Chapter 7

The acquisition of constituent questions and the requirements of interpretation

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1 Introduction

From the age of 2 years, children never seem to make mistakes with respect to the order of the verbal element and its complement. In accordance with their target language, German children place the complement before the uninflected verb, whereas Danish, English and French children place it after the verb, see (1a–d).

(1) a. hubsauber putzn (Andreas, 2.1, German)
   helicopter clean(v/inf)
 b. gribe bold (Anne, 1.7.18, Danish)
   catch ball
 c. man drive truck (Allison, 1.10, English)
 d. oter la coquille (Augustin, 2.0.23, French)
   take off the shell

In contrast to this early development, fully adult-like constituent questions (Wh-questions) appear 'late': around 2.6, and often as late as 3.6. Early questions are mostly formulaic or are systematically deviant from adult usage. Klima and Bellugi (1966) found that English children either do not invert the subject and the auxiliary in their first Wh-questions or do not insert the auxiliary at all, (2). Guasti (this volume) finds about 40% non-adult questions in Child English. Likewise, French children prefer questions without inversion of the verbal element and the subject, as shown in (3). This form, though not allowed in Standard French, also occurs in adult Colloquial French. So early questions such as (3) are not target deviant. It has been observed for German, Swiss German and Dutch (Penner 1994, Tracy 1994, Clahsen *et al.* 1995, van Kampen 1997) that children often use forerunners of constituent questions where the Wh-element is missing, as in (4) and (5). In Child English the use of finite non-inverted main verbs in Wh-questions can occur quite late, as Guasti shows for Adam's and Sarah's use of finite non-inverted main verbs (Guasti, this volume). The developmental curve for Laura's acquisition of constituent questions in Dutch (van Kampen 1997:81) shows questions with a missing Wh-element till the age of 3.7.

(2) where dis goes (Adam, 2.8, Brown)

(3) a. où il est? (Philippe, 2.1.19, Childes, Leveillé)
where he is
b. où il est canard? (Marie, 2.1.28, Geneva Corpus)
where he is duck

(4) a. isch das? (S., 2.0) (Penner 1994)
is that
'what is that'

(5) a. ga jij nou heen? (Sarah, 2.3.26) (van Kampen 1997)
go you then to
'where are you going'
b. is deze vor nou? (Laura, 3.2.9) (van Kampen 1997)
is this for then
'whom is this for then'

What is so difficult or special about questions? To investigate this problem, we have to look more closely at the syntax and semantics of constituent questions: the projections which are involved and the fact that a question necessarily contains a scope-marking element which indicates which part of the utterance falls under the question force.

2 Theoretical background

2.1 The interpretation of questions

In generative theories of grammar, it is assumed that 'there is a level of linguistic interpretation at which all grammatical structure relevant to semantic interpretation is provided', (Hornstein 1995: 3). This level is called Logical Form (LF). Semantic interpretation operates off this level providing the truth conditions for the sentence. Quite often, interpretation is possible directly from the overt form of the utterance. There are sentences, however, which look structurally alike on the surface, but have a completely different LF-structure. This can happen if a surface subject is not a simple name (*John*), but involves a quantifier (*everybody*). In such a case, scope relations have to be made explicit at LF. Exactly the same holds for questions: like utterances containing negation or tense, they require operators for their interpretation. This is so because one can think of the interpretation of a question as the set of propositions, here written as {P}, which are appropriate answers to it. Question (6a) has the possible answers: Jane has bought shoes, Jane has bought a dress, Jane has bought a dog, etc. Such a list of alternatives is captured semantically by the use of a variable as in (6b) and the actual interpretation, the set of true answers, is (6c).

(6) a. What has Jane bought?
b. Jane has bought x
c. $\{P \mid \exists x\ ((x \text{ is an entity}) \ \&\ P= \text{Jane has bought } x\ \&\ \text{true}(P))\}$

In the English question (6a), the Wh-element occupies sentence-initial position and serves to mark question scope over the propositional frame. This helps to determine the appropriate answers. At the same time, it indicates which particular argument of the predicate the question is about. This also narrows down the possible answers, compare (6a,b) and (7a,b).

(7) a. Who bought a book?
b. x bought a book

The standard syntactic treatment of (6a) assumes that the Wh-element is generated in object position, but moves to sentence-initial position and leaves behind a trace, which serves as the variable. This gives (8a). Here, *what* functions as an operator which marks the structure in its scope, i.e. the rest of the sentence, as a question. The inner bracket provides a propositional frame closely resembling (6b). In a more articulated system which assumes at least three shells of sentence structure (VP, IP and CP),[1] such an analysis has the form shown in (8b), where the specifier–head relation of Wh-word and auxiliary is a necessary consequence of either a feature-checking mechanism as assumed in Chomsky (1995) or of the Wh-criterion as introduced by Rizzi (1991) and discussed by Guasti (this volume). The interpretation remains as in (6c).

(8) a. [what$_i$ has [Jane bought t$_i$]]
b. [$_{CP}$ what$_i$ [$_{C'}$ has$_j$ [$_{IP}$ Jane$_k$ [$_{I'}$ t$_j$ [$_{VP}$ t$_k$ [$_{V'}$ bought t$_i$]]]]]]

So the overt syntax of the Standard English question (6a) makes the interpretation explicit. But not all languages do this. In Asian languages, the Wh-element remains in-situ and the same possibility exists in Colloquial French, see (9).

(9) Jeanne a acheté quoi?
Jane has bought what

If the semantic frame is not given overtly, the question interpretation, especially question scope, must be read off some other level. The usual assumption is that the Wh-element of an in-situ question moves covertly at LF. Leaving aside the problem of auxiliary movement to Comp here, the French question (9) has roughly the same LF as shown in (8) with the French words substituted for the English ones. This sameness is the result of design, of course, making a natural assumption about human languages. Interpretations are constant across languages, only the overt syntax may vary. In other words, Logical Form, the level which provides the input for semantic interpretation, is universal.

2.2 Assumptions about acquisition

These standard assumptions about the interpretation and syntax of questions help to make the child's difficulties more precise, especially in the light of certain approaches to the acquisition of language. Let us adopt a view of Full Continuity modified in the sense of Borer and Wexler (1987) or Rizzi (1994). This implies that Universal Grammar (UG) is available from the beginning and that principles are never violated. But it also implies that not only parameters, but also principles of UG, can be underspecified and mature. Wexler (1994), Hyams (1996) and Schütze and Wexler (1996) assume that the tense projection is underspecified, Rizzi assumes that it is the CP which is not obligatorily projected in the first phases of syntactic development. Subsequently, maturation of some principle of discourse grounding or selection will oblige the child to use these projections. Both approaches presuppose that projections are universal. Radford (1990) also adheres to the view of Full Continuity, but assumes that projections are not universal and have to be acquired, one after and on top of the other, triggered by the acquisition of lexico-morphological material.

The Full Continuity Hypothesis, even with a maturational modification, makes it likely that the difficulties in the acquisition of questions and the differences found cross-linguistically in their development are due to syntax, not interpretation. Most researchers agree that children have 'CP-trouble' of some kind. So the problems almost certainly involve the CP-level.

If CP is missing in the early phases of language development (cf. Radford 1990, Clahsen 1991, Clahsen *et al.* 1995), then operator movement to SpecCP cannot take place and the correct scope relations cannot be established unless the Wh-word is simply adjoined or merged to IP. Radford (1990) and also Roeper (1996) take the non-inversion of subject and auxiliary in the Wh-questions of young English children as evidence for the adjunction/merger analysis. Moreover, the occurrence of finite fronted Wh-questions with a sentence-final main verb in Child German as reported by Penner (1994) and Tracy (1994), but not found by Clahsen *et al.* (1995), is most easily explained by a merger analysis. A closer look at the Early English data as provided by Guasti (this volume) gives a different interpretation of this sort of evidence, however, which could be transferred to the German data.

Another approach which presumes 'CP-trouble' is Rizzi (1994)'s truncation hypothesis. Rizzi observes that every root clause must be connected to discourse and be marked for illocutionary force. Because it is the CP-projection which is selected by discourse and where illocutionary force can be marked, he assumes that (10) is an axiom of adult grammar. He further assumes that this axiom is suspended in child grammar. If (10) is not yet in force, any projection can be the root, so that higher projections can be truncated. However, projections can never be truncated if there is material to be accommodated.

(10) Root = CP

The approach implies that every higher projection must be truncated once a projection has been truncated. Conversely, if a projection is activated by material, then all lower projections are selected and thus activated. It follows that a fronted Wh-word activates the CP-projection, so that the IP must be projected and root infinitives cannot occur. Moreover, subjects cannot be omitted from a fronted Wh-question because subject omission must be licensed and the Wh-element, which is in the right c-commanding position, does not qualify as a licenser.

2.3 The problem

With regard to interpretation, the following predictions are obtained. If the CP is not obligatory, but is always projected in the presence of morphological material, then Wh-questions with a fronted Wh-element activate the CP and the correct interpretation can be established. This seems to be borne out in a general fashion because root infinitives have not been found in French or German fronted Wh-questions, see section 3.2.3.[2] However, early questions without Wh-elements as occurring in Dutch and German or early Wh-in-situ questions as occurring in French could be syntactically different if the CP can be truncated. This follows, if we assume that only morphological material can activate a projection.

In section 3.2.3 I show that root infinitives (RIs) do not occur in fronted Wh in Early French, but neither do they occur in Wh-in-situ. Syntactic differences have been found, however, with respect to null subjects. Crisma (1992) reports no missing subjects in the fronted Wh-questions of the French corpus of Philippe, but predicts French Wh-in-situ questions without subjects. This prediction is borne out: my data on Augustin and Marie (see Tables 7.3 and 7.5 and the appendix) show that subjects are frequently missing from Wh-in-situ questions. A similar phenomenon has been observed by Clahsen *et al.* (1995) for German. Covering an age span of 1.7 to 3.8 over 9 children, there are very few (4%) missing subjects in fronted Wh-questions, but about 18% missing subjects in questions without the Wh-element.

Clahsen *et al.* (1995) use these data as an argument for the Lexical Learning Hypothesis. In the absence of the Wh-element or the complementizer there are syntactic differences, they reason, which show that only the full acquisition of the paradigm of lexical Wh-pronouns and complementizers can create the full CP-projection. They use the idea of economy of projection to argue for the view that 'silent' elements do not create a projection and they provide the evidence of syntactic differences as a proof. With respect to complementizers they conclude their argument: 'Hence if the child does not produce any complementizers, we cannot treat these sentences [complementizerless subordinate clauses] as full CPs even though they might have similar meanings as subordinate clauses in the adult language' (Clahsen *et al.* 1995:14, my addition in square brackets).

There is a problem here, however. Having 'similar meanings' implies that the LFs of the clauses with or without complementizers have the same structure and thus necessarily both have a CP at LF. The same applies to constituent questions without Wh-elements and to French Wh-in-situ. Clahsen *et al.* (1995) are aware of this problem and argue that though both types of clauses have the same LF, they still may have different phrase structures (Clahsen *et al.* 1995:19, footnote 4). If this were intended to mean that there must be certain structural differences at Spell-out, I would totally agree. But I do not think that the differences could be as radical as missing out a projection or a position important for the interpretation.

Crisma (1992) speculates about the same problem in the framework of the Truncation Hypothesis. She observes that Philippe only uses fronted Wh in a first phase, though Wh-in-situ occurs frequently in colloquial French. She proposes that Philippe avoids this construction because it obligatorily requires CP at LF, which clashes with the option to truncate this projection in the absence of morphological material. The data I present in section 3.2.2 show that this explanation does not hold across children. Some French children use Wh-in-situ quite frequently so that there cannot be any clash which has to be avoided.

The problem which emerges from this brief discussion is whether interpretational material can force syntactic projection just as morphological material can. Let us return to the interpretation of Wh-questions. If the German child marks question force not by the Wh-element, which is left out, but by the intonational pattern, one can still assume that the child knows that s/he is asking a question. So there must be something which marks this utterance with question force at LF. This could be an abstract, non-overt question morpheme Q, structurally encoding what is given by the intonation. Such an abstract Q-morpheme is no ad-hoc invention. It is standardly assumed for adult Yes–No questions, which in many languages exist in two forms, one (see 11a,b) syntactically distinct from a declarative (though without a Wh-element), but the other (see 12a,b) exactly like a declarative, marked as a question only by intonation.[3]

(11) a. Est-ce que il a achéte le livre?
 b. Has he bought the book?

(12) a. Il a acheté le livre?
 b. He has bought the book?

So at LF at the latest, this abstract Q-morpheme will have to be placed in its usual scope position, i.e. in SpecCP. If the child is communicating and so pairing utterances with meanings, the derivation cannot stop at Spell-out but must provide the LF. It follows that for questions, especially for their interpretative content, there must be CP and SpecCP.

This argument is problematic for the Lexical Learning Hypothesis. For the Truncation Hypothesis it poses a problem only as long as it is assumed that a projection is activated if and only if there is morphological material to be accommodated. I therefore propose that interpretative material which is not available through a default (situational) interpretation also activates projections. If this is the case, however, the obvious explanation for the syntactic differences of fronted-Wh on the one hand, and questions without Wh-elements or Wh-in-situ on the other hand, is not available any longer.

The solution proposed in section 4.5 is straightforward. Just as subordinate clauses introduced by *that* have different syntactic properties from clauses introduced by the null complementizer in English (see 4.3), the syntactic differences observed may be due to different properties of the overt or non-overt question morphemes. Capturing the fact that French child Wh-in-situ and German child questions without a Wh-element both allow null subjects ultimately requires that the movement analysis discussed for Wh-in-situ be abandoned.

Before I investigate French child data with respect to the syntax of different question forms, I will discuss the analysis of Wh-in-situ. The presentation of the data will be followed by a discussion and the outline of a solution.

3 French fronted Wh and Wh-in-situ

3.1 Two approaches to adult in-situ questions

Following 2.1, a French question with a fronted Wh-pronoun (13a) has the representation (14a). For the question (13b), the Wh-word, though in situ on the surface, also needs to have wide scope in order to achieve the correct reading.

(13) a. qui as-tu vu?
 who have-you seen
 b. tu as vu qui?
 you have seen who

(14) a. $[_{CP}\ qui_i\ [_{C'}\ as_j\ [_{IP}\ tu_k\ [_{I'}\ t_j\ [_{VP}\ t_k\ [_{V'}\ vu\ t_i]]]]]]$

The standard solution (see 2.1) is to assign representation (14a) not only to (13a) but also to (13b). The difference is explained by assuming covert LF-movement for (13b), whereas in (13a) the question word has moved overtly before Spell-out. This – apart from differences in Aux-movement – outlines the movement approach to scope marking, originating from Chomsky (1976) and developed notably by Huang (1982).

Certain syntactic differences in the two question forms in adult language were explained by the assumption of different constraints for overt and covert movement. Such differences cannot be stated in the minimalist framework (Chomsky 1995) because there is only one type of movement before and after Spell-out. Moreover, even in older models of grammar, it can be shown that the two types of movement are in fact constrained in the same manner (Reinhart 1995). So the movement analysis of Wh-in-situ was always controversial.

A competing analysis goes back to Baker (1970), who suggested that every question contains an abstract Q-morpheme. This captures the intuition that an interrogative pronoun contains an abstract question morpheme and the basic existential pronoun 'someone' or 'something'. In Baker's approach, in-situ Wh-constituents are bound directly by Q, as shown in (14b), where Q is in a scope position (adjoined or as a specifier).

(14) b. $[\ Q_i\ [_{IP}\ tu\ [\ as\ [_{VP}\ vu\ qui_i]]]]$

The idea that scope assignment does not necessarily involve movement has since been elaborated by Williams (1986), Pesetsky (1987) and Reinhart (1995).[4] The last argues that a movement analysis is inappropriate for all types of in-situ questions, and suggests that the question operator binds a choice function.

Let us sketch the basic concepts of Reinhart (1995)'s analysis. Wh-NPs are analysed as indefinites. *Which lady* thus could be analysed as (15a). However, structure (15a) coupled with an in-situ analysis leads to scope problems whenever the Wh-NP is embedded under other operators such as the universal quantifier, negation or *if.* These problems can be avoided if a choice function is employed instead of the existential operator. This analysis is shown in (15b), which denotes the value of the function f applied to the set of ladies.

(15) a. $[_{Det}\ \exists\ x\ [_{N}\ lady\ (x)]]$
 b. $[_{Det}\ f\ [_{N}\ \{x|\ lady(x)\}]]$

A choice function f selects one element out of the set of entities which appears as its argument. So the choice function f in (15b) selects one element x out of the set of entities which are ladies, and the value of f is a specific lady. This treatment guarantees that it is a semantic argument which stays in situ. Moreover, an operator acting on the choice function can be arbitrarily far away from this argument, which solves the above-mentioned scope problems.

This analysis is then extended to Wh-pronouns such that the N-restriction is more general, just giving the selectional restrictions. Roughly speaking, one can analyse *who*, *what* and *where* and their French equivalents as (16a,b,c).[5]

(16) a. who qui $[_{Det}$ f $[_{N}$ {x| person(x)}]
b. what quoi $[_{Det}$ f $[_{N}$ {x| thing(x)}]
c. where où $[_{Det}$ f $[_{N}$ {x| place(x)}]

Using the choice function analysis of indefinites, a Baker-type in-situ analysis and the notations 'Q f' for the locution 'for which f' and 'f(person)' for (16a), gives (17a,b) as the LF and interpretation of (13b). For the interpretation (17b), 'Q' is replaced by the existential operator.

(17) a. [Q f [tu [as [vu f(person)]]]]
b. {P| ∃ f (P= you have seen f(person) & true(P))}

Two alternative approaches have emerged. For fronted Wh, scope marking takes place overtly by the Wh-operator. For Wh-in-situ there are two possibilities: covert Wh-movement or binding by a base-inserted operator.

3.2 The data from Child French

3.2.1 The method and the subjects

In the light of the theoretical discussion and the questions raised in section 2.3, I investigate data from Child French which provides the test case for the use of both fronted-Wh and Wh-in-situ questions. I investigate the spontaneous production of three monolingual French children, Philippe (2.1.19–2.7.18) from Leveillé (Childes, MacWhinney 1991) analysed by Crisma (1992), Augustin (2.0.1–2.9.30) from (Hamann *et al.* 1996), and Marie (1.8.26–2.3.3), who, like Augustin, was recorded in the Interfaculty Project in Geneva and whose data have recently become available. See Rasetti (this volume) for details on Marie, and the Childes Corpus for details on Philippe. Augustin was studied longitudinally over a period of 10 months. He was recorded 10 times at his home in 45-minute sessions in the intervals shown in Table 7.7 in the appendix. For this analysis, the transcriptions of the first 30 minutes of each recording were used. Direct repetitions were not included; neither were question types without a verbal element. Utterances such as (18a,b), which, following Friedemann (1992), I analyse as having a postverbal lexical subject, were not counted as null-subject utterances, but as utterances with an overt subject. The same criteria were applied to the count on Marie.[6]

(18) a. mas su quoi Cedric (Augustin, 2.6.16)
marche sur quoi Cedric
walks on what Cedric
'on what does Cedric walk'
b. Est où maman (Augustin, 2.6.16)
is where mummy
'where is mummy'

TABLE 7.1 Development of Wh-questions for Philippe, Augustin and Marie

			% RIs	% NS	Fronted Wh	Wh-in-situ
Philippe	T1	2.1.19–2.2.17	21.8	38.6	35	0
	T2	2.2.26–2.3.21	8.6	33.2	78	1
	T3	2.6.13–2.7.18	1.6	9.8	118	81
Augustin	T1	2.0.2–2.4.22	17.5	49.1	1	27
	T2	2.6.16–2.9.30	6.1	26.6	7	59
Marie	T1	1.8.26–2.3.3	17.9	40.2	3	27

3.2.2 Individual variation

Table 7.1 compares the development of question formation for Philippe, Augustin and Marie in relation to these children's overall use of RIs and their overall null subject use (finite and non-finite declaratives, Yes–No questions and Wh-questions). For Philippe the percentages of overall null subjects and of RIs are calculated from Crisma (1992)'s data, but see Rasetti (this volume) for slightly different numbers. The percentages of Augustin's overall null subject use and RI-use are fully compatible with Rasetti (1996 and this volume). The recordings analysed for Marie span five months of early speech and do not show a notable development in the use of null subjects or RIs. Therefore I have summed up this period as Marie's T1. The percentages given for Marie's use of null subjects and RIs are based on counts made available to me by L. Rasetti. For more detailed analyses, see Tables 7.6, 7.7 and 7.8 in the appendix.

First, Table 7.1 shows that there is variation in the development of Wh-questions. Philippe has fronted Wh before he has Wh-in-situ. In this period his use of RIs is as high as 36.8% and his overall use of null

TABLE 7.2 Finite and non-finite questions, Philippe, Augustin and Marie

	Phililppe		Augustin		Marie	
	Fronted Wh	*Wh-in-situ*	*Fronted Wh*	*Wh-in-situ*	*Fronted Wh*	*Wh-in-situ*
FIN	231	82	8	86	3	27
INF	0	0	0	0	0	0

subjects is 38.6% (Crisma 1992) or even 43.5% (Rasetti 1996). He acquires Wh-in-situ in T3 at the age of 2.6 when his use of root infinitives has dropped to 1.6% and his overall null subject use has dropped to 9.8% (Crisma 1992). In contrast, Augustin has Wh-in-situ before he has fronted Wh, at a time when he still uses about 17% root infinitives and has about 50% overall null subjects. In T2 he uses some rare fronted Wh. Marie's data corroborate the findings for Augustin. She has Wh-in-situ first (14 Wh-in-situ in the time from 1.8.26 to 2.1.7) and then acquires the routine inversion *qu'est-ce que c'est* (2 times at age 2.1.28). At the same time, she uses the first fronted Wh-question without inversion as sometimes admitted in Colloquial French, see (19). In the observed period, she has about 17% RIs and 40% overall null subjects.

(19) où il est canard? (Marie, 2.1.28)
where he is duck

The existence of these markedly different acquisition routes is a strong indication for the involvement of two different processes. Note that the asymmetry in question production is most marked at a time when Philippe, Augustin and Marie are undoubtedly in the root infinitive phase. If the use of child Wh-in-situ, parallel to the use of RIs, were crucially dependent on the truncation option, one would expect Philippe to make use of this option in his question production as well as in his production of declaratives. Therefore, this marked asymmetry in the 'RI-phase' argues for a more sophisticated analysis of child Wh-in-situ than assuming a simple truncation of CP.

3.2.3 Root infinitives in Wh-questions

Next, I investigate the occurrence of root infinitives in Wh-questions. Under the Truncation Hypothesis, RIs in fronted Wh-questions are not expected. Their occurrence in Wh-in-situ, however, would be an indication that projections can be truncated in this structure. No such evidence is found, however.

Table 7.2 shows that RIs occur in neither question type. So the expectations are borne out for fronted Wh. Moreover, the absence of

root infinitives in Wh-in-situ indicates that this question type projects high enough to be interpretable, certainly as far as tense and possibly higher.

It has been suggested (Phillips 1995) that this clear result may be an artifact of the data, especially in the case of Philippe. Philippe's Wh-questions contain almost exclusively auxiliaries, and so root infinitives seem to be a priori excluded. Child data show cross-linguistically that auxiliaries do not occur in the infinitive, see Sano and Hyams (1994). The numbers presented in Phillips (1995) corroborate this. Of 166 auxiliaries used by Philippe in declaratives (T1+T2), all are finite and none is in the infinitive. This is predicted by the fact that auxiliaries involve tense, whereas root infinitives do not activate this projection.

The question therefore is how many main verbs occur in Philippe's Wh-questions. Using the criteria (20) for exclusion of an utterance, Phillips (1995) finds 444 finite main verbs compared with 182 main-verb RIs in Philippe's declaratives in T1 and T2, but only one main-verb Wh-question (which is finite) in the same period.

(20) a. multiple repetition of the same utterance
b. repetitions of all or a large part of the preceding adult utterance
c. common routines such as *c'est* and *il y a*

These criteria are too strict because they obscure some important developmental steps in Philippe's acquisition of the target forms *qu'est ce que c'est* and *est-ce que* . . . as shown in Hamann (1997). Moreover, they cut out a very revealing main-verb example. Philippe has 10 main-verb questions in his first 10 recordings, i.e. in the period where he uses RIs. Eight of these are verbatim repetitions of adult questions and so have to be excluded by any standard. The remaining two relevant questions are given in (21) and (22).[7]

(21) Mad: qu'est-ce que tu fais?
what are you doing?
Phil: je coupe le bois
I cut the wood
Mad: tu coupe le bois
you cut the wood
Mad: et alors qu'est-ce qui se passe?
and what is happening then
Fat: c'est vraiment un gros foutoir
it's really a pigsty
Phil: pourquoi coupe le bois
why cut (fin) the wood

(Philippe, 2.2.17)

(22) Phil: va monter au pied
go go-up on foot
Phil: enlever son pneu
take off its wheel
Phil: enlever son pneu
take off its wheel
Mad: pourquoi?
why
Phil: oh. a plus pneu la voiture
oh, has no more wheel the car
Phil: pourquoi j'enleve le pneu?
why I take off the wheel
(Philippe, 2.3.17)

Example (21) passes the criteria of (20) and is probably the one main-verb Wh-question mentioned by Phillips (1995). Example (22) is excluded, however, by criterion (20b). This is not a correct decision, I believe. In an investigation of question formation, the creative act of transforming an adult or child foregoing declarative into a question should be one of the most interesting sources for our observations. Consider (22) in this light: The child has taken up the question word from the adult as an important cue. But then he changes his own declarative infinitive into a finite utterance to form the question. This is extremely important because in the absence of any significant statistics it indicates that infinitives are not allowed in questions in the child grammar. Excluding such examples from the count just misses the point.

For Augustin, the picture is clearer. Twenty-three of his 94 Wh-questions have a main verb, 20 of these meet the strict criteria of (20), and none of these occurs in the infinitive. The data from Marie support this. Of her 30 identifiable, non-repetitive Wh-questions, 6 contain a main verb (*faire, aller, avoir*) and 4 of these occur at 2.1.28 where she has about 20% root infinitives, one of these 4 is a fronted Wh-question. None of her questions contains a root infinitive.

Moreover, it emerges from other children's data that so far not one infinitive has been documented in French Wh-questions (cf. Levow 1995). The main-verb data from Augustin and Marie, though not absolutely conclusive because of few examples in the case of Marie and because of Augustin's overall low use of infinitives, still support Crisma (1992)'s result.

We can thus state that RIs are not found in French Wh-questions. This holds for fronted-Wh, as predicted by the Truncation Hypothesis and first corroborated by Crisma (1992). But it also holds for Wh-in-situ. This shows that the child is aware of the requirements of interpretation of questions and so cannot produce *manger quoi* along with

manger pomme. It shows that the interpretation of in-situ questions involves at least tense and probably part of the CP-layer, as argued later. This is not surprising in view of the fact that the question operator modifies a proposition and an untensed clause with the event not properly placed on the time line does not provide a proposition.

3.2.4 Null subjects and French Wh-questions

As to the occurrence of null subjects, Table 7.3 gives an overview for all three children. The data from Augustin and Marie show that Wh-in-situ allows null subjects. For Philippe not much can be said because by the time he uses Wh-in-situ (T3), he has passed out of the root infinitive phase and uses null subjects only infrequently (13%). Moreover, his use of Wh-in-situ seems to be rather limited in productivity. There are 40.7% Wh-in-situ in T3, about 90% of these are of the form *c'est quoi* which has routine characteristics. During T1 and T2, (23) is the typical question for Philippe, whereas it is (24a) for Augustin through the whole period of observation. For Augustin, however, in-situ questions with clitic subjects like (24b,c) occur side by side with the more frequent (24a). Lexical fronted subjects in Wh-in-situ questions occur three times for Augustin, see (25a,b,c). The other overt lexical subjects are postverbal subjects of the kind quoted in (18a,b).

(23) où il est? (Philippe, 2.1.19)
where he is

(24) a. est où? (Augustin, 2.6.16)
is where
b. c'est où? (Augustin, 2.6.16)
it is where
c. elle est où? (Augustin, 2.9.30)
she is where

(25) a. Madam Veco habite où (Augustin, 2.4.1)
madam Veco lives where
b. tous les moutons là-bas est où (Augustin, 2.6.16)
all the sheep down there are where
c. le mouton i(l) fait comment:bee (Augustin, 2.6.16)
the sheep he makes how:beh
'what does the sheep do: beh'

Table 7.3 shows that in 242 fronted Wh-questions, there are only four cases of (finite) null subjects, which amounts to 1.6%, whereas the overall use of finite null subjects averages about 25% (see Tables 7.6 and 7.7 in the appendix and Rasetti (this volume) for more details). I propose that French fronted Wh-questions do not allow null subjects.

TABLE 7.3 Null subject use in fronted Wh and Wh-in-situ, Philippe, Augustin and Marie

	Philippe		*Augustin*		*Marie*	
	Fronted Wh	*Wh-in-situ*	*Fronted Wh*	*Wh-in-situ*	*Fronted Wh*	*Wh-in-situ*
0-subject	1	1	3	23	0	2
Overt subject	230	81	5	63	3	25

The 1.6% of null subjects could well be just the natural percentage of errors. However, the striking fact is that all four cases involve *pourquoi*, 1 case is found in Philippe's corpus and 3 cases in Augustin's recordings, whereas Marie does not yet use *pourquoi*. A natural explanation of this fact is found in the special status of *pourquoi*, as discussed in Rizzi (1990). There it is maintained that *pourquoi* does not undergo movement but is base-generated in the Comp system. The reasons for this assumption are that *pourquoi* does not occur in French in-situ questions and does not license stylistic inversion, see (26b,c). So it is clear that *pourqoui* does not have the same properties as a true Wh-operator; see section 3.3.

(26) a. Pourquoi tu verse de l'eau?
why you pour of the water
b. *Tu verse de l'eau pourquoi?
you pour of the water why
c. *Pourquoi part Jean?
why leaves John

The data from Levow (1995) confirm the finding that null subjects do not occur in French fronted Wh-questions, as can be seen in Table 7.4. The three children produce 39 Wh-questions in total and only two of these occur with a null subject (5%), whereas the occurrence of null subjects in declaratives is as high as 55%. The two null subject questions involve *où* and *quoi*, but are produced by the same child.

Summing up these findings on null subjects in child Wh-questions, I propose that fronted Wh does not allow null subjects, whereas Wh-in-situ admits null subjects (22% total in the corpora of the two children, Marie and Augustin, who use Wh-in-situ in their null subject phase). So there is a syntactic difference which needs explaining.

Note that null subjects also occur in French Yes–No questions, as shown by Crisma (1992) and corroborated by Lewov (1995), see Table 7.4 also Table 7.6 in the appendix. They also occur in the Wh-less forerunners of German questions as reported by Penner (1994) and

TABLE 7.4 The occurrence of null subjects in Wh-questions, Yes–No questions and declaratives (adapted from Levow 1995:293)

Child	*Type*	*NS*	*Total*	*% NS*
Gregoire	declarative	156	396	39.4
	Wh-qu	2	14	14.2
	Yes–No qu	16	30	53.3
Daniel	declarative	457	664	68.8
	Wh-qu	0	23	0
	Yes–No qu	0	1	0
Nathalie	declarative	166	352	47.2
	Wh-qu	0	2	0
	Yes–No qu	2	3	66.6
Total	declarative	779	1412	55.2
	Wh-qu	2	39	5.1
	Yes–No qu	18	34	52.9

TABLE 7.5 Occurrence of null subjects in specific question types

French			*German*		
Fronted Wh	*Wh-in-situ*	*Yes–No*	*Fronted Wh*	*No Wh*	*Yes–No*
–	+ 22%	+ 32%	–	+ 18%	+ 20%

Clahsen *et al.* (1995). Table 7.5 gives a summary of null subject occurrence in specific question types in French and German, putting together our findings with those of Crisma (1992), Levow (1995), Clahsen *et al.* (1995) and Hamann (1994, 1996a).[8]

3.3 Discussion

Since none of the questions is non-finite, an analysis of null subjects depending on underspecified tense can be excluded under standard assumptions about French inflection.[9] Note that the majority of questions for all three children are copula/auxiliary constructions, so that tense cannot be underspecified in the null subject cases. This is interesting, since 'Null Subject AUX' structures have not been observed in English and are rare in other languages (cf. Sano and Hyams 1994, Schütze and Wexler 1996, Hamann and Plunkett, 1998). In French child language, they occur to about 26%; see Rasetti (1995) and Hamann and Plunkett (1998).

Let us therefore test the hypothesis that the child null subject in French is licensed by agreement, whereas in English it is licensed by missing or underspecified tense. This implies that omitting the subject should be possible in (23). Because such clitic–auxiliary configurations are quite frequent for Philippe, null subjects in his questions are expected. These do not occur, however. It is thus extremely unlikely that the null subject in the in-situ case is licensed by agreement. Agreement does not license a null clitic in constructions such as (23) and both constructions have exactly the same local licensing and identification configuration.

However, if uninverted French child questions were clefts, a hypothesis which has been used to assign analysis (27b) to the English example (27a),[10] then Philippe's (23) is in fact (23a) and the non-occurrence of null subjects in this type of question would follow because null subjects are not found in subordinate clauses in child language.

(27) a. Where dis goes? (Adam, 2.8)
b. Where (is it that) this goes

(23) a. Où (est-ce qu') il est? (Philippe, 2.1.19)
where (is it that) he is

The last claim is true for English, but not for Italian, and just begs the question: if it is agreement which licenses the French child null subject then such null subjects are expected in subordinate clauses. It still remains to be explained why null subjects do not occur in subordinates in English. It is also not quite clear whether the French *est-ce que* can be analysed as a cleft at all. First, the French cleft which comes to mind for (23) is (23b) not (23a).

(23) b. Où c'est qu' il est?
where it is that he is

Second, in a Yes–No question *est-ce que* cannot be analysed as a cleft because it cannot be focalized (Rizzi, p.c.). Moreover, non-inverted adult questions have been analysed as involving dynamic agreement in French (Rizzi 1991), so that it is more likely that the French child uses this option instead of resorting to a cleft. I will come back to this question later. Once it is clear that a cleft analysis for French uninverted child questions is unlikely, the non-occurrence of null subjects in this question type argues against licensing of null subjects by agreement in Child French.

Licensing of null subjects by missing tense and licensing by agreement have thus been excluded. Hence, it seems to be the privileged initial position which makes omission possible in (24a), but not in (23). Therefore, an analysis which goes together with the possibility of truncation seems best.

This brings us back to the original problem. As mentioned in 2.3, Crisma (1992) argues that null subjects are expected in Wh-in-situ because the CP-level is not activated. Therefore, it can be truncated and the empty category is in topmost position and can survive. But if truncation were possible in this case, then the child could decide to truncate even lower than IP-level so that we expect infinitives such as *aller où* ('go where'), which are so far unattested.

The other problem for Crisma's idea was the assumption that the child is uttering meaningful sentences. This means that the derivation must converge at an LF-representation. If the derivation involves silent movement of the Wh-constituent, then CP must be activated at LF for Wh-in-situ, and a difference with fronted Wh is not expected. Augustin's and Marie's use of Wh-in-situ shows that there is no Spell-out/LF clash, and the 'delay of Wh-in-situ' does not exist. So there is a genuine problem for the truncation analysis. The CP must be projected at LF in both cases, and there is evidence at Spell-out (missing RIs) that the child indeed projects higher than tense in both cases. We are faced with the dilemma that null subjects are possible in one case, but not the other.

One possible solution is the following: if Wh-in-situ does not involve a silent Wh-operator, but another kind of operator, then the difference can be explained by the difference of the operators, especially their specific features. In a split CP analysis, as suggested by Rizzi (1997), the empty category could raise higher than the binder, thus exempting the ECP. Such a mechanism could by-pass an operator of the existential type in the manner suggested by Haegeman (1997a and this volume), but could never by-pass a Wh-operator.

The fact that Wh-in-situ and *pourquoi* both allow null subjects is another argument for a non-movement analysis. As *pourquoi* is base-inserted and has not moved, it is natural to assume the same for the scope assigning operator in Wh-in-situ. From Table 7.5 another asymmetry emerges. Null-subjects do not occur in fronted Wh-questions but occur quite freely in Yes–No questions (to about 32%, which is roughly comparable with the percentage of null subjects in Wh-in-situ). A similar observation holds for German. Hamann (1994, 1996a) found 20% null subjects in Yes–No questions of German 3-year-olds, Clahsen *et al.* (1995) found 18% null subjects in Wh-less questions in Early German. In the current line of argumentation, I suggest that the operator marking scope and question force in Yes–No questions is different in feature content from the genuine Wh-operator and can be assimilated to the Wh-in-situ operator. Moreover, the operator marking question force in the absence of the Wh-pronoun in German child questions seems to be not just a silent Wh-operator, but must share properties of the Yes–No operator, and, by inference, of the Wh-in-situ operator.

4 Towards a solution

4.1 The by-passing mechanism

Assuming different operators as the source of the observed difference is only a first step. Haegeman (1997a and this volume) proposes a by-passing mechanism for both (28a) and (28b).

(28) a. avant nc veux chocolat (Nathalie, 2.2)
before want chocolate
b. puis nc se colle à moi (adult diary)
then herself presses to me

Her analysis of the child null subject is the same as for the diary null subject. Following Rizzi (1994), she proposes that both are null constants (nc). The crucial ingredient for the licensing of this null constant is either the existence of an anaphoric operator which can be identified by context or its location in the topmost sentence position. An empty category escapes the ECP only if there is no position from which it can be licensed. As soon as there is a c-commanding position which is not occupied by a licensing operator but by something else, the ECP is violated, and the empty category cannot survive.

Therefore, the examples (28a,b) should be ruled out by the ECP. This holds for an analysis in which the adjunct occupies the specifier position of a dominating projection as well as for an analysis in which the adjunct is adjoined to IP. In both cases the nc is c-commanded by the higher position. There are reasons to assume that preposed adjuncts are specifiers of dominating projections, however. This assumption, a split CP, and the possibility of generating agreement projections above projections with contentful functional heads all put together provide an analysis.

4.2 A split CP analysis

The very task of the complementizer system as the interface between the propositional content (expressed by the IP) and the superordinate structure (a higher clause or the discourse) makes it necessary that it codes information oriented at the higher structure and also information oriented downwards, towards the IP. This results in a split into a ForceP and a FinP, the first coding the specification of illocutionary force, i.e. the declarative, interrogative, exclamative, relative or adverbial nature of the clause, the latter the specification of finiteness, related to tense. Additionally, the C-system codes functions which have traditionally been called topic–comment relations. These must be sandwiched between the Force and the Finiteness projection. This, together with the cross-linguistic facts about the order of topic and focus (cf. Rizzi 1997), leads to an articulated CP structure as in (29).

(29) ForceP > TopicP > FocusP > TopicP > FiniteP > IP

4.3 Topic projections

The fact that topics can be stacked, while focus is unique, seems to suggest an adjunction analysis for topics. Following Culicover (1991), Rizzi (1997) argues for independent projections. The observation is that sentences such as (30a), which are excluded because of the *that*-trace effect, become more acceptable if an adjunct is added, as in (30b):

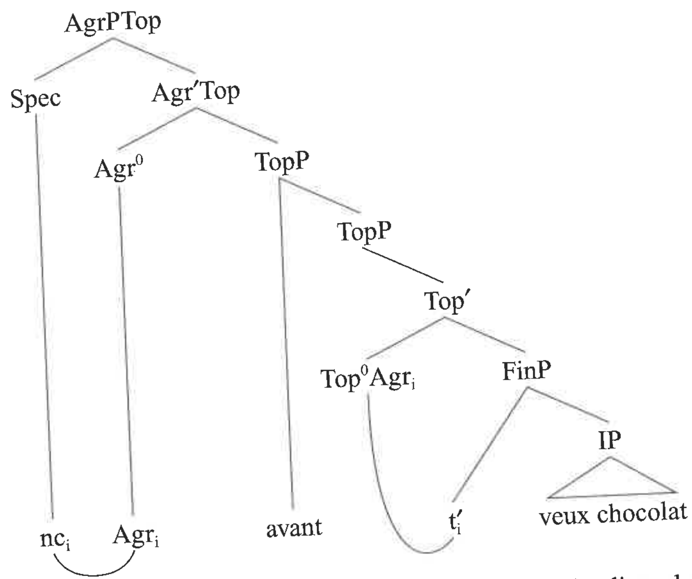
(30) a. *This is an amendment which I think that will be law next year.
b. (?) This is an amendment which I think that next year will be law.
c. This is an amendment which I think will be law next year.

The difference of (30a) and (30c) leads to the assumption that in English the two variants of the complementizer *that*, i.e. *that* and *null*, differ as to their feature specification. The null variant carries agreement features and can head-govern the trace. Therefore the amelioration in (30b) is explained by the involvement of agreement. The adjunct is not merely adjoined, but occupies the specifier of a topic phrase whose head hosts agreement features and so head-governs the trace. This presupposes that the adjunct does not enter into a spec–head relation with its head so that the agreement features remain available for other constituents. Haegeman (1997a and this volume) argues that every contentful functional head activates its own dominating agreement projection. Rizzi (1997) and Haegeman (1997a and this volume) exclude IP-adjunction for preposed adjuncts and postulate independent topic projections. To explain argument/non-argument asymmetries concerning subject extraction, a modification is necessary, however. Preposed adverbs are adjoined to the TopP, whereas arguments occupy the specifier position. Subjects cannot be extracted in the argument case because the agreement features are exhausted by the spec–head relation. The adjoined adverb leaves the agreement features unchecked and the subject can use the position in SpecAgrTopP as a landing site.

4.4 Child and diary null subjects

With these tools, I return to the analysis of (28a,b). Haegeman (1997a and this volume) assumes that the Force projection is truncated in both cases and makes use of the position in the agreement phrase dominating the topic phrase. The nc can move there, escaping the c-commanding adverb, using the agreement features of the topic head because these are not yet checked. As the topmost layer is missing, the nc is now in a licit position. The structure for (28a) then is (31).

(31)



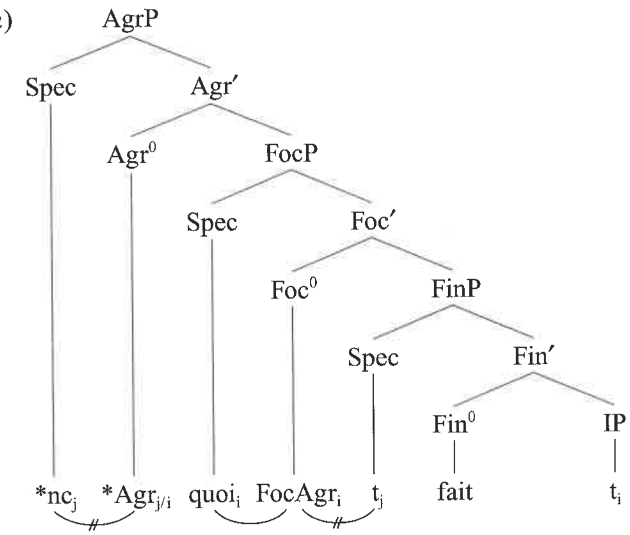
Preposed arguments with null subjects are very rare in the diary data and also in child speech. So one can assume that the same mechanism which excludes subject extraction across an argument also excludes the extraction of an nc: the agreement features are exhausted.

4.5 Null subjects and Wh

We now address the problem that null subjects occur freely in Wh-in-situ but not in fronted Wh-questions in Child French. Put differently: the nc can survive in Wh-in-situ but cannot survive in questions with a preposed Wh-constituent. Rizzi (1997) assumes that the question constituent occupies the specifier of the focus projection. This is motivated because the question word is also focal and because questions and focus are mutually exclusive. It follows that in a fronted Wh-question, the Wh-Criterion is satisfied in the FocP, which means that the Wh-constituent occupies the specifier of this projection and checks its Wh-features against the Wh-features present in the Foc head. This, especially if the Wh-pronoun as a pronoun contains phi-features and carries a minimal N-restriction (see (16)), which in the case of Wh-fronting is not separated from the operator part, exhausts the agreement option. So the antecedentless empty category cannot by-pass the Wh-constituent, just as it cannot by-pass a preposed object in Haegeman's account (see Haegeman 1997a: 257ff). Even if an agreement projection were projected on top of FocP, this would not provide an escape: the trace of the nc in SpecFinP would remain ungoverned by the head FocAgr, precisely because these features are already exhausted. For a full discussion I

refer to Haegeman (1997a) and Rizzi (1997). Clearly, the nc does not have an escape hatch in Wh-questions, as shown in (32).

(32)



It is crucially the Wh-Criterion (see Rizzi 1991) which ensures the matching of Wh-features in SpecFoc and Foc^0 and which exhausts the agreement features. I quote it as (33).

(33) *The Wh-Criterion*
- A: A Wh-operator must be in a spec–head configuration with an X^0 [+wh]
- B: An X^0 [+wh] must be in a spec–head configuration with a Wh-operator

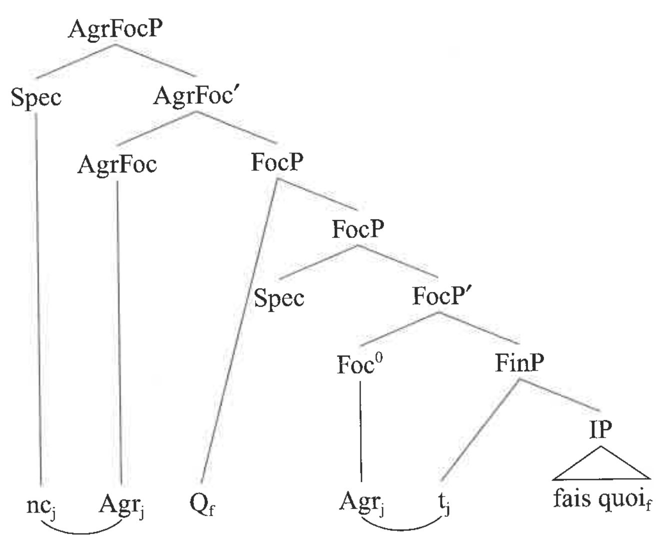
The criterion is satisfied in English and in V2-languages because the auxiliary or verb carries the agreement features, among them the Wh-feature, up to a checking position. This way of looking at the Wh-phenomenon seems to imply that the typical question of Philippe, which does not involve subject–verb inversion, ignores the criterion. For Adult French it has been argued that non-inverted questions satisfy the criterion by dynamic agreement. This makes it possible that the Wh-operator endows the relevant head with the crucial feature. Dynamic agreement is the solution suggested by Rizzi (1991) for the obvious problem that in English the verb has to raise to a C-head in order to satisfy the criterion, while Adult French can raise the verb to a C-head in inversion structures but does not necessarily have to do so. In fact, many colloquial adult questions do not involve inversion and look exactly like the questions of Philippe. The point of the argument is that this peculiarity of French makes it inevitable that the Wh-Criterion is satisfied once the Wh-operator is fronted and no inversion has taken place. Dynamic agreement will always endow the features and establish the relevant agreement configuration. Therefore, in the question configuration typically produced by Philippe and other French children (if they are inspired by adult French, not Child English), the agreement options are necessarily exhausted and no by-passing can take place.

As to the nc in Wh-in-situ questions, I assume that the by-passing mechanism allows the nc to pass the in-situ-operator. This means in particular that there cannot be a silent Wh-operator in FocP at LF because its presence would block the passage of the nc, as in (32). If an analysis as suggested in (17a) is assumed, there are more options, however.

First, as the Wh-word remains an argument in argument position (cf. Rizzi 1991), the Wh-Criterion does not apply and therefore the operator does not have to enter into a spec–head relation with the Wh-features carried by the inflected verb. This means that the operator can well be adjoined to FocP, it does not have to occupy the specifier position. Moreover, the N-restriction of the Wh-word remains in situ and the Q-operator carries no relevant agreement features and has no features to check, neither the Wh-feature nor phi- or case features. Thus (34b) is obtained for (34a), where the nc can use the agreement features projected from the substantial Foc head because they are not already checked by the Q-operator. Here, I replace the analysis for 'quoi' in (16b) by the syntactically more suggestive 'quoi$_f$'.

(34a) fais quoi? (Marie, 2.3.3)
does what

(34b)



Even if the operator is not adjoined but appears in the specifier of FocP, the phi-features would still be available for the nc because the N-restriction part of the Wh-word has remained in situ.

A similar mechanism could also explain the existence of null subjects in Yes–No questions – if it is assumed that the Wh-Criterion does not have to be satisfied there. Many languages mark this question type by inversion, which would suggest that the Wh-Criterion is operative, and so a problem ensues for the above explanation. On the other hand, Yes–No questions can often be expressed exactly like declaratives. So the Wh-Criterion is not necessarily involved. The alternative which comes to mind is binding by an unmarked Q-operator without N-restrictions. Then the mechanism will be exactly as suggested for Wh-in-situ, without the involvement of a choice function, of course. For *pourqoui*-questions the occurrence of null subjects would also follow from the fact that the operator is base-inserted and does not carry any N-restriction. Similarly, German (or Dutch) early Wh-less questions could involve a simple Q-operator. The analysis given in (34b) explains the occurrence of null subjects as well as the data presentend by Clahsen *et al.* (1995) with respect to verb placement and infinitives: infinitives do not occur in either question type (fronted Wh or Wh-less) and Verb Second is obeyed in both. The occurrence of finite verbs in clause-final position as observed by Penner (1994) or Tracy (1994) remains somewhat mysterious though and has to be investigated separately.

5 Conclusion

Detailed data on child question formation in French, and some less detailed data from German and Dutch were discussed. In German and Dutch, children often start with Wh-less constituent questions and this question type co-exists for a time with fronted Wh-questions. Developmental data on Child French were presented which correct the picture that French children start with fronted Wh. There is variation and some children start with Wh-in-situ and others with fronted Wh. The occurrence of null subjects in German Wh-less questions and in French Wh-in-situ led to an analysis involving question operators different from the Wh-operator. In this respect, I have presented acquisition evidence against a simple movement analysis of Wh-in-situ and in support of an alternative analysis going back to Baker (1970) and developed especially in Reinhart (1995).

Let me sum up what was used for allowing null subjects in Wh-in-situ but prohibiting them in fronted Wh. There are three essential assumptions. First, preposed topics and focus constituents are not simply IP-adjoined but create full projections with substantial heads. Second, substantial functional heads carry agreement and project a dominating agreement phrase. Third, adverbial topics and the Q-morpheme without the accompanying N-restriction do not exhaust the agreement features in the respective head so that the features are free to be checked in the AgrFP. This led to the idea that these constituents are not necessarily positioned in the specifier of the projection, but can be adjoined. This scenario made it possible for the nc to raise to the specifier of the AgrP concerned and thus avoid an ECP violation. This option is not open in the case of fronted Wh because there agreement is exhausted by the spec–head relation of Wh-head and operator. Last, ForceP must be truncated so that there is no higher position from which the nc could be c-commanded. As it is only the ForceP which is truncated, the utterance will be finite and root infinitives are not predicted.

Appendix

TABLE 7.6 The development of question formation concerning null subjects and root infinitives for Philippe (cf. Crisma 1992:117, 119)

		Total	*% NS*	*% RI*
T1	declarative	491	41.9	36.8
	Wh-question	35	2.8 (1)	0
	Yes–No question	28	25.0	14.3
T2	declarative	511	39.3	15.2
	Wh-question	79	0	0
	Yes–No question	29	13.8	3.4
T3	declarative	611	13.2	2.4
	Wh-question	199	0.5 (1)	0
	Yes–No question	100	7.0	0

Table 7.6 A new count of Philippe's Wh-questions which are not repetitions of a question involving the same question word, and counting only spontaneous *que c'est ça, qui, quel(le), quoi, où* without *comment, pourquoi*, considering the many occurrences of non-adult *qu'est ce* which might be attempted repetitions, gives 96 Wh-questions in T1+T2 compared with Crisma's 114. Because of the minimal difference, I do not set up my own table, but repeat Crisma's results. Null subjects here comprise all null subjects in finite and infinite structures. The analysis provided by Rasetti (1996 and this volume) differs in detail, but does not show new or different trends. For a file-by-file analysis of Philippe's overall and finite null subjects, I refer to Rasetti (this volume).

TABLE 7.7 Occurrence of Wh, root infinitives and null subjects in the Augustin corpus

Age	*% all NS*	*% finite NS*	*% RI*	*Wh total*	*% RI*	*Fronted Wh*	*NS*	*Wh-in-situ*	*NS*	*% NS*	*inversion*
2.0.2	46.0	34.1	14.0	0	0	0	0	0	0	0	0
2.0.23	57.7	31.3	34.6	0	0	0	0	0	0	0	0
2.1.15	63.2	36.4	36.8	0	0	0	0	0	0	0	0
2.2.13	36.6	28.6	12.2	3	0	1	0	2	0	0	0
2.3.10	35.3	32.1	11.8	0	0	0	0	0	0	0	0
2.4.1	54.8	49.1	11.3	12	0	0	0	12	6	50	0
2.4.22	54.4	45.8	10.5	16	0	0	0	13	8	61.5	0
2.6.16	37.7	29.7	7.5	46	0	4	3	42	9	21.4	1
2.9.2	28.6	19.8	6.1	8	0	1	0	7	0	0	1
2.9.30	16.2	10.7	6.3	12	0	2	0	10	0	0	1
Total	36.1	26.8	10.3	94	0	8	3	86	23	26.8	3

Table 7.7 This table is fully compatible with Rasetti's counts on Augustin (this volume) but may differ in detail from the numbers published in Hamann *et al.* (1996). As Rasetti's count is based on a newer machine coding, I adopt her figures.

TABLE 7.8 Occurrence of Wh, root infinitives and null subjects in the Marie corpus

Age	*% all NS*	*% finite NS*	*% RI*	*Wh total*	*% RI*	*Fronted Wh*	*NS*	*Wh-in-situ*	*NS*	*% NS*	*inversion*
1.8.26	51.4	26.3	23.6	4	0	0	0	4	0	0	0
1.9.3	32.0	10.9	24.0	8	0	0	0	8	0	0	0
1.9.10	46.6	31.7	19.0	(1)	0	0	0	(1)	0	0	0
1.10.1	27.8	16.1	11.1	0	0	0	0	0	0	0	0
1.11.5	35.4	29.3	6.2	1	0	0	0	1	0	0	0
2.0.9	45.6	34.5	13.2	0	0	0	0	0	0	0	0
2.1.7	44.2	32.5	15.4	1	0	0	0	1	0	0	0
2.1.28	32.0	17.8	16.4	11	0	3	0	8	1	12.5	2
2.3.3	51.9	33.3	23.1	5	0	0	0	5	1	20	0
Total	40.2	22.1	17.2	30	0	3	0	27	2	7.4	2

Table 7.8 See Rasetti (this volume) for an analysis of Marie's null subjects and RIs which takes into account 4 newly transcribed recordings. These were not available to me during the analysis of the Wh-data.

Acknowledgements

My thanks are due to my colleagues in Geneva, especially Liliane Haegeman and Lucienne Rasetti, to Ken Drozd, who pointed out some semantic and stylistic inadequacies, to Nina Hyams, who commented on an earlier version of this chapter given at WCHTSALT OTS 1996, to the participants in the discussion at that conference, and, of course, to the two editors whose comments helped shape the chapter.

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Notes

1 See Pollock (1989) for arguments for a tense phrase and an agreement phrase inside IP, and section 4.3 for one elaboration of the various hypotheses made about the composition of the CP.

2 Whereas in German and French child language no null subjects have been found in fronted Wh-questions (see Crisma 1992, Levow 1995 and this chapter for French, and Weissenborn 1990, Clahsen *et al.* 1995 for German), there is considerable controversy about Child English. Valian (1991) and Rizzi (1994) find practically no relevant examples, Radford (1996), quoting examples from Plunkett (1992), Vainikka (1994) and Hill (1983), is of a different opinion. Rohrbacher and Roeper (1994) and Bromberg and Wexler (1995) provide interesting statistics about the occurrence of null subjects in Adam's fronted Wh-questions.

3 Yes–No questions without inversion normally are restricted by special discourse conditions (cf. topic–focus relations).

4 Pesetsky (1987) originally suggested unselective binding as introduced by Heim (1982) as the mechanism which could correctly capture the properties of discourse-linked *which*-phrases. These, Pesetsky argued, cannot be analysed by movement in contrast to non discourse-linked Wh, which has to be so analysed.

5 This is an extension of Reinhart's analysis, valid, I believe, for the adverbial Wh-words *where* and *when* which I treat as spatial or temporal arguments because they are syntactically and semantically different from *how* and *why*. I also extend her analysis of English Wh-in-situ which occurs in multiple questions to the French case, where only one wh-word is present.

6 For a more detailed discussion and full question lists, see Hamann (1997).

7 The form *que il fait* which is quoted by Crisma (1992) as produced by Philippe at ages 2.2.3 and 2.3.21 could not be found by a UNIX 'egrep' search.

8 The percentage of null subjects in French Yes–No questions is calculated from Levow (1995) and from Crisma (1992)'s (T1 + T2); see Table 7.4 and Table 7.6 in the appendix. Unfortunately, no figures on RIs and overall null subject use could be found in Clahsen *et al.* (1995), so that a full comparison is hard to make. The children investigated by Clahsen are described as being in Stage I, however, so that about 40% RIs and null subjects can be inferred.

9 Wexler (1997) assumes that French finite verbs in the singular are specified for agreement but not for tense. Missing tense allows null subjects in his analysis.

10 The same approach to the acquisition of Bernese Swiss German and Standard German questions is proposed by Penner (1994), who points out that children in the initial stages do not have the 'set' interpretation discussed in 2.1., but prefer a 'singleton', a cleft reading for questions. Note, however, that a singleton reading might also result if children have a choice function in their question interpretation and analyse in-situ.

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