).

(11)   a. $[_{CP}$ *Ich*$_j$ $[_C$ *kenne*$_i]$ $[_{IP}$ t_j $[_{VP}$ *den Mann* $t_i]$ $[_I$ $t'_i]]]$
            'I know the man.'
       b.   *Hans sagt* $[_{CP}$ $[_C$ *daß$]$ $[_{IP}$ *er den Mann* t_i $[kennt_i]]]$
            'Hans says that he the man knows.'
       c.   **Hans sagt daß kennt er den Mann.*

Recall from Section 2, page 24, that German- and Dutch-speaking children produce V2 structures from the earliest stage. It is thus striking that these children rarely make the mistake of overgeneralizing V2 to subordinate clauses. Clahsen (1986, 1991), Meisel & Müller (1992), Weissenborn (1990) and others report that as soon as subordinate clauses develop, they are always verb-final. This result is inexplicable on the ShCH, which holds that children raise verbs to some INFL projection (either AGR or TENSE). Under standard assumptions, the INFL positions are equally available in both main and subordinate clauses. Thus, if V2 effects in child language are the result of movement to INFL (or TENSE), then we should find verb raising in both embedded and main clauses, contrary to fact.[7] Note that the fact that German-speaking children go through a stage, roughly from age 2;6 to 3;0, in which they produce verb-final subordinate clauses without overt complementizers (Harald Clahsen, pers. comm.; Penner 1992; Weissenborn 1990) suggests that children have a null complementizer in COMP which blocks inversion. I will assume that this is the case. I return to this point in Section 4. To sum up, then, the fact that children generally fail to overgeneralize V2 to embedded clauses in V2 languages argues against the ShCH and in favor of an adultlike system.

Note finally that the ShCH fails to explain why the child who has V-to-I would give up such an analysis in favor of V-to-C once COMP matures. We run into a classic subset problem since all of the available V2 data are compatible with a V-to-I analysis. As we will discuss in more detail in Section 4, the short clause child would require negative evidence to move from a V-to-I grammar to a V-to-C grammar.

3. Null Arguments

Another rich source of evidence that children have a COMP-projection at the very earliest stages of development comes from the child's use of null arguments, in particular null subjects. In Hyams (1983, 1986), I argued that the early grammar is a *pro*-drop grammar, comparable to the grammar of adult *pro*-drop languages such as Italian and Spanish, in which a null pronominal (*pro*) is licensed in Spec-IP. This hypothesis amounts to the claim that subjectless sentences such as those in (12), which appear systematically at the earliest stages of language development, represent a grammatical option for the child and are not simply the result of a production constraint limiting the length of children's output.[8] (English examples from Bloom, Miller & Hood 1975; Dutch examples from de Haan & Tuijnman 1988; French examples from Pierce 1989):

> (12) *Show Mommy that.*
> *No open wallet.*
> *Want look a man.*
> *Kan niet slapen op een schaap.*
> 'Cannot sleep on a sheep.'
> *Is een trein hè?*
> 'Is a train huh?'
> *Veux pas lolo.*
> '(I) want not water.'
> *Est casse.*
> 'Is broken.'
> *Marche pas.*
> '(S/he) walks not.'

While null subjects appear to be a universal property of early language, the structural conditions under which arguments are omitted vary across child languages. Thus, de Haan & Tuijnman (1988) note that Dutch-speaking children at the relevant age (roughly 2 years) omit subjects predominantly when the verb occurs in first position. This is illustrated in the Dutch examples in (12). Sentences with null subjects stand in contrast to sentences with overt subjects, where the verb may surface in either first or second position, as in (13) (from de Haan & Tuijnman 1988).

> (13) a. *Hij doet het.*
> he does it
> b. *Moeten wij het weggooien?*
> must we it away.throw

De Haan & Tuijnman note, moreover, that children also omit objects, but again, only when the verb is in first position, as in (14).

> (14) a. *Heeft Papa voorgelezen.*
> has   daddy read
> b. *Moet ik maken.*
> must I make
> c. *Heeft Anna weer opgeplakt.*
> has   Anna again on.glued

3.1 *Topic drop*

Based on the facts in (12) through (14), de Haan & Tuijnman argue that Dutch children have a process of topic drop, a process which also exists in the adult language. We assume that topic drop, like *pro*-drop (on Rizzi's 1986 account) is subject to both a LICENSING and IDENTIFICATION requirement. (We return to this below.) Thus, under topic drop, a null argument is licensed in topic position. We take topic position to be Spec-CP. This explains the co-occurrence of V1 and null arguments, i.e., (12) through (14) above; the null argument is in Spec-CP, while the (fronted) verb is in COMP. We further assume, following de Haan & Tuijnman, that the null argument in Dutch is identified by a discourse topic, an option available in so-called discourse-oriented or topic-prominent languages (Huang 1984).

The distribution of null and overt arguments in early Dutch provides rather straightforward evidence that the early grammar projects to a CP, since this is the position in which topic drop is licensed. And the same pattern shows up in early German. Thus, Poeppel & Wexler (1993) found that the German-speaking child whose language they examined omitted subjects when the verb appears in first position, and otherwise not. In (15) we list the different sentence types found by Poeppel & Wexler for this child and their frequency of occurrence (from Poeppel & Wexler 1993).

> (15) OVS   19
> AdvVS   31
> SVO   129
> *pro*V0   19
> OV*pro*   0
> AdvV*pro*   0

The crucial point is that subjects in postverbal position, Spec-IP by our assumption, must be phonologically realized, while subjects preceding the fronted verb, i.e., in Spec-CP, may be null. Similarly, Penner (1992), in a study of the acquisition of Bernese Swiss German, notes that initially the verb most often appears in first position; i.e., the verb is in COMP but there is no raising of an XP to Spec-CP. The occurrence of V2 increases developmentally. Penner notes a similar increase in null subjects over time (until approximately age 2;6 when the children stop omitting subjects). If Bernese-speaking children have a topic-drop grammar, we expect a direct relation between these two phenomena. For whatever reason, Bernese children initially do not have (or fail to use) movement to Spec-CP — precisely the position in which null arguments are licensed. As XP-topicalization increases, so should null arguments.

Thus, the distribution of null subjects in early German further supports the topic-drop hypothesis and *a fortiori* the claim that the early grammar projects to CP. In the section that follows we will provide an analysis of the crosslinguistic variation in child language with respect to null argument use. We will argue that null subjects in early English also occur in topic position (though in structures which are distinct from early German and Dutch). The analysis of English null subjects will thus provide further support for the FCH.

3.2 *The Null Argument Parameter*

We see that in child grammars, as in adult grammars, null arguments may be licensed in two contexts, in A-position, e.g., Spec-IP, and in Spec-CP, which is canonically an $\overline{\text{A}}$-position. We find the former in *pro*-drop languages such as Italian and Spanish and the latter in languages such as German and Dutch. Whenever we find crosslinguistic differences of this sort, the question arises as to how such knowledge develops in the child. How does the child know that he is in a *pro*-drop vs. topic-drop language? Assuming that the options are available in UG, is one or the other a default option? Finally, what is the status of the child's null subjects in a language like English, which appears to be neither *pro*-drop nor topic drop in its adult state? In this section, we will sketch a theory of the setting of the NULL ARGUMENT PARAMETER which addresses these issues. The analysis is not meant to be comprehensive (being tangential to the main point of this paper), but rather offers a promising direction in which to proceed.[9]

As a point of departure, let us assume as a general principle that *pro* is licensed under Spec–head agreement. As noted above, however, languages vary with respect to the status of the specifier position in which *pro* is licensed. In *pro*-drop languages, *pro* is licensed in A-position, namely Spec-IP. By our assumption it is licensed under Spec–head agreement with AGR. In German and Dutch, on the other hand, *pro* is licensed in $\overline{\text{A}}$-position, that is, Spec-CP. (We return to the status of Spec-CP shortly.) In this instance, we assume that *pro* is licensed under Spec–head agreement with the features on the fronted verb in COMP. Null subjects in Spec-CP are licensed by agreement with the INFL features that the verb has picked up from AGR and null objects are licensed by agreement with the verb's selectional/subcategorization features which, we may assume, are inherited by COMP. Thus, in contrast to the *pro*-drop situation, in topic-drop languages both subjects and objects are licensed in Spec-CP.

Note that the hypothesis that object *pro* is licensed under agreement with the verb's selectional/subcategorization features derives the result, noted by Cardinaletti (1990), that null objects in topic-drop languages are always 3rd person (in contrast to null subjects, which may be any person). This follows since V does not select for any particular person or number, while these features are specified on AGR.

We may formulate the licensing requirement as a parameter, as in (16).

(16) The Null Argument Parameter
       Pro is licensed under Spec–head agreement in A/$\overline{\text{A}}$-position.

As noted earlier, we assume that null arguments must be both licensed and identified (Rizzi 1986; Jaeggli & Safir 1989). As just outlined, the licensing requirement for *pro* is Spec–head agreement, and languages 'choose' between the A- and $\overline{\text{A}}$-options in (16). However, *pro* must also be identified. We make the standard assumption that in *pro*-drop languages, *pro* is identified by a 'rich' AGR. In German and Dutch, in contrast, *pro* is identified by a discourse topic, as discussed earlier. In this respect it is similar to Chinese, as described in Huang (1984); the null element in Spec-CP is associated with and identified by a discourse topic through a process of 'topic-chaining'.[10] We will further assume that null non-arguments in topic position such as adverbials need not be licensed, but only identified by an appropriate identifier. Thus, in topic-drop languages, we find sequences of the following sort, with an adverbial null topic which is identified by the overt adverb in prior discourse.

(17)   A: *Ik weet dat je vandaag hard gewerkt hebt, maar wat heb je*
            gisteravond gedaan?
            'I know that you have worked hard today, but what have you
            done yesterday evening?'
       B: ———*Ben ik naar de film geweest.*
            'Am I to the movies been.'

In light of the foregoing discussion, let us re-examine null subjects in early English. Hyams (1983, 1986) argued that young English-speaking children, and in fact all children, begin with a *pro*-drop grammar. There were a number of empirical problems with the particular *pro*-drop analysis I proposed, which are discussed in Hyams (1992b). Moreover, there is a particular conceptual problem, which is that it is unclear how the identification requirement on *pro* could be satisfied by the early grammar of English, or by the adult grammar for that matter, since the language has a very impoverished morphology. This is especially true for young children in the *pro*-drop stage for whom verbal morphology is largely absent. This renders implausible the claim that English-speaking children have an Italian-like grammar. For this reason and others, Jaeggli & Hyams (1988) proposed that young English-speaking children have topic identification and thus are closer to Chinese-speaking children than to Italian-speaking children. Hyams & Wexler (1993) make a similar proposal, namely, that English-speaking children have a topic-drop grammar. We will have more to say about the identification requirement below.

The idea that English-speaking children have a topic-drop grammar amounts to the claim that this is a default (or initial) grammatical option since there is no evidence in the input which would lead the English-speaking child to such an analysis. This would imply that the default option along the null argument parameter in (16) is that *pro* is licensed in an $\bar{A}$-position. However, there is an obvious problem with this suggestion. In the typical topic-drop language both subjects and objects may be dropped, as discussed above. And in fact de Haan & Tuijnman show that this is the case for Dutch-speaking children and adults alike, and Wang, Lillo-Martin, Best & Levitt (1992) show that this is also the case for Chinese-speaking children. However, in English there is a strong asymmetry; young children drop subjects to a significant degree, but object drop is exceedingly rare. (See Hyams & Wexler 1993; and Wang *et al.* 1992 for the statistics associated with subject and object drop.) Thus, children will allow null subjects without any evidence that this is a grammatical possibility in the language, for example young English-speaking children. However, they will not assume that objects may be null unless there is positive evidence that this is the case, as in German, Dutch and Chinese. How can we explain this subject/object asymmetry, within the framework we are developing?

Let us begin by noting that while Spec-CP is canonically an $\bar{A}$-position, it is sometimes an A-position. Rizzi (1991b) proposes the following definition of A-position:

(18) α is an A-position if:
   (i)   α is assigned a thematic role, or
   (ii) α is construed with agreement.

According to (18) Spec-CP is an A-position just in case the subject (bearing the index of AGR) moves to Spec-CP. By transitivity, Spec-CP is thus construed with agreement (assuming, for example, that CP inherits the index of its specifier) as illustrated in (19).

(19) $[_{CP_i}$ *John*$_i$ $[_{C'}$ $[_{IP}$ t_i AGR$_i$ ...]]]

Notice that this induces a basic subject/object asymmetry since Spec-CP cannot be an A-position by virtue of the object moving to it, as illustrated in (20).

(20) $[_{CP}$ *John*$_i$ $[_{C'}$ $[_{IP}$ *Mary*$_j$ AGR$_j$ *loves* t_i]]]

Let us return now to our original problem, namely, why the early grammar of English licenses null subjects but not null objects. Let us assume that the default option along the null argument parameter in (16) is that *pro* is licensed in A-position. This means that, barring evidence to the contrary, the child assumes that a null argument is *licensed* in Spec-IP, which is a canonical A-position. However, *pro* must also be identified, in this instance by AGR. For the Italian (and Spanish) child, the identification requirement will be satisfied since these languages have a 'rich' enough AGR. Thus, Italian/Spanish-speaking children will have an early grammar which is just like the adult grammar in all relevant respects. English AGR, however, is not a possible identifier in this sense. Thus, for the English-speaking child, *pro* in Spec-IP is licensed (given the default parameter setting), though not identified and hence, *not* a grammatical option. There is, however, another grammatical option. By hypothesis, the movement of the subject to Spec-CP creates an A-position and hence a licensing context for *pro*; thus, *pro* is licensed just in case it moves from Spec-IP to Spec-CP, but crucially not if it moves from the object position. We thus derive the basic subject/object asymmetry of null arguments in early English.

A null subject will be licensed in Spec-CP under the default parameter setting; no such option is available for null objects. We assume that *pro* in Spec-CP is identified via topic-identification. We return to the question of identification below. Thus, early English represents a kind of hybrid — the identification requirement is met via topic-identification as in German and Dutch, while the licensing requirement is satisfied via Spec–head agreement with AGR roughly in the manner of a *pro*-drop language (though we will have more to say about this below).

There are a number of interesting questions which arise. First, note that the null argument parameter as formulated in (16) does not have a non-null argument option. All that is required to license *pro* is Spec–head agreement, potentially available in all languages. Thus, by our hypothesis all languages are null subject languages as regards the licensing requirement. They will vary with respect to whether *pro* is licensed in A- or Ā-position and we assume that each language realizes either one or the other option.[11] The situation with respect to identification is different, however. While only languages with rich AGR can identify *pro* in Spec-IP, topic identification seems less categorical. There are languages such as Chinese which are strongly discourse-oriented and hence virtually any argument can be null provided it has a discourse antecedent. At the other extreme, there are languages such as English which allow topic drop under rather restricted circumstances. Thus, in English second person subjects can be omitted in questions such as (21a), non-thematic subjects may also sometimes be omitted as in (21b), and first person subjects may be dropped in diary contexts (Haegeman 1990). English is thus a RESIDUAL TOPIC-DROP LANGUAGE.

(21) a. *Wanna leave?*
      b. *Seems like it's gonna rain.*
      c. *Had a wonderful day today.*

Moreover, there is a great deal of dialect variation with respect to which topics can be null in the Germanic topic-drop languages. For example, several Southern German dialects and Swiss German allow null second person singular subjects, while Northern German does not (cf. Penner 1990).

Thus, the determination of an appropriate identifier is dependent to a large degree on language-specific factors (though there are clearly general principles operating as well). It seems natural, then, that the locus of variation in the null argument phenomenon should be identification and not licensing. In this respect, the hypothesis being proposed here seems to have the right general character, i.e., all languages license null subjects, but they vary with respect to what counts as an appropriate identifier. To the extent that this is true, the identification mechanisms require learning or at least fine-tuning. This would explain why young children acquiring English can drop subjects (i.e., topics) in contexts in which this is not possible for adult speakers, i.e., contexts outside those in (21). At the earliest stages, they have not yet appropriately restricted the class of identifiers. How they do this is not an easy question to answer and we will not attempt to do so here.

The analysis being proposed, specifically, the claim that Spec-CP is an A-position and hence a licensing context for *pro*, has a number of empirical consequences. First, as noted above, we derive the asymmetry in argument drop that we find in early English. Null objects are excluded in English since *pro* must be licensed in an A-position. This default parameter setting may not be abandoned without positive evidence and as we will see shortly, there is no trigger in English which would induce the child to reset to the Ā-option, as there is in German and Dutch. (We return to these languages shortly.) Second, since we assume that English-speaking children do not differ from adults as regards the licensing of null subjects, i.e., the parameter in (16) (though the identifiers differ for children and adults), we do not expect to find a discrete shift in development from null subject to non-null subject use since this is not the result of a parameter resetting. Rather, the change will be more gradual as the child determines the proper discourse conditions for topic identification in English. Again, this seems a particular natural treatment since we know independently that the development of discourse and pragmatic knowledge can be quite protracted (Chien & Wexler 1990; Hamburger & Crain 1982; Karmiloff-Smith 1980).

We take the English situation to be a *marked* one. Recall that the child's initial hypothesis is that *pro* is licensed in an A-position under Spec–head agreement with AGR. In the unmarked case, this refers to a canonical A-position as represented, for example, by Italian. In English, *pro* is licensed in a non-canonical A-position, derived by movement, and thus the licensing Spec–head relation is non-local, i.e., Spec-CP and AGR, as illustrated in (19) above. We assume that there is a certain cost associated with this. This might ultimately explain the fact that topic drop is a rather marginal phenomenon in English. Moreover, with respect to development, if there is a cost associated with the construction, we might expect that null subjects in English would be less frequent than in a language such as Italian with 'canonical' *pro*-drop. This latter prediction is confirmed in Valian (1990), who compares the rate of null subject use by young English- and Italian-speaking children. Her results show that Italian children omit lexical subjects at a rate of approximately 70 percent while English-speaking children at a comparable developmental stage omit subjects at a rate of 30 percent.[12]

A final prediction which follows from our analysis is that English-speaking children should omit subjects only from first position, i.e., Spec-CP. This prediction is supported. Valian (1991) notes that children rarely, if ever, drop subjects in *wh*-questions (cf. also Rizzi, this volume).[13]

Before concluding this section, let us turn to the question of null arguments in early German and Dutch. We have argued that the default option for the

parameter in (16) is that *pro* is licensed in A-position. In German/Dutch, however, as in English, AGR is not a possible identifier, and hence *pro* in Spec-IP is not a grammatical option for the German/Dutch child. There are two possible scenarios, then. The German/Dutch child might assume the marked English analysis, in which a null subject *pro* is licensed in Spec-CP. This would predict an initial subject/object asymmetry in null arguments for German and Dutch children, as is the case for English-speaking children. Weissenborn (1990) reports such a stage at a very early point in the acquisition of German, although it is unclear how general a phenomenon this is.

Alternatively, the evidence for the $\overline{\text{A}}$-value along the null argument parameter may be so robust that children immediately set the parameter to that value. One likely trigger for the $\overline{\text{A}}$-option is the realization that the language is V2 since it is the presence of V in COMP which licenses *pro* in Spec-CP. As discussed earlier, children learn the V2 requirement at a very early age. If this is the case, then we would predict that German and Dutch children would have both null subjects and objects from the earliest point. It is also possible that there is individual variation with respect to this aspect of grammar; some children might opt for the marked English analysis, while others might analyze the data more efficiently, by-passing such a stage, and moving directly to the $\overline{\text{A}}$-parameter setting. On the assumption that German/Dutch children do go through the marked English-type analysis, there would be pressure to reset to the other value of the parameter, in order to reduce the markedness of the system. The data which would trigger a resetting to an unmarked value in Dutch/German are not available for English-speaking children, who therefore stay with the marked analysis.[14]

To conclude this section, let us just note that to the extent that the Spec-CP analysis of null arguments in early English is empirically supported, it provides further evidence for the main hypothesis of this paper, which is that children project to a CP from the earliest stages.

4. A Learnability Argument for COMP

In the previous sections we considered several conceptual and empirical advantages of the FCH. In this section we will show that considerations of learnability also require that children start out with a COMP-system.

We noted earlier that in languages such as German and Dutch, the verb raises to COMP in tensed clauses. The evidence for this is the complementarity which exists between complementizers and fronted verbs, illustrated in (22). In (22a) *daß* occupies COMP and hence the verb is blocked from raising to that position.

(22) a. **Ich weiß   daß die Kinder   haben den Film gesehen.*
          I   know that the children have   the film seen
      b. *Ich weiß   daß die Kinder   den Film gesehen haben*
          I   know that the children the film seen   have

There are, however, other V2 languages in which in we find verb raising and topicalization in tensed subordinate clauses in the presence of a complementizer. Icelandic is such a language. Thus, in Icelandic we do not find the complementarity between verb raising and complementizers that we find in German and Dutch. Consider in this regard the Icelandic sentence in (23).

(23)   *Jón segir að   þessum hring hafi Páll lofad   Maríu.*
            John says that this   ring has Paul promised Mary

Thráinsson (1986), Rögnvaldsson (1984), and more recently, Rögnvaldsson and Thráinsson (1990), argue that in Icelandic the verb does not raise all the way to COMP, but rather only as far as INFL, (or assuming a split INFL system, it raises to the higher INFL position). Diesing (1990) argues that Yiddish, another V2 language, also has V-to-I.[15]

According to the raising-to-INFL-analysis, in (23), the tensed auxiliary raises to the head of IP while the object, *this ring*, raises to Spec-IP. The relevant structure is as in (24). (I will assume, following Rögnvaldsson & Thráinsson 1990, that the subject *Páll* is in a base-generated VP-internal position, though it is possible that it occupies a lower IP-internal position. This is irrelevant to the analysis.)

(24) $[_{IP}$ *Jón segir* $[_{CP}$ $[_{C}$ *að*$]$ $[_{IP}$ *þessum hring*$_i$ $[_{I}$ *hafti*$_j]$
            $[_{VP}$ *Páll* $[t_j]$ *lofad* $[t_i]$ *Maríu*$]]]]$
            'John says that this ring has Paul promised Mary.'

If it is the case that V2 languages vary with respect to the position the verb raises to, as Icelandic (and Yiddish) seem to show, then the question arises as to how this parameter might be fixed by the child.[16] In particular, what would the default hypothesis be? *A priori*, there are two possibilities, either the child assumes the V moves to INFL or she or he assumes V-(to I)-to COMP. The short clause analysis discussed earlier is equivalent to the claim that the default option is V-to-I (since there is no COMP position). As we will see, however, this raises a rather vexing learnability problem.

So let us assume that V-to-I is the default setting. This is roughly the hypothesis being proposed by the ShCH. In this case the Icelandic child will have no further work to do. The German/Dutch child, in contrast, will have to reset the parameter to V-to-C. Recall, however, that the evidence that V moves

to COMP in German and Dutch is provided by the fact that the verb *cannot* raise in the presence of a complementizer, for example in data such as that in (22a). In other words, the child would require negative evidence, namely, information that certain strings or structures are *not* possible in the language. It is a fact of acquisition that children do not have systematic access to negative data of this sort. Given this, the German- or Dutch-speaking child who had a V-to-I analysis would have no way of revising this incorrect setting on the basis of positive evidence alone.[17]

Thus, the proposal that children begin with V-to-I is suspect on grounds of learnability. Moreover, as discussed in Section 2, this hypothesis predicts, contrary to fact, that German and Dutch children will front verbs in embedded clauses just as Icelandic adults do.

Let us now consider the second scenario in which V-to-C is the default setting. This will be the correct analysis for the Dutch and German child and hence no parameter resetting will be necessary in these languages. On the other hand, the Icelandic child will need to reset the parameter to V-to-I and she or he will need positive evidence to do this. Such evidence is immediately available. Sentences such as (24), in which the verb raises in the presence of a complementizer, provide clear evidence that V does not raise to COMP in Icelandic, but to some lower functional head.

Proponents of the ShCH might argue at this point that the learnability problem is not a problem for their analysis since, strictly-speaking, on this hypothesis there is no COMP position for the verb to raise to and thus V-to-I is the *only* option. On this view, then, the default is 'Raise to the highest functional head there is.'[18] During the short clause stage, the child raises to INFL, as is proposed within the ShCH, and it is only during the subsequent stage, with the maturation of COMP, that the (new default) option to raise to COMP is instantiated. While this proposal would reconcile the ShCH with the necessity for a default V-to-C analysis, it faces an empirical problem. The 'Raise to the highest head' hypothesis predicts that Icelandic children will initially assume V-to-I (during the short clause stage), then adopt the default V-to-C when COMP matures, and then finally move to the (correct) V-to-I analysis. As we will see in the following section, the empirical data from Icelandic do not seem to support this hypothesized 3-stage developmental sequence.

To sum up, learnability considerations require that V-to-C be the default setting and hence that COMP be available as a landing site for verb raising in the initial grammar. In the following section, we review some interesting data from the acquisition of Icelandic which provide empirical confirmation for this logical argument.

4.1 *V-to-C in Icelandic Child Language*

The analysis just outlined predicts that Icelandic children will initially assume the default parameter setting in which V raises to COMP. If this is the case, the child's language will differ in predictable ways from the adult language and there is a specific pattern of inversion errors which should occur. The first is an 'error of omission'. We predict that the Icelandic child will not allow topicalization in embedded clauses. That is, we should not find sentences such as (24). Recall that (24) is possible in the adult language because topicalization moves an XP into Spec-IP, not Spec-CP. By our hypothesis, topicalization in the child's language is to Spec-CP. Sigurjónsdóttir (1987) reports that Icelandic children between the ages of 2;0 and 3;6 systematically fail to topicalize in embedded clauses. This result is particularly striking in that these same children topicalize freely in matrix clauses, as illustrated in (25), and their topicalization sentences are correct about 90 percent of the time (examples from Sigurjónsdóttir 1987).[19]

(25) a. *Nú bakkar hún.*
     now backs she
   b. *Essa á mamma.*
     this one owns mama
   c. *Kannski kemur hann.*
     maybe comes him

This difference between main and subordinate clauses in child language follows from our analysis since in the matrix clause the topic can move to Spec-CP and the fronted verb to COMP, which is empty.

There is no question that by age 2;0, Icelandic children have verb inversion. According to Sigurjónsdóttir, inverted sentences including OVS sentences such as (25b), and VSO sentences, which are interrogative or imperative, as in (26a), comprise about 30 to 40 percent of their utterances;[20] the other 60 to 70 percent are SVO, as in (26b). Finally, Icelandic children always correctly invert the verb in *wh*-questions, as in (26c).

(26) a. *Kann þessi stúlker ekki að labba?*
     knows this girl not to walk?
   b. *Ég vil fa' kex.*
     I want get crackers
   c. *Huad fékk ég i skóinn?*
     what got I in the shoe?'

Sigurjónsdóttir points out that Icelandic children in the age range she studied make virtually no word order errors. One error is an occasional failure to front the verb in topicalized sentences (cf. note 19). A more interesting error given our analysis involves an overgeneralization of verb fronting which occurs in embedded interrogatives. Sigurjónsdóttir reports that approximately 10 percent of their embedded questions appear with the verb incorrectly inverted, as in (27a). This should be compared to the correct adult sentence in (27b).

(27) a. *Sérdu á hverju stendur klukkan?*
see you on what stands the clock?

b. *Sérdu á hverju klukkan stendur?*
(correct adult form)

This particular word order error follows from our hypothesis that the children are moving V-to-C, while in the adult language, the movement is V-to-I. The structures corresponding to (27a, b) are given in (28a, b), respectively.

(28)


```
              . . . . CP
             /           \
          Spec            C'
           |             /    \
           |            C      IP
           |            |     /    \
           |            |   Spec    I'
           |            |    |     /   \
           |            |    |    I     VP
           |            |    |    |
      a.  á hverju  stendur klukkan
      b.  á hverju         klukkan  stendur
```
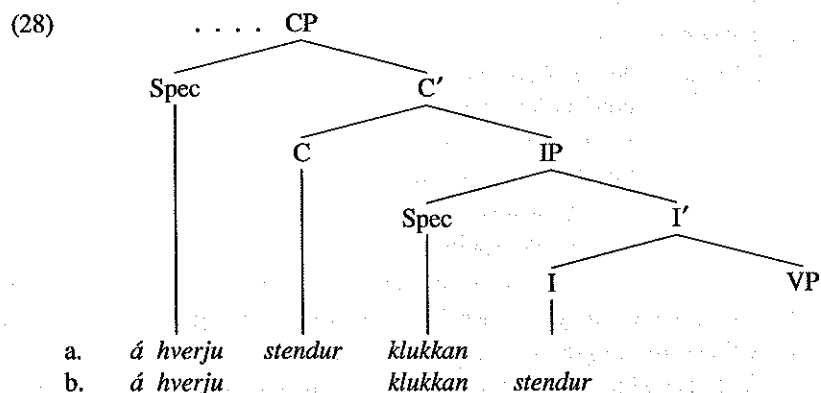
What is striking about the Icelandic data is the selective pattern of omission and error. These children have productive control of verb raising and they exhibit the full range of inverted structures — except for topicalization in embedded clauses. They make very few word order errors, but they incorrectly invert the verb in embedded interrogatives. Both of these results follow from the analysis proposed here, namely, that the default setting along the verb movement parameter is V-to-C, an analysis which is otherwise forced by considerations of learnability.

This analysis leads to a number of questions and problems. One of these is that, as we noted earlier, German-speaking children never overgeneralize verb raising in embedded contexts. They do not raise verbs in embedded declaratives, such as (22a) *and*, as it turns out, they do not raise the verb in embedded

interrogatives either (Harald Clahsen, pers. comm.). Thus, they differ from Icelandic children in this respect. This would seem to be a problem for our analysis in that by our hypothesis German and Icelandic children both have V-to-C, and hence, all else being equal, they should behave the same.

So the question is: Why do German (and Dutch) children fail to move the verb to COMP in embedded interrogatives, while Icelandic children do? Our answer to this question is that although both German and Icelandic children have V-to-C, all else is *not* equal. In particular, in standard adult German complementizers may not delete, while in Icelandic complementizers may delete in certain contexts.[21] Let us assume that Icelandic and German children know the relevant property in their respective languages. The Icelandic child will assume that complementizers are optional and that whenever a complementizer fails to occur, for example in embedded questions, verb raising is possible. The German child, in contrast, will assume that the COMP position must be filled in embedded clauses.[22] As noted earlier (see also Hyams 1985), I am assuming that COMP may contain a null complementizer, which though it has no phonological matrix nevertheless has sufficient syntactic content to block movement of V-to-C.

5. Concluding Remarks

In this paper we have argued on both logical and empirical grounds that the early phrase structure (by which I mean by age 2, if not earlier) must contain, in addition to some minimal INFL system, a COMP projection. I refer to this as the Full Clause Hypothesis (FCH). This runs directly counter to the Small Clause Hypothesis, which holds that the early grammar projects only lexical categories, and the Short Clause Hypothesis, according to which the early grammar lacks a COMP system (though it may have one or more INFL projections).

We have presented a number of empirical arguments for the FCH. First, children acquiring V2 languages such as Dutch and German, as well as children acquiring residual V2 languages like English, raise finite verbs (or auxiliaries in the case of English) to a functional position above IP, arguably COMP. Moreover, interesting differences in the distribution of null arguments in the acquisition of German/Dutch vs. English vs. Italian follow under the related hypotheses (i) that German/Dutch licenses null arguments (*pro*) in Spec-CP, and (ii) that English is a residual topic-drop language, which also licenses a subject *pro* in topic position (as a marked extension of the grammar). The V2 and null

subject properties follow from the hypothesis that the early grammar projects to a CP. Finally, we provided a logical argument for the CP analysis; to the extent that V2 languages vary with respect to the position that the verb raises to, V-to-I versus V-to-C, learnability considerations require that V-to-C be the default option.

If, as we are proposing, children have full clauses, what accounts for the 'telegraphic look' of early language? That is to say, why would children who have functional projections fail to reliably produce functional elements? The basic premise of the small clause and short clause analyses is that missing functional elements reflect missing categories and the primary empirical basis for these hypotheses is the absence of inflectional elements, complementizers, etc. However, functional items are often missing during a period of time in which children have syntactic operations which require functional categories. For example, young English-speaking children typically drop 3rd person singular -s and auxiliaries. By the assumptions of the SCH these children project only as high as VP. But we know from the position of subjects and negation that children who drop -s and auxiliaries have subject raising to Spec-IP, as illustrated by the examples such as those in (29) (from Bellugi 1967):

(29)   *He not bite you.*
         That no blast off.
         I not get it dirty.
         I not bending them.

Moreover, crosslinguistic studies show that children acquiring more richly inflected languages do reliably supply verbal inflection at an age when English-speaking children are still omitting -s. (See Hyams 1992a for review of relevant studies and languages.) Thus, the problem would seem to have more to do with properties of the inflectional system of English than with any deep-seated developmental principle such as the SCH. In Hyams (1992a) I suggested that in assessing the development of inflection in English-speaking children, we should focus on the acquisition of -ing rather than on -s, since the progressive morpheme is used to refer to ongoing activity and is hence referential, while 3rd person singular -s has only a generic, non-referential reading with non-stative verbs (Enç 1987; Campbell 1991). In this respect, the English present tense system differs markedly from the other languages which have been the focus of acquisition studies, e.g., German, Dutch, Italian, etc. Thus, the delay of -s is arguably due to semantic difficulties and the 'real' present tense affix is -ing, which is acquired relatively early; -ing is the first of Brown's (1973) fourteen

morphemes to be acquired. This assumption, coupled with Wexler's (1992) hypothesis that children at this stage have a free use of infinitives in root contexts, accounts for the telegraphic quality of early English, at least as regards inflection.

Similarly, we saw earlier that children acquiring V2 languages and residual V2 languages give evidence of verb movement to COMP at a point at which they are not yet using lexical complementizers, again calling into question the basic premise of 'missing elements = missing category'.[23] With respect to the question of missing complementizers, Hyams (1985) proposed that this is an effect of lexical learning. The choice of complementizer depends on the selectional properties of particular verbs. Thus, *try* selects a <–tense> complement, while *think* selects a <+tense> complement, etc. We know that selectional properties must be learned and so must the complementizers themselves and the lack of semantic content makes them not particularly salient or interesting. It is therefore not surprising that such lexical items are acquired relatively late. As proposed in Hyams (1985), we need to distinguish the acquisition of *complementation* as a semantic/syntactic phenomenon from the acquisition of *complementizers* which is a kind of lexical learning. Thus, we can imagine a structural realization principle such as that in (30) (from Hyams 1985) which will allow the child to project a CP complement based on her knowledge of the semantics of the verb, i.e., the knowledge that it selects a propositional argument.[24]

(30)   In order for a constituent to be interpreted as propositional it must be syntactically realized as CP.

Since the knowledge of complementation (principle (30)) is logically separate from the selection of the tense of the complement of particular verbs and hence the choice of complementizer, it follows that these should develop independently. This is what we expect within a modular system. Thus, a child may have knowledge of the CP structure of complements while still not producing lexical complementizers.

To conclude, the premise that missing functional items = missing functional categories is difficult to maintain given the fact that children have syntactic operations involving functional categories at the point at which they fail to reliably produce functional elements. A simpler explanation for the missing lexical items is just that the lexical items are missing, essentially because they have properties which make them difficult to learn, for example, lack of referentiality or meaning, etc. Since on everyone's account these lexical elements (words and affixes) must be learned, the most parsimonious explanation is that this is all that the child must acquire.[25] This view will likely mean that there are

different reasons for the absence of different functional elements. This is in contrast to the SCH and ShCh which propose a unified explanation for all missing items. But, in fact, the crosslinguistic variation associated with the acquisition of functional elements, as well as the staggered development of different items within a particular language, fully supports a lexical learning approach over a structural one.

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Notes

1. One exception to this is Platzack (1992), who argues for a small clause analysis of Swedish child language. However, there are a number of problems with Platzack's analysis of the Swedish data, which are discussed in detail in Hyams (1992a). When properly interpreted we believe that these data argue against a SCH and in favor of the full clause analysis proposed in this chapter. See Hyams (1992a) and also Wexler (1992) for discussion.

2. Following standard analyses, I assume, moreover, that the verb first raises to one or more inflectional head positions and then to COMP. Whether or not this is the case in the child's grammar is discussed shortly.

3. See Hyams (1992a) for detailed discussion of the German, Dutch and Swedish acquisition data. See also Wexler (1992) and the various papers in Meisel (1992).

4. Clahsen (1991) also argues that children do not raise the verb all the way to COMP but rather to an intermediate INFL position. A similar proposal is made in Jaeggli & Hyams (1988) in order to account for pro-drop effects in early German. We claimed that tense

features are initially located in INFL rather than COMP. However, our analysis (like Clahsen's) did not assume that the child has a split INFL system, as Meisel & Müller do.

5. Meisel & Müller do not discuss yes/no questions in French and thus we do not know whether French children exhibit the same curious pattern as English children who invert only in yes/no questions.

6. Nothing we have said thus far explains why English-speaking (and French-speaking) children fail to raise the auxiliary in wh-questions, as shown in (3) and (5). If children have a CP and hence a COMP position for the finite auxiliary to raise into, this result is unexpected.

   Klein (1982) (within an earlier (pre-CP) framework) deals with this issue at length. She proposes that children assume AUX inversion is a substitution into COMP. As a result, inversion is blocked when COMP is occupied by a wh-phrase. Translating Klein's proposal into the current framework, in which CP contains a head and specifier position (Chomsky 1986), one possible explanation is that children misanalyze wh-elements as heads — possibly base-generated in COMP (as Klein assumed). The wh-element thus blocks AUX from raising to COMP. This hypothesis leads to at least two empirical predictions. First, we predict that children will have more difficulties with complex wh-phrases such as what boy, which dog, etc. since these cannot easily be analyzed as heads. Second, wh-movement should be strictly local, being an instance of head movement. We do not know at present whether these predictions are confirmed or not.

   An analysis along these lines has been independently proposed in van Kampen (1989).

7. Meisel & Müller (1992) report that one of the three children in their study did make V2 errors in subordinate clauses; Gawlitzek-Maiwald et al. (1992) also report on one German monolingual child who made such errors. Though these cases require explanation, they are the exception rather than the rule. Moreover, almost all of the V2 errors cited occur in adjunct clauses introduced by wenn 'if/when' (eg., ...wenn da komm andere schiffe dann gehn die dagegen 'when there comes other boats then go they it-against') or conjoined clauses. It is possible that in these cases, the child has misanalyzed the dependent clauses as a main clause introduced by an adverbial when (Meisel & Müller suggest a similar idea). V2 would then apply as in main clauses. More compelling evidence of V2 in subordinate clauses would be errors in subcategorized complements introduced by true complementizers. Only one such error is reported.

8. Bloom (1990) and Valian (1990) argue against the grammatical account of subjectless sentences and propose instead that children drop subjects because of performance limitations. See their papers for further discussion and Hyams & Wexler (1993), who show that processing models completely fail to account for the basic statistical and theoretical data associated with pro-drop in early language.

9. Rizzi (this volume) independently arrives at an analysis of the null subject phenomenon in early English similar to the one proposed in this section. In particular, Rizzi and I

both argue (*contra* Hyams 1983, 1986) that null subjects in early English differ from null subjects in *pro*-drop languages such as Italian, and are most closely related to the 'diary-drop' phenomenon discussed in Haegeman (1990). The two analyses differ in other respects and a detailed comparison is beyond the scope of this paper.

The ideas proposed in Section 3.2 are quite tentative. Hyams (in prep.) further develops and substantially modifies the analysis by eliminating the null argument parameter as an independent parameter and deriving the crosslinguistic variation in null arguments from independent principles of grammar, notably verb raising.

10. We should note that the analysis of topic drop proposed here is restricted to the V2 languages and not intended to cover Chinese-type topic-drop languages.

11. We make the assumption that a language must choose a single option though we recognize that this may be too strong a requirement. American Sign Language (ASL) seems to allow both options. See Lillo-Martin (1992) for discussion. For the purposes of the discussion, we leave the case of ASL, and other 'mixed' systems (if such exist) aside.

12. Valian argues that the frequency differences are due to the fact that English-speaking children omit subject for performance reasons (processing overload), while Italian children do so for grammatical reasons, that is, they have a *pro*-drop grammar. Note, however, that there is no theoretical reason why performance-induced null subjects should occur at a lower frequency than grammatically-induced null subjects. See Hyams & Wexler (1993) for a detailed critique of performance accounts of the null subject phenomenon.

13. Roeper (1991) notes that Adam (CHILDES, MacWhinney & Snow 1985) does omit subjects in *wh*-questions, as in (i):
(i)   *Where going?*
We will assume that sentences such as in (i), which are apparently rare, are derived via adjunction of the *wh*-phrase to CP.

14. Notice that there is an important distinction between a 'default' parameter setting, a 'marked' option, and an 'initial' setting. The default setting is that which is assumed in the absence of evidence to the contrary. By our hypothesis, *pro* in A-position is a default analysis. It also may be the initial setting. This is an empirical matter and depends on whether German/Dutch children go through an initial English-like stage, *despite the evidence that German/Dutch licenses* pro *in Ā-position*. The English acquisition facts cannot decide the question since in English the default and initial options converge in the absence of evidence for an Ā-analysis. Finally, with respect to the issue of markedness, we take the licensing of *pro* in a non-canonical A-position to be marked, for the reasons outlined in the text. However, we maintain that neither of the antecedently available options along the null argument parameter is marked with respect to the other. In other words, we reject the position that the unmarked value is necessarily identified with either the initial or default option and more generally, the idea that markedness is a developmental notion, though it has obvious implications for development, as discussed in the text. See Hyams (1986, chapter 6) for further discussion of this issue.

15. Vikner & Schwartz (forthcoming) argue that V2 always involves raising to a position outside IP, thus disputing the IP analysis for Icelandic and Yiddish. The details of this debate are outside the scope of this paper. Suffice it to say that if it turns out that V2 always involves movement to the COMP position, then this renders even less plausible the claim that children do not have a COMP projection since verb raising is a very early development, as discussed in the text.

16. If V2 languages vary with respect to the position of the raised verb, then it cannot be the case that the defining characteristic of V2 languages is V-to-C movement (cf. Diesing 1990; Rögnvaldsson & Thráinsson 1990). Thus, we do not follow Platzack & Holmberg (1989) in assuming that their finiteness parameter (V-to-I vs. V-to-C) separates V2 from non-V2 languages. Rather, we assume that this parameter separates V2 languages such as German from V2 languages like Icelandic and that the parameter is therefore set only by children acquiring V2 languages. Thus, although we will propose that V-to-C must be the default setting of this parameter, this will have no effect for children acquiring non-V2 languages such as English and French, for whom the parameter is not accessible. With regard to the latter languages, we assume, following Chomsky (1992), that there is an independent parameter which determines whether V-to-I happens in the syntax, as in French, or at LF, as in English. This parameter may interact with the V2 parameter but is distinct from it.

17. One might argue that since German is head-final and INFL is on the right periphery, the child could deduce V-to-C simply by noting that the finite verb is not in final position (i.e., INFL), but rather in some position to the left. There are two problems with this solution, however. First, there is nothing to prevent the child from assuming that the position on the left which contains the finite verb is some other functional head, distinct from both IP and CP, as in (i):
(i) $[_{FP}$ *Ich*$_i$ $[_F$ *kenne*$_j$ $[_{IP}$ t$_i$ $[_{VP}$ *den Mann* t$_j$ $]]]]$
             FP ≠ IP, CP
Second, although German and Dutch are 'mixed' systems, i.e., CP is head-initial and IP is head-final, there are V2 languages with V-to-C in which both INFL and COMP are on the left, for example Swedish. Thus, the logical problem discussed in the text remains even if not in the specific case of German.

18. I am grateful to two anonymous reviewers for pointing out this possibility to me.

19. The errors in topicalized structures typically involve a failure to front the verb, i.e., the verb occurs in third position. Thus we have examples such as those in (i):
(i)   *Nú hann er búin.*
             'Now he is done.'
             Hérna stóllinn sér míg eki.
             'Here the chair sees me not.'
             Þa ég kom á sjá bilinn.
             'Then I came to see the car.'

20. Included in the 30–40 percent are *wh*-questions.

21. Specifically, complementizers under bridge verbs may delete when the embedded subject is pronominal (Sigurjónsdóttir, pers. comm.). Consider the following contrasts:
    (i)   *Ég tel (að) hún fari á morgun.*
             'I believe (that) she leaves:SUBJ tomorrow.'
    (ii)   *Ég tel (*að) Jón fari á morgun.*
             'I believe (that) John leaves tomorrow.'
    (iii)   *Ég veit (að) hún fer á morgun.*
             'I know (that) she leaves:IND tomorrow.'
    (iv)   *Ég veit (*að) Jón fer ú morgun.*
             'I know (that) John leaves tomorrow.'
    The reason for the pronominal restriction is not clear to us. Recall, however, that Icelandic has V2 and fronting of an XP in embedded clauses as well as root clauses. Thus, one possible explanation for the optionality of complementizers with pronouns is that the pronominal subjects are optionally clitics. When they are realized as clitics, they raise to COMP (rather than Spec-IP, the normal position for the subject or other constituent to raise to). When the pronoun occupies COMP, no complementizer may occur there.

22. I am indebted to Kyle Johnson for pointing out to me this syntactic difference between German and Icelandic and for suggesting how it might influence the development of inversion in subordinate clauses in the two languages.

23. See Hyams (1992a), where I argue that this premise is also conceptually flawed.

24. For discussion of structural realization principles (otherwise referred to as boots-trapping), see Grimshaw (1979, 1981) and Pesetsky (1982).

25. If functional elements are processed or accessed differently from lexical elements, as has been argued by Garrett (1975) and others, this might also contribute to their relative inaccessibility.

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