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AUTHOR	Schaeffer, Jeannette
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ABSTRACT

This paper reports the results of an experiment with 21 Italian children (age 2;8-5;11) and 29 U.S. children (age 2;7-5;9) who were tested on their knowledge of verb raising to C in main WH-questions, an obligatory movement process in adult Italian and English. Along the lines of recent movement and feature checking theories, it is proposed that, in addition to morphological features, verbs have a modal feature, which has to be checked in C. One such modal feature is [+WH]. In adult Italian and English main WH-questions, [+WH] on V is checked in C overtly, and thus V raises to C in the syntax. The result of a picture ID task show that, in contrast to adults, Italian and English speaking children allow main WH-clauses without verb raising until the age of about 3;9. Evidence shows that initially, Italian and English speaking children's verb Tense is underspecified. This fact implies that the verb is not forced to move to T, and the Head Movement Constraint prevents the verb from moving to C. Thus, [+WH] on the verb can only be checked at LF in early child language. The transition into adult language occurs when the Tense feature on the verb is fully developed and thus needs to be checked in T. From there, the verb is allowed to move to C, and in fact, must move to C, in order to check [+WH] overtly. (Contains 59 references.) (Author/CK)

ON THE LACK OF V-TO-C IN CHILD ITALIAN AND ENGLISH WH-QUESTIONS

Jeannette Schaeffer

Abstract

This paper reports the results of an experiment with 21 Italian children (age 2;8 - 5;11) and 29 American children (age 2;7 - 5;9) who were tested on their knowledge of verb raising to C in main WH-questions, an obligatory movement process in *adult* Italian and English.

Along the lines of recent movement and feature checking theories (cf. Chomsky, 1993) I propose that, in addition to morphological features, verbs have a modal feature, too, which has to be checked in C. One such modal feature is [+WH]. In adult Italian and English main WH-questions, [+WH] on V is checked in C overtly, and thus V raises to C in the syntax.

The result of a picture ID task show that, in contrast to adults, Italian and English speaking children allow main WH-clauses without verb raising until the age of about 3;9.

I provide evidence that initially, Italian and English speaking children's Tense is underspecified. This implies that the verb is not forced to move to T, and the Head Movement Constraint (Travis, 1984) prevents the verb from moving to C. Thus, [+WH] on the verb can only be checked at LF in early child language.

The transition into adult language takes place at the moment that the Tense feature on the verb is fully developed and thus needs to be checked in T. From there the verb is allowed to move to C, and in fact, must move to C, in order to check [+WH] overtly, as is obvious from positive evidence.

1. Introduction

It is a well known fact that Italian and English main WH-questions trigger raising of a verbal element. In Italian, it is the main verb which raises, in English the auxiliary or the modal. This is due to a special instance of V2, often called "Residual V2" (cf. Rizzi, 1991): V/AUX moves to C if the WH-element appears in spec C in main WH-clauses. Sentences with WH-movement of the object illustrate this phenomenon best. Some examples are given in (1) for Italian and in (2) for English:

(1) a. $[_{CP}$ Che cosa] $[_{C}$ mangia$_i$] $[_{IP}$ Gianni t_i ?]]

what eats Gianni

b. *$[_{CP}$ Che cosa $[_{C}$] $[_{IP}$ Gianni mangia]]

what Gianni eats

(2) a. $[_{CP}$ What] $[_{C}$ can$_i$] $[_{IP}$ John t_i eat?]]

b. *$[_{CP}$ What $[_{C}$] $[_{IP}$ John can eat?]]

The sentences in (1b) and (2b) are ungrammatical, because the verbal element has not moved to C, whereas spec CP is filled by a WH-element.

In this paper we report the results of an experimental study, carried out on 22 Italian children (age 2;9 - 5;11) and 29 American children (age 2;7 - 5;9). Our results show that young Italian and English speaking children do not require V-to-C raising in main WH-clauses. The experiment involved WH-questions such as those in (3) for Italian and American children, respectively:

(3) a. Che bambini stanno suonando?
what children are playing

b. What children are playing?

The trick in this kind of question lies in the fact that *che/what bambini/children* can be considered a constituent functioning as the subject of the verb *suonando/playing*, as shown in (4):

(4) [$_{spec\ CP}$ che/what bambini/children] stanno/are suonando/playing?

or *che/what* can be interpreted as a WH-phrase functioning as the object of the verb *suonando/playing* (while *bambini/children* is functioning as the subject) as illustrated in (5):

(5) [$_{spec\ CP}$ che$_i$/what$_i$] bambini/children stanno/are suonando/playing t_i ?

However, note that only the structure in (4) is grammatical in adult Italian and English. (5) is ungrammatical because the V/AUX has failed to raise. Also, in order to assign an object interpretation as in (5), the child must ignore the (for adults ungrammatical) absence of a definite article, preceding the subject noun *bambini/children*. We will return to this issue in section 2.

Our results show that, children up to the age of about 3;9/3;10 identified both an object interpretation as in (5) and a subject interpretation as in (4) of the WH-phrase *che bambini / what children*. After the age of 3;9/3;10 the object interpretation is disallowed. Thus, the younger children do not require V/AUX raising in main WH-questions.

These results are consistent with results from other studies. For example, Klima and Bellugi (1966) report that in their Period III, "in interrogative word questions, [...] the auxiliary is generally not inverted" by the English speaking children Adam, Eve and Sarah they studied. This is exemplified in (6):

(6) a. what I did yesterday?

b. what he can ride in?

c. what you had? (from Klima & Bellugi, 1966)

At Period IV (around the age of 3;3) these children begin to produce WH-questions with verb raising.

Similarly, Davis (1987) reports that the English speaking child K he studied, does not start to raise the verb in WH-questions until the age of 3;2. Before that, the child produced

non-inverted WH-questions as illustrated in (7):

(7) a. what the mouse is doing?

b. what he's saying? (from Davis, 1987)

The 23 children studied in Ingram and Tyack (1979) exhibit a similar pattern.

Weinberg (1990) accounts for the failure to raise the verb in WH-questions by claiming that the English child has to learn that in certain cases - such as matrix WH-questions - the Doubly Filled Comp Filter which is operative in English, can be overridden. According to the Subset Principle (Berwick, 1985; Wexler and Manzini, 1987) children will make the most restrictive hypothesis concerning the grammar of their language as their first guess. Thus, they will initially obey the Doubly Filled Comp Filter, which prohibits the occurrence of an auxiliary in C as well as a WH-element in spec C. Weinberg claims that during this stage there is not even a C projection. Consequently, the WH-element cannot move to spec C and the auxiliary cannot raise to C. By the time the child has received enough positive evidence that the Doubly Filled Comp Filter can be overridden in the case of matrix WH-questions, the child will build a C-projection and movement of the WH-element and the auxiliary to spec C and C, respectively can start taking place.

Although Weinberg's analysis is not implausible, we would like to propose a different explanation for the failure to raise the V/AUX in child WH-questions, which takes the "Full Clause Hypothesis" (Hyams, 1992) or the "Full Competence Hypothesis" (Poeppel and Wexler, 1993) as its starting point. According to the Full Competence/Clause Hypothesis all

functional projections exist in the child's grammar from the beginning, although they may be underspecified (cf. Hyams, 1992).

In contrast to the above mentioned studies, Stromswold (1990) denies that there is a stage in which children fail to raise the auxiliary. She reports that in the transcripts she investigated, 93% of the children's WH-questions which contained an auxiliary had the auxiliary correctly placed. According to her, none of the children had a grammar which prohibited auxiliary raising. However, instead of dividing up the data into developmental stages, Stromswold analyzed the entire set of data for each child. Thus, her percentages are based on utterances from 14 children ranging from 1;2 (Naomi: Sachs, 1983) to 6 (Mark: McWhinney & Snow, 1985) years old. Consequently, the evidence for an early stage of non-auxiliary-raising is strongly diluted. To exemplify this, Stromswold examined the entire corpus of Adam (Brown, 1973) (age 2;3 - 5;2) and concluded that he did not have a high 'failure-to-invert' rate. Paradoxically, Bellugi's (1971) study of Adam reports that he goes through a stage in which he fails to raise auxiliaries in WH-questions 100% of the time. This stage lasts until about age 3;3 ('Period III'). After that he starts to raise the auxiliary correctly. The Adam case shows that it is important to define stages in the child's development. The years between 2 and 5 or 6 may span many developmental stages. If we collapse the data across this large span, there is a danger of glossing over interesting and important phenomena characteristic of an intermediate child grammar, such as the failure to raise auxiliaries in main WH-questions. Furthermore, we would like to remark that even if there seems to be no stage in which AUX-to-C is prohibited, it is still important to explain why AUX-to-C is not *required* for the child, as it is for the adult.

One may ask whether there is evidence in Italian spontaneous speech, as there is in English, for a non-inversion stage. Unfortunately, there are no Italian acquisition studies which look specifically at verb raising in WH-questions, as far as we know. However, it must also be said that clear spontaneous speech data bearing on this issue would be hard to come by. First, many utterances in early (and adult) Italian do not have an overt subject, which makes it impossible to decide whether the verb has raised to C or not. For example, in the following sentences, it is impossible to determine if the verb has raised or not since the subject is missing.[1]

(8)	a.	che mangi?	(Francesco, 2;5)
		what eat-2p.sg	
	b.	che hai fatto?	(Francesco, 2;5)
		what have-2p.sg done	
	c.	dove vai?	(Francesco, 2;6)
		where go-2p.sg	
	d.	come si toglie quetto?	(Francesco, 2;7)
		how -si- lift-3p.sg this	
		'how does one lift this?'	

In the above examples it is not clear whether the verb is in C or in I.

[1]Data from the following source: the CHILDES corpus at the Consiglio Nazionale della Ricerca, Rome; collected by Virginia Volterra and Paola Tieri; put into the CHAT system by Elena Pizzuto and Simona d'Amico.

Furthermore, even if the WH-question contains an overt subject to the right of the verb, this might be a post-verbal subject in a right-handed spec IP position (cf. Rizzi, 1991; Giorgi and Longobardi, 1991), and thus it still does not give us any clue as to whether the verb has raised to C or not. Some examples of main WH-questions with an overt subject in Italian child language are given in (9) (the subjects are boldfaced):

(9) a. dove stanno **le chiavi tue**? (Francesco, 2;6)
where are your keys

b. come si chiama **quello**? (Francesco, 2;6)
how -si- call-3p.sg this
'what is this one called?'

The only spontaneous speech data that give us clear evidence of the absence of V-to-C raising are utterances in which an overt subject appears between the WH-element and the verb. Admittedly, these are rare. Since the spontaneous speech of Italian children is not very revealing with respect to the obligatoriness of verb raising in main WH-questions, experimental results such as the ones done in this study are a more reliable measure of the child's competence in this domain.

The goal of this paper is to provide an explanatory answer to the following question:

(10) What is the system that accounts for the lack of verb raising and hence the possibility of both subject and object interpretations in Italian and English child language and how does this system develop into the adult system, in which object interpretations are impossible?

We will propose that the answer to this question lies in the child's development of the functional category of Tense.

The paper is organized as follows. In section 2 we describe two experiments concerning WH-movement and the position of the finite verb, the subject and the object, one involving Italian children and the other American children.

Section 3 discusses the results of the two experiments. First, we discuss the theoretical framework adopted here, including a description of the Split INFL Hypothesis and recent theories concerning verb movement and feature checking. We discuss Rizzi's (1991) analysis of Residual V2 but argue that such an analysis is not necessary and that V-to-C Raising can be reduced to checking of features in the sense of Chomsky (1992). In section 3.3 and 3.4 we discuss the relation between the mechanisms accounting for V-to-C in adult language and the WH-phenomena in Italian and English child language. We argue that the underspecification of Tense is responsible for the fact that Italian and English speaking children move the verb only as high as AGRO, and not to T or C. Since the experiments make crucial use of the absence of an article, we will further argue that the determiner system is not fully developed yet in the early grammar.In section 3.5 we discuss the transition into the adult grammar. Finally, section 4 contains a brief summary, conclusions

and suggestions for further research.

2. Experiments and results

2.1 Experiment I - Italian

In the first experiment 22 monolingual Italian children (age 2;9 - 5;11) were each presented with six pictures.[2] Every picture was accompanied by two presentational sentences and a question of type (3), here repeated as (11):[3]

(11) Che bambini stanno suonando?

what children are playing

The verbs used in the presentational sentences and the questions were all optionally intransitive in order to allow for both a subject and an object answer (abstracting away from

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[2]This experiment was carried out in February 1991 at the "Scuola Materna Comunale Duca d'Aosta - Giudecca" in Venice, Italy, by one native and one non-native Italian speaker. The group of children consisted of 12 boys and 10 girls from a middle class background. The experiment presented in this study formed part of a larger battery of experiments, all concerning WH-movement.

[3]The experimental design is based on WH-experiments with English children designed and executed by Tom Roeper and Jill Devilliers. The original purpose of this specific experiment was to test the suggestion that WH-subjects might not be moved. The prediction was that if children do not move WH-subjects, they might prefer subject questions over object questions, which presumably have to involve movement. Unlike the experiment presented here, the original English version did not utilize main WH-questions, but embedded WH-questions as stimuli, e.g.

(i) Show me what horses are jumping?

word order).

The stories and the questions asked are given in (12) through (17). The corresponding pictures are presented in the appendix in figures 1 - 6 respectively.

(12) Ci sono cinque bambini. Tre bambini stanno suonando il pianoforte.

Mostrami:

'There are five children. Three children are playing the piano. Show me:'

Che bambini stanno suonando?

'What children are playing?'[4]

(13) Ci sono quattro ragazze. Due ragazze stanno dipingendo un quadro. Mostrami:

'There are four girls. Two girls are painting a picture. Show me:'

Che ragazze stanno dipingendo?

'What girls are painting?'

[4]Notice that the WH-questions involved in this experiment are *main* WH-questions and cannot be interpreted as *embedded* WH-questions. That is, the imperative *mostrami/show me* preceding the question is followed by a clear break and the WH-question was posed with clear *main WH-question* intonation by the experimenters.

(14) Ci sono quattro elefanti. Due elefanti stanno schizzando una palla con acqua. Mostrami:

'There are four elephants. Two elephants are squirting a ball with water. Show me:'

Che elefanti stanno schizzando?

'What elephants are squirting?'

(15) Ci sono quattro scimmie. Due scimmie stanno scalando una roccia. Mostrami:

'There are four monkeys. Two monkeys are climbing a rock. Show me:'

Che scimmie stanno scalando?

'What monkeys are climbing?'

(16) Ci sono quattro cavalli. Due cavalli stanno saltando un cancello. Mostrami:

'There are four horses. Two horses are jumping over a fence. Show me:'

Che cavalli stanno saltando?

'What horses are jumping?'

(17) Ci sono quattro gatti. Due gatti stanno graffiando una poltrona. Mostrami:

'There are four cats. Two cats are scratching an armchair. Show me:'

Che gatti stanno graffiando?

'What cats are scratching?'

When the children gave object responses such as *the piano* (cf. (12)), *the picture* (cf. (13)), *the ball* (cf. (14)), *the rock* (cf. (15)), *the fence* (cf. (16)) or *the armchair* (cf. (17)), either verbally or by indicating the object with their finger, the WH-element was considered to

have been assigned an object interpretation. If, however, they pointed to the subjects, e.g. the playing children (cf. (12)), the painting girls (cf. (13)) etc., the responses were judged to be (adult-like) subject-interpretations of the WH-phrase $[_{NP}\ [_{spec\ NP}$ che$]\ [_{N}$ X$]]$.

The trick of the experiment depends on the potential ambiguity of *che bambini / what children*. To get the ambiguity, it is necessary to omit the article. This might be problematic since strictly speaking the object interpretation is ungrammatical for two reasons, not just because of the lack of V-raising. Nevertheless, we felt justified in giving the children sentences in this form because there is ample evidence that for children at the relevant stage determiners are optional. For example, Pizzuto and Caselli (1992) report that in their spontaneous speech young Italian children omit articles up to 81% of the time, depending on the article. They report that two of the three children they investigated still omit articles at a rate of 10% at age 3;0 (after this age they do not provide any data). From this we can conclude that the children's determiner system is not fully developed yet at this age. This seems to be a general phenomenon in child language. Brown (1973) reports for English that two of the three English speaking children he studied (Adam and Sarah) acquired both the definite (*the*) and the indefinite article (*a*) around the age of 3;2. He also notes that the children know the distinction between definite and indefinite reference, that is, they do not use a definite article where an indefinite article would have been appropriate, and vice versa. Although Brown does not state it as such, we believe that from this we may conclude that the errors made before the acquisition age of 3;2 must have been omission errors.

Thus, if determiners are optional then their omission in the test sentences should not bias the results. In fact, to see what effect determiners might have, we included sentences

with the determiner, as illustrated in (18 - 23):

(18) Che i bambini stanno suonando?

'What the children are playing?'

(19) Che le ragazze stanno dipingendo?

'What the girls are painting?'

(20) Che gli elefanti stanno schizzando?

'What the elephants are squirting?'

(21) Che le scimmie stanno scalando?

'What the monkeys are climbing?'

(22) Che i cavalli stanno saltando?

'What the horses are jumping?'

(23) Che i gatti stanno graffiando?

'What the cats are scratching?'

As we will see, for the Italian children this did not affect the results. Even in sentences such as *che i bambini stanno suonando?* children still allowed subject and objec. interpretations until age 3;9, suggesting that determiners may not be analyzed at all. On the other hand, the American children seemed to be more sensitive to the insertion of the article. We assume that for English speaking children determiners are optional as well, but when they are included, they force an object interpretation.

2.2 *Experiment II - English*

The same experiment was carried out with 29 mono-lingual American children (age 2;7 - 5;9).[5] In this experiment the English translations as represented in (12) - (17) and (18) - (23) were used. Just as in Italian, English speaking adults who participated in this experiment could not interpret a sentence like (3) as involving WH-movement of the object because the subject (*children*) is not preceded by an article and the auxiliary has not raised to C.

2.4 *Results*

Tables I and II below show the results of experiment I (Italian children). Tables III and IV show the results of experiment II (American children). The responses of each child to the six questions of the relevant experiment are categorized as 'subject interpretation', 'object interpretation', 'perché interpretation' (in the Italian experiment) or 'other interpretation'. An explanation of these headers is given in (24):

[5]This experiment was carried out in October 1992 at "Creative Kids" in Manhattan Beach, California. The group of American children consisted of 18 boys and 11 girls from a middle class background.

(24) CHILD : identification number of the child

SUBJECT : subject interpretation of WH-phrase

che/what + NP

OBJECT : object interpretation of WH-element *che/what*

PERCHE' : perché ('why') interpretation of question

OTHER : irrelevant answer / no answer

For example, the first line in table I indicates that Italian child number 1 is 2;9 years old and gave two subject interpretations, two object interpretations, no perché interpretations and two irrelevant answers.

Table I shows the responses to the Italian questions of type (12) - (17), e.g. *Che bambini stanno suonando?* for each individual Italian child organized by age.

Table I - responses to Italian questions w/o article

CHILD	AGE	SUBJECT	OBJECT	PERCHE'	OTHER
1	2;9	2	2	-	2
2	2;10	3	3	-	-
3	2;11	1	5	-	-
4	3;0	4	2	-	-
5	3;1	4	2	-	-
6	3;1	5	1	-	-
7	3;1	6	-	-	-
8	3;5	-	2	3	1
9	3;6	3	3	-	-
10	3;9	-	6	-	-
11	4;3	6	-	-	-
12	4;4	6	-	-	-
13	4;8	2	-	4	-
14	4;10	6	-	-	-
15	4;11	-	-	6	-
16	5;1	6	-	-	-
17	5;3	6	-	-	-
18	5;9	6	-	-	-
19	5;10	6	-	-	-
20	5;10	4	-	2	-
21	5;11	6	-	-	-
22	5;11	6	-	-	-

Table II shows the responses to the Italian questions of the type in (18) - (23) e.g., *Che i bambini stanno suonando?* for each individual Italian child organized by age.

Table II - responses to Italian questions with article

CHILD	AGE	SUBJECT	OBJECT	PERCHE'	OTHER
1	2;9	1	3	-	2
2	2;10	-	5	-	1
3	2;11	2	2	2	-
4	3;0	-	-	6	-
5	3;1	5	1	-	-
6	3;1	3	3	-	-
7	3;1	1	5	-	-
8	3;5	-	-	5	1
9	3;6	1	4	1	-
10	3;9	-	6	-	-
11	4;3	6	-	-	-
12	4;4	6	-	-	-
13	4;8	-	-	6	-
14	4;10	1	-	5	-
15	4;11	-	-	6	-
16	5;1	6	-	-	-
17	5;3	-	-	6	-
18	5;9	1	5	-	-
19	5;10	1	4	1	-
20	5;10	2	1	3	-
21	5;11	6	-	-	-
22	5;11	6	-	-	-

Table III shows the responses to the English questions of the type in (12) - (17), e.g. *What children are playing?* for each individual American child organized by age.

Table III - responses to English questions w/o article

CHILD	AGE	SUBJECT	OBJECT	OTHER
1	2;7	1	4	1
2	2;10	-	5	1
3	2;11	-	4	2
4	3;0	1	1	4
5	3;1	2	3	1
6	3;4	-	5	1
7	3;4	1	5	-
8	3;6	4	2	-
9	3;8	6	-	-
10	3;9	6	-	-
11	3;9	2	3	1
12	3;10	-	6	-
13	3;10	-	6	-
14	3;10	6	-	-
15	3;10	5	1	-
16	4;0	6	-	-
17	4;1	6	-	-
18	4;3	6	-	-
19	4;3	5	1	-
20	4;4	6	-	-
21	4;5	6	-	-
22	4;6	6	-	-
23	4;8	6	-	-
24	4;9	6	-	-
25	4;9	5	1	-
26	4;10	6	-	-
27	5;8	6	-	-
28	5;8	6	-	-
29	5;9	6	-	-

Table IV shows the answers given to the English questions of the type in (18) - (23), e.g. *What the children are playing?* for each individual American child organized by age.

Table IV - responses to English questions with article

CHILD	AGE	SUBJECT	OBJECT	OTHER
1	2;7	-	2	4
2	2;10	-	5	1
3	2;11	-	4	2
4	3;0	-	1	5
5	3;1	-	5	1
6	3;4	-	5	1
7	3;4	-	6	-
8	3;6	-	6	-
9	3;8	-	6	-
10	3;9	-	6	-
11	3;9	-	3	3
12	3;10	-	6	-
13	3;10	-	6	-
14	3;10	-	3	3
15	3;10	1	5	-
16	4;0	1	5	-
17	4;1	-	6	-
18	4;3	5	1	-
19	4;3	-	6	-
20	4;4	-	6	-
21	4;5	-	6	-
22	4;6	-	6	-
23	4;8	-	6	-
24	4;9	-	6	-
25	4;9	-	6	-
26	4;10	-	6	-
27	5;8	-	5	1
28	5;8	-	6	-
29	5;9	-	6	-

As we can see in tables I and III, the children up to age 3;9/3;10 (Italian as well as American) allow both subject and object interpretations to questions such as *Che bambini*

stanno suonando? / What children are playing? The older children mostly gave the correct subject interpretations. Table II shows that the Italian children give subject, object and perché interpretation to questions containing the article such as *Che i bambini stanno suonando?* These results are generally compatible with the results of the experiment without articles. That is, the subject interpretations support the hypothesis that children are not sensitive to the article. The object interpretations given to the questions containing articles by some older Italian children (cf. Table II: ID numbers 18, 19 and 20) can be explained by the fact that the relevant WH-phrases are also *interpretable* as objects for Italian adults, although not grammatical.

As for the *perché* interpretations, this is probably due to the phonetic similarity between *che* ('what') and *perché* ('why'). That is, it is plausible that in these cases the child simply *heard perché* instead of *che*, and thus answered with *perché* ('because'). Furthermore, there is an asymmetry between *perché* and the other WH-words in adult Italian: *perché* does not trigger V-to-C raising whereas the other ones do (cf. Rizzi, 1991; Poletto, 1992 among others):

(25) a. Perché Gianni ha parlato?
why Gianni has spoken

b. Perché ha parlato Gianni?
why has spoken Gianni

Along the lines of Kayne (1989), Benucci (1991), Poletto (1992) among others, this

phenomenon can be accounted for by assuming that the WH-item *perché* actually consists of a preposition *per* ('for') and of a complementizer *che* ('that'). This implies that V-to-C becomes impossible: C is already filled by a complementizer. This is comparable to the behaviour of *how come* in English, where *how* is supposed to be in spec CP, and *come* in C. Thus, the interpretation of the WH-questions in this experiment (with and without articles) as *perché* questions is compatible with the adult input (no V-to-C) and may therefore be an additional reason for choosing a *perché* interpretation.

Turning to the American children's results, table IV shows that the American children seem to have a strong preference for object interpretations of questions such as *What the children are playing?* regardless of their age. This is in contrast to the questions without articles, which yielded both subject and object interpretations until age 3;10. These results seem to suggest that even the children younger than 3;10 are sensitive to the insertion of an article which causes an adult-like object interpretation. If this is true, it is a problem for the experiment, since then it would not only test V-to-C raising but also the knowledge of the determiner system. However, considering that spontaneous speech studies indicate that English children omit articles frequently, and that there are at least a few (three) children who give subject interpretations, we maintain the hypothesis that the absence of the article in the WH-questions in (12) - (17) does not influence the results and leave the interpretation of the high numbers of object interpretations in table IV for future research.

Notice the significant difference in performance between the children under 3;9/3;10 (Italian/American respectively) and above 3;9/3;10 in the experiment with the questions without articles (tables I and III): before 3;9/3;10 the majority of the children give one or

more object interpretations, whereas after 3;9/3;10 hardly any object interpretations are given. In other words, children up to age 3;9/3;10 allow non-inversion in main WH-questions. It is this striking phenomenon that we will focus on in the rest of this paper.

3. Discussion

Before discussing the child data as described in the previous section, it is necessary to have an idea of the grammatical processes that account for adult WH-questions. In the following sections we will first outline an explanation proposed by Rizzi (1991). We will then argue that an analysis such as Rizzi's is unnecessary and propose to account for V-to-C raising in adult language by means of feature checking.

3.1 The WH-Criterion

As noted earlier, Italian and English speaking adults do not allow non-inversion in main WH-questions (compare (1a and b) and (2a and b)). The finite V/AUX moves to C in these cases, although both Italian and English are non-V2 languages.[6] Rizzi (1991) accounts for this particular instance of V-movement, or "Residual V2", in the following way.

The finite verb must move in order to satisfy the WH-Criterion, a general well-formedness condition on WH-structures, first proposed by May (1985), based on a proposal

[6] For the sake of a more abstract level of discussion, the fact that only auxiliaries can move in English and not main verbs, is being glossed over in the remainder of the discussion. In other words, raising of the auxiliary in English will be referred to as "verb raising", just as raising of the main verb in Italian.

by Pesetsky (1982). Rizzi's principle is formulated in (25):

(25) *The WH-Criterion* (Rizzi, 1991)

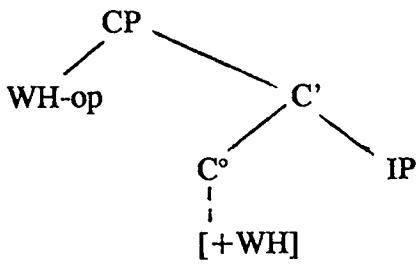
A. A WH-operator must be in a spec-head configuration with X°[+WH]

B. An X°[+WH] must be in a spec-head configuration with a WH-operator

(where X° is a clausal head)

The feature [+WH] on a clausal head (most typically a C°) indicates that the projection of that head is a question. Thus, the WH-Criterion simply expresses the fact that at the appropriate level of representation interrogative operators must be in the spec of CPs which are interpreted as questions and, conversely, CPs interpreted as questions must have interrogative operators as specifiers. This is exemplified by the configuration in (26):

(26)



The assumption that the feature [+WH] is borne by C itself in embedded interrogative clauses is quite plausible; it is determined by a standard licensing device, namely lexical selection. The matrix verb selects an indirect question, hence an embedded C

marked [+WH]. But what about main questions? Rizzi argues that there must be at least one independent point in a structure to which the chain of licensings can be anchored, and from which it starts. The main inflection of a sentence would be a natural candidate. Assuming main clause I to be the carrier of [+WH] in direct questions, "Residual V2" in sentences like (1a and 2a) follows from the WH-Criterion: the inflected verb, bearing the WH-feature, has to move to C, not to violate clause B of the WH-criterion (assuming the WH-operator to be in spec C). Thus, [+WH] originates in I in main WH-clauses, whereas C is the [+WH] carrier in subordinate WH-clauses.

However, languages vary with respect to which clausal head is the carrier of [+WH] in both main and subordinate clauses (cf. Poletto, 1992). For example, Italian subordinate WH-clauses allow inversion, which suggests that in Italian subordinate WH-clauses, [+WH] is borne by I. On the other hand, colloquial French and Trestino allow non-inversion in main WH-clauses, which suggests that [+WH] is base-generated in C in main WH-clauses, as is illustrated in (27):

(27) a. Cossa la mama dise? (from Poletto, 1992)
what the mommy says
'What does mommy say?'

b. Quand elle est venue? (from Rizzi, 1991)
when she is come
'When has she come? / When did she come?'

In the next section we will see that Rizzi's WH-Criterion and its implementation is not unproblematic. Therefore, we will slightly change his proposal and reduce the analysis of V-raising in main WH-questions to basic checking mechanisms in the sense of Chomsky (1993).

3.2 Licensing of [+WH]

Although Rizzi's formulation accounts for the basic facts concerning WH-questions, his proposal that [+WH] is borne by I in main WH-questions is not very well motivated. The idea that I is the independent point in a structure to which the chain of licensings can be anchored is guided by an intuition, rather than by an explicit argument. In addition, the fact that languages such as colloquial French and Triestino are exceptional in having [+WH] on C in main WH-questions, forces one to abandon the intuitive idea that [+WH] is always on I in main WH-questions. In order to be able to account for (non-)inversion phenomena in WH-questions, we would like to modify Rizzi's analysis slightly, maintaining the idea that [+WH] must be licensed by virtue of spec-head agreement (= WH-Criterion). The difference with Rizzi's analysis lies in the fact that we make use of independently motivated checking mechanisms in the sense of Chomsky (1993) rather than extra assumptions, such as "[+WH] is on I or on C".

If [+WH] is *selected*, it is licensed by its *selecting* head. This happens in subordinate WH-clauses, where the selecting head is the matrix verb. We may assume as a matter of execution that the [+WH] feature is a morpheme licensed by incorporation into the matrix

verb (cf. Stowell, 1991; Koopman, 1992; Sportiche, 1993). Following Chomsky's (1992) principle of *Procrastinate*, this incorporation takes place at LF: if nothing forces the [+WH] feature to incorporate in the overt syntax, it is postponed until LF.[7]

In main WH-questions, [+WH] is not selected and thus not licensed as described in the previous paragraph. Before addressing the specific question as to why finite verbs move to C in WH-questions, let us first consider what forces the overt movement of a finite verb in general.

Recent syntactic theories describe verb movement as a process driven by the satisfaction or 'checking' of morphological properties on the verb (Chomsky, 1992; Koopman, 1992 among others). These theories assume the Split INFL Hypothesis as first proposed by Pollock (1989). The basic idea of the Split INFL Hypothesis is that the functional category INFL should not be considered as one category with more than one set of features (such as +/- Tense, +/- Agr) but that instead each of these sets of features forms the syntactic head of a maximal projection, for example T(ense)P, AGR(eement)P.[8] After

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[7]*Procrastinate* (Chomsky, 1992):
LF-movement is "cheaper" than overt movement.

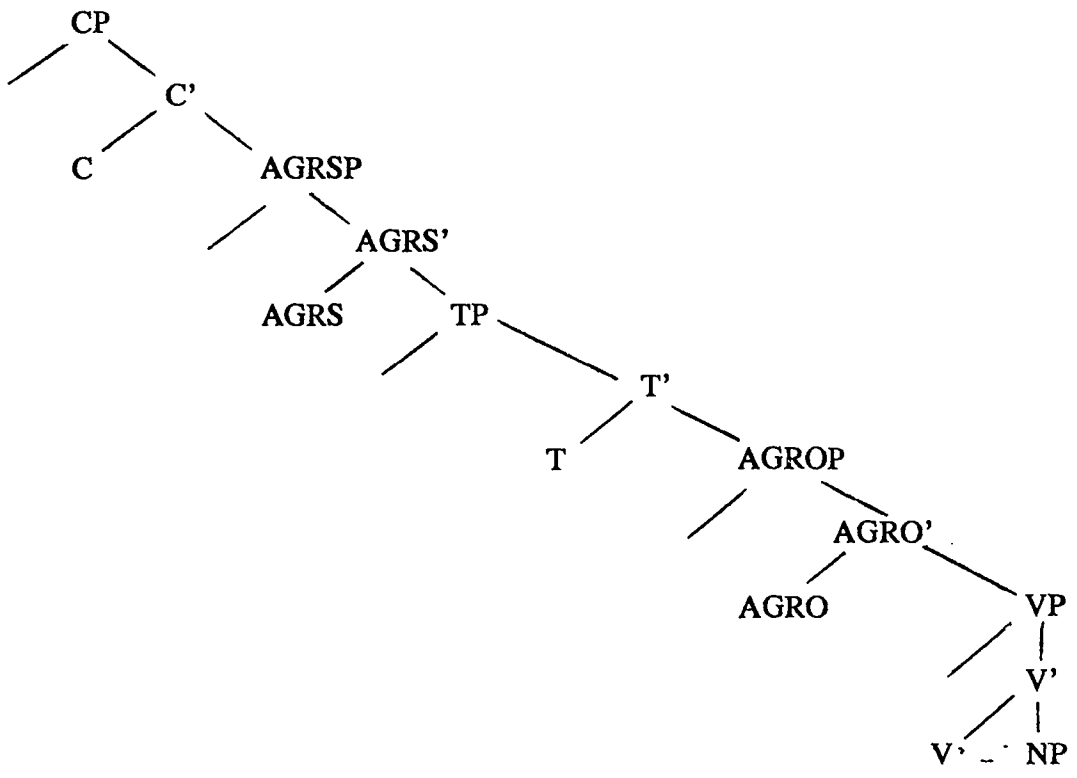
Procrastinate is a natural economy condition. The intuitive idea is that LF-operations are a kind of "wired-in" reflex, operating mechanically beyond any directly observable effects. They are less costly than overt operations. Therefore, if overt movement is not forced for reasons of convergence (at LF or PF), movement is postponed until LF.

[8]In the same spirit, Pollock (1989) suggests a maximal projection NEG(ation)P. For reasons of simplicity we do not incoporate the node NEG in our trees.

Furthermore, Chomsky (1989) proposes that there are actually two kinds of Agreement projections: one for subject and one for object agreement. this observation results in another 'I-like' functional category, namely AGRO (Pollock's AGR becomes AGRS), which we incorporate into the tree structure in (28).

Pollock, Chomsky (1991), Belletti (1990), Johnson (1993), among others, have proposed several modifications to the order and number of the various projections, but in essence the idea remained the same. We will adopt a tree structure as proposed by Belletti (1990), which is given in (28):

(28)



As we noted before, verb-movement is driven by the satisfaction or 'checking' of features on the verb, such as Agreement and Tense. This takes place by movement of the verb to the appropriate functional head, where the feature is checked. For example, the [+TENSE] feature on the verb is checked in the functional head T by head-movement of the

verb to T. Checking can take place either overtly or at LF, depending on the language. For example, in English, the [+AGR] and [+TENSE] features on the verb are checked at LF, and thus the verb stays quite low in the tree in the overt syntax. On the other hand, Italian [+AGR] and [+TENSE] must be checked overtly. Consequently, Italian verbs end up rather high in the tree in the overt syntax. The checking of features either at LF or in the overt syntax could be considered a parameterized choice. If the verbal features are not checked by LF, the derivation crashes. It follows that if the verb lacks the relevant features, checking is unnecessary and movement of the verb is not forced.

Imagine that in addition to the agreement and tense features, the verb has another feature, denoting the modal role, or the illocutionary force of a sentence. This could be a declarative feature ([+DECL]), an imperative feature ([+IMP]), an exclamative feature ([+EXCL]), a 'yes/no' feature ([+YES/NO]), a 'WH' feature ([+WH]), etc. Just as the agreement and tense features on the verb, this modal feature needs to be checked in a functional head, either overtly, or at LF. Weerman (1989) proposes that modal roles are assigned by C. Translating this into more recent terms, i.e., translating 'assignment' into 'checking', this implies that the appropriate functional head for the modal feature on the verb to be checked in is C. Thus, in WH-questions, the verb has a [+WH] feature which must be checked in C. In adult English and Italian, this takes place overtly. On the other hand, Triestino and colloquial French check their [+WH] feature at LF.

Using basic checking mechanisms as described above, Rizzi's WH-Criterion follows automatically: after V has moved to C (either in the overt syntax, or at LF), the spec-head configuration between the WH-element in spec CP and a head, bearing a [+WH] feature, is

established, and thus [+WH] (in both spec CP and C) is licensed.

3.3 Back to child language

Let us return to the experimental results and see how the above ideas relate to the central issue of this paper, i.e., the non-V-raising phenomena in Italian and English child language.

Apparently, in main WH-questions of children younger than 3;9/3;10 (Italian/American respectively) the finite verb is not required to move to C, in apparent violation of the requirement that the [+WH] feature on the verb needs to be checked in C overtly in Italian and English. Why should this be the case?

In section 3.2 it was noted that if the verb lacks the relevant features, checking is unnecessary and movement of the verb is not forced. Based on this, it seems plausible to assume that:

(29) verbal features have to be fully and correctly specified (otherwise feature checking and thus verb movement cannot take place)

Thus, children need to acquire the correct and full specification of features on the verb and of functional heads.

Imagine that there is an early stage in which one or more features on the verb are not yet fully specified. If, for example, the morphological features of Agreement and/or Tense are not specified, Agreement or Tense do not need to be checked either and thus overt verb

movement is not forced. Let us consider some evidence bearing on the question whether the Agreement and Tense features exist in early Italian and English child language respectively.

Italian children seem to have the feature AGR from very early on. From the moment they start producing two-word utterances, they make very few "mistakes" in combining the right subject with the correct verb form (cf. Hyams, 1983; 1986). Pizzuto and Caselli (1992) investigated the spontaneous speech of three Italian children (Francesco, Claudia and Marco) on several morphological properties. Claudia and Francesco's corpora consisted of two-week interval transcripts. For their study, Pizzuto and Caselli only used transcripts between the ages of 1;4 and 2;4 for Claudia and between the ages of 1;5 and 2;10 for Francesco. The third child, Marco, was recorded at one month intervals and the age range in which his transcripts were studied was 1;5 - 3;0. Pizzuto and Caselli report that across the three children, about 4% of all utterances containing a verb could be considered as agreement errors.[9] Therefore, it can be concluded that Italian

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[9] A large part of these errors can be attributed to the fact that the children combine a proper name with a verb in first person singular or the subject pronoun *io* ('I') with a verb in third person singular, as is exemplified in (33) and (34):

(33) e ap*o* *Checco* (F 1;10)
(= e apro Francesco (= speaker))
and open-1st p.sg. Francesco

(34) *io* o mett*e* dento etto? (F 1;11)
(= io lo mette dentro questo?)
I it put-3rd p.sg. inside this

This is not very surprising, since, as also Pizzuto and Caselli (1992) point out, third person singular can be considered the most neutral or unmarked form for person reference. Besides, the phenomenon of using proper names to refer to first person singular is often used in the input language as well:

(35) VIR: Chi è che scappa via?

children do have a good notion of subject-verb agreement, at least of the *person* agreement feature (cf. Hoekstra & Hyams, 1994).

This conclusion is confirmed by Guasti's (1993) study of the Italian children Martina (age 1;8 - 2;7), Diana (age 1;10 to 2;6) and Guglielmo (age 2;2 - 2;7) (CHILDES, MacWhinney and Snow, 1985). Guasti reports that "[...] Italian children use the inflection for person very early, especially with the singular persons. With few exceptions, these inflections are correctly distributed among subjects." Guasti further notes that "over the whole period under consideration, the percentage of errors (i.e., verbs used in the incorrect context or with a subject requiring another inflection), is around 1% for Martina and Diana and 3% for Guglielmo."

However, Tense does not seem to be acquired until much later. For example, our impression of the spontaneous speech we investigated, is that simple past tense ('imperfetto') and future morphemes are not very productively used until the age of about 3;6 or later.[10] [11] The first ones appear around the age of 3;0, but they do not occur very often and they do

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who is that goes away
FRA: Inni.
(= Virginia)
VIR: No, Inni non scappa via. (fra24.cha 44%)
no, Inni (= Virginia) not goes away

[10]Data from the CHILDES corpus at the CNR (cf. footnote 11) and the corpus collected by Giovanna Tirodola, Università degli Studi di Padova. Unfortunately, I do not have any proportional numbers at the moment, since the entire corpora are not available to me. The examples come from a selection of the corpus at the CNR in Rome, which I made for other purposes.

[11]It is necessary to look at past tense since in English and Italian (and Germanic and Romance languages generally) tense is underspecified even for adults in the present tense (cf. Hoekstra and Hyams, 1994).

not appear with many different verbs. They seem to become more productive after the age of 3;6. Some of the *first* ones are given in (30):

(30) a. Io sono andato su a neve e sciavo (F 3;0)

(= Io sono andato su la neve e sciavo)

I am gone on the snow and skied

b. Forse pioverá (F 3;0)

maybe (it) will rain

Antinucci and Miller (1976) report that Italian children use the 'passato prossimo' (a compound past tense, comparable to the English present perfect) before they start using the first 'imperfetto' forms. In addition, they note that Italian children often use present tense in obligatory past tense contexts. They also argue that initially, the 'imperfetto' denotes aspect, rather than tense, since the first occurrences of the 'imperfetto' only appear with certain types of verbs, namely state and activity verbs. They claim that even at age 3;4, if Italian children use the 'imperfetto', they us it to denote aspect, rather than tense. This is based on the fact that Italian children choose to use the 'imperfetto' instead of the conditional (correct form for adults) in hypothetical contexts, which is exemplified in (31):

(31) a. e se compravi quelli di vetro si rompevano (3;4)

'and if you had bought the glass ones (=beads) they would have broken'

b. no, lo metto io il bicchiere, se no tu cadevi (3;4)

'no, I'll put the glass (on the table), otherwise you would fall'

c. vengo a dare un bacino a te. tu non ci arrivavi. (3;4)

'I'll come and give you a kiss. (If I hadn't come to you) you wouldn't have been close enough'

(from Antinucci and Miller, 1976).

Thus, Antinucci and Miller's analysis suggests that even in the cases where the morphological form of the 'imperfetto' is produced, it does not denote tense. Translating this into terms of checking, if Antinucci and Miller are right then during the relevant period, the morphological ('imperfetto') feature on the verb is not checked in T, but perhaps in AGRO, or possibly in a separate ASP head. Thus, the verb does not move to T.

What about the Agreement and Tense features in English child language? Assuming that third person singular *-s* on the verb represents Agreement in English, Agreement seems to be problematic for young English speaking children up to about age 2;0, as Radford (1988) points out. He argues that "the lack of number agreement is shown by the fact that the same invariable form of the verb is used with both singular and plural subjects alike". This is illustrated in (32):

(32) a. that go there (Claire, 1;11)

b. all go teaparty (Claire, 1;11)

Furthermore, he notes that "children at this stage seem to show no awareness of grammatical person (or of person agreement)", as is exemplified in (33):

(33)	a.	baby ride truck	(Allison, 1;10)
	b.	Jem have it	(Jem, 1;11)

However, after this age not many agreement errors are found. Since the youngest child participating in the present study is 2;7, we assume that the Agreement features on the verb are completely developed for all children in the experiment.

On the other hand, Tense is not fully acquired by young English speaking children. This is suggested by the behaviour of the past tense marker in English child language. In the spontaneous speech samples we solicited during the WH-experiments with the American children we found only two instances of regularly inflected past tense verbs until the age of 3;10, namely *play-ed*, *stay-ed*, out of 48 utterances in which regular past tense would have been appropriate (= less than 4%). Both examples were produced by the same child. For example, to my question "What did you do yesterday?" the younger children (except for the one child just discussed) answered consistently with bare verbal forms (if it concerned a regularly inflected verb), as is illustrated in (34):

(34) ADULT: "What did you do yesterday?"

CHILD: I walk up the pool, my mom hold my hand. then my dad take Buyana and then my mo n took Gio and Bernard and that time daddy went to work. (A 3;10)

The child in example (34) seems to know some irregular past tense forms. However, these might be unanalyzed and not invoke knowledge of tense. We take productive use (involving overregularization, e.g. *eat-ed*) as evidence of Tense. After the age of 3;10 the children answered in full sentences and used regular past tense verbs 100% of the time, as is exemplified in (35):

(35) ADULT: "What did you do yesterday?"

CHILD A: yesterday I was at school.

yeah, I was. I play*ed*. (A 4;0)

CHILD B: I play*ed* with Adam at Lucie's. (P 4;3)

These findings are reflected in Brown (1973), who reports that the acquisition of regular past tense takes place in his stage V (MLU 4.00). The first child he studied - Adam - acquired regular past tense at age 3;6; the second child - Sarah - at age 4;0.[12] Thus, just as in Italian

[12]The third child in Brown's study - Eve - seems to have acquired regular past tense at age 2;2. However, Eve seems to acquire language must faster than most other English speaking children and hence not representative.

child language, the tense morpheme is not fully productive during the first stages of development, which suggests that in English as well child language the Tense feature on V is underspecified. We will return to the term 'underspecified' below.

Other evidence that the Tense feature is not fully acquired in child language comes from ar observation first made by Weverink (1989) and Jordens (1990) for Dutch. They report that Dutch children go through a stage in which they can use infinitives independently in root clauses. Wexler (1993) refers to this stage as the "optional infinitive stage" and reports the same phenomenon in many other child languages, such as French (Pierce, 1989), Germar (Poeppel and Wexler, 1993), Swedish (Platzack, 1990), Danish and Norwegian (Plunkett and Stromqvist, 1990). Rizzi (1994) calls this type of infinitive a "root infinitive", a term we will adopt. Hyams (class notes 1994) provides a list of percentages of root infinitives in several different child languages:

(36)

language	*child*	*age*	*% of RIs*
Swedish	Freja	1;11-2;0	38%
	Tor	1;11-2;0	56%
	Embla	1;8-1;10	61%
(Platzack, 1990; Guasti, 1994)			
German	Simone	2;1	46%
		2;2	40%
(Weissenborn, 1990)			
Dutch	Laura	1;8-2;1	36%
	Tobias	1;10-1;11	36%
	Fedra	1;10-2;1	26%

(Weverink, 1989)			
Italian	Paola	2;0-2;5	7%
	Daniele	1;7-2;6	8%
	Massimo	1;7-2;6	6%
	Gabriele	1;7-2;6	7%
	Orietta	1;7-2;6	5%
	Elisabet.	1;7-2;5	10%
	Fransces.	1;9-2;5	5%
(Schaeffer, 1990)			
	Diana	2;0	0%
	Martina	1;11	16%
		2;1	4%
(Guasti, 1994)			
Spanish	Damariz	2;6-2;8	5%
	Juan	1;7-2;0	12%
		2;1-2;4	10%
(Grinstead, 1994)			
Catalan	Marti	2;0-2;5	3%
	Guillem	1;11-2;6	3%
(Torrens, 1992)			
French	Philippe	2;1-2;2	26%
(Pierce, 1989)			
	Natalie	1;9-2;2	49%
	Daniel	1;8-1;11	20%
	Philippe	2;1-2;6	43%
(Krämer, 1993)			

Guasti (1994) notes that Italian children do not go through this stage, since they do not produce many root infinitives, although some. Nonetheless, Italian children do use many past participles - another form of a non-finite verb - during their initial stages (Antelmi, 1992). Therefore, we would like to adopt an idea first proposed by Sano & Hyams (1993) who claim that all children go through an "optional *non-finite* stage", rather than an "optional infinitive stage". Examples of root infinitives and "root past participles" are given in (37):

(37) a. compae batte (M 1;9)

(= comprare ciabatte)

buy-INF slippers

b. anche io giocare? (P 2;5)

also I play-INF

c. mettee a posto quelli giochi (F 3;3)

(= mettere a posto quelli giochi)

put-INF in order those games

(from Schaeffer, 1990)

d. mangiate e pappe (D 1;7)

eaten the porridge

e. a pallina, rotta a palina (D 1;7)

the ball, broken the ball

f. fatta pace? (G 2;1)

made peace

g. vista etta? (G 2;0)

seen this

(from Antelmi, 1992)

English children clearly go through a root non-finite stage. As Wexler points out, uninflected forms in English can be analyzed as Root Infinitives, bringing English in line with other Germanic languages. Examples of root infinitives in English child language are

given in (38):

(38) a. Hayley draw boat (from Radford, 1990)

b. Daddy want golf ball (from Radford, 1990)

To conclude, all children initially use non-finite verbs, either infinitives or participles, in root clauses, further supporting the idea that Tense is lacking or underspecified. As Wexler (1993) notes, this does not imply that the child does not understand time. S/he might understand time as a semantic concept. However, this does not imply that the child has acquired the Tense feature or the full specification of the functional head T.

As for the age at which children across languages produce root infinitives, it is not entirely clear when the child grammar no longer allows matrix non-finite clauses. The table in (36) is not very revealing, since it only reflects percentages of root infinitives around the age of 2. This does not imply that root infinitives no longer occur after this point. In actual fact, Wijnen and Bol (1993) report that at least one of the two Dutch children they studied (Niek), still produces root infinitives at the age of 3;8. The relevant data of their tables (2a) and (2b) are replicated in (39):

(39) a. *Numbers and percentages of non-finite verbs in Thomas's corpus*

age	2;4	2;5	2;6	2;7	2;8	2;9
non-fin	164/44%	32/25%	40/33%	26/9%	29/13%	13/8%
total	370	126	123	279	220	169

b. *Numbers and percentages of non-finite verbs in Niek's corpus*

age	2;7-2;10	2;11-3;0	3;1-3;2	3;2	3;5	3;8
non-fin	109/67%	115/49%	131/38%	68/20%	22/8%	10/3%
total	163	234	341	345	267	304

The data in (39) - in particular those in (39b) - suggests that even as late as 3;8, children may still have problems with Tense.

Several proposals have been made to explain why children go through a stage in which they produce non-finite verbs in root clauses (cf. Wexler, 1993; Rizzi, 1994; Hyams, 1994). Although in many respects rather different, these theories share the idea that the expression of tense is not obligatory as it is in adult language. This is referred to as "underspecification" or "deficiency" of T.

Concluding, we could say that in Italian as well as in English child language, the Tense feature on the verb is underspecified.

This has several implications with respect to verb movement. If Tense is underspecified, there is no need to move the verb to T, since there is no tense feature to be checked. Recall that if movement is not forced, it does not take place (Chomsky, 1993).

Thus, V-to-T is blocked in the overt syntax.[13] If V-to-T does not take place, V-to-T-to-C is prohibited because of the Head-Movement Constraint (Travis, 1984). As for main WH-questions, this means that the [+WH] feature on the verb cannot be checked overtly in C. Therefore, the only possibility left for [+WH] to be checked is at LF. Although the child can infer from the input that [+WH] should be checked in C in the overt syntax, s/he has no choice but check it at LF, since the Head Movement Constraint prevents the verb from overtly moving up to C. Concluding, the child does not move the finite verb to T or C, but maximally to AGRO in the overt syntax.

The correlation between an underspecified Tense feature and the lack of V-raising in child language suggests that there is a more general relationship between the specification of verbal features and V-raising to C. This hypothesis receives independent support from the Northern Italian dialect Triestino. Poletto (1992) points out that in adult Triestino main WH-questions, the verb does not need to raise to C. This is illustrated in (40):

(40) Cossa la mama dise?
what the mommy says

It is striking that in this dialect the inflectional paradigm for verbs is considerably poorer than in standard Italian: in the second and third person singular and the third person plural, the inflectional affix is completely lacking. This is presumably the reason that these forms

[13]Since Agreement is acquired before Tense, we are forced to assume that the agreement features on the verb are checked at LF in AgrS, a node higher in the tree than T.

must be accompanied by an overt subject pronoun, which replaces the function of agreement morphology in identifying *pro* (Italian is a pro-drop language) (Poletto, 1992). The paradigm is exemplified below:

(41)		vegno	'(I) come'
	te	vien	'you come'
	el	vien	'he comes'
		vegnemo	'(we) come'
		vegni	'(you-pl) come'
	i	vien	'they come'

The above facts suggest that in Triestino verbal morphology is underspecified. This would parallel the behaviour of standard Italian and English child language; when one of the features on the verb is underspecified, the verb cannot move overtly to C, since V-to-T is blocked.

Of course the parallel as just described between child English and Italian on the one hand and Triestino on the other hand, raises the question as to exactly which verbal feature is underspecified. In the child languages it appears to be the Tense feature, whereas in Triestino it seems to be the Agreement feature, rather than the Tense feature.

Notice that we distinguish here between *'underspecified'* and *'weak'* (in the sense of Chomsky, 1993) features. If both terms meant the same, then adult English should allow non-verb-raising in main WH-questions, since it has a "weak" inflectional paradigm. This

suggests that it is not just overt morphology in general which triggers inversion. Rather, the entire morphology system of a language should be taken into account: within the group of Italian dialects, the Triestino verb morphology is relatively weak, compared to other types of morphology as well as to the verb morphology of more 'standard' Italian dialects. Therefore, it seems plausible to call Triestino verb morphology *underspecified*. On the other hand, ('standard') English verbal inflection is not particularly weak compared to the morphology elsewhere in the language and to the verb morphology of other English dialects, and can thus be considered *fully specified*. We realize that this one example which seems to supports my hypothesis that there is a relationship between an underspecified T and the lack of verb raising does not suffice to either verify or falsify it. Therefore, we will leave it as an hypothesis which needs to be investigated in future research.

The fact that in the initial stage of child language the Tense feature is underspecified gives rise to two possible interpretations of main WH-questions as in (3): a subject interpretation, in which the WH-constituent *che bambini/what children* is in spec C, and an object interpretation, in which the WH-element *che/what* is in spec C and *bambini/children* in subject position (spec AGRSP). In both interpretations, the finite verb is maximally in AGRO.[14] The representations of WH-questions with object and subject interpretation are

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[14] Although the subject is located in spec AGRSP in the overt syntax, the verb only moves to AGRS at LF, according to my analysis of child language. Therefore, I assume that NOM Case of the subject is checked at LF in AGRSP by virtue of spec-head agreement (cf. Chomsky, 1992).

It is often noted for English child language that in a stage where WH-questions still show non-inversion, e.g. 'what he can ride in?' (Klima & Bellugi, 1966), yes/no questions do seem to involve subject-aux inversion:

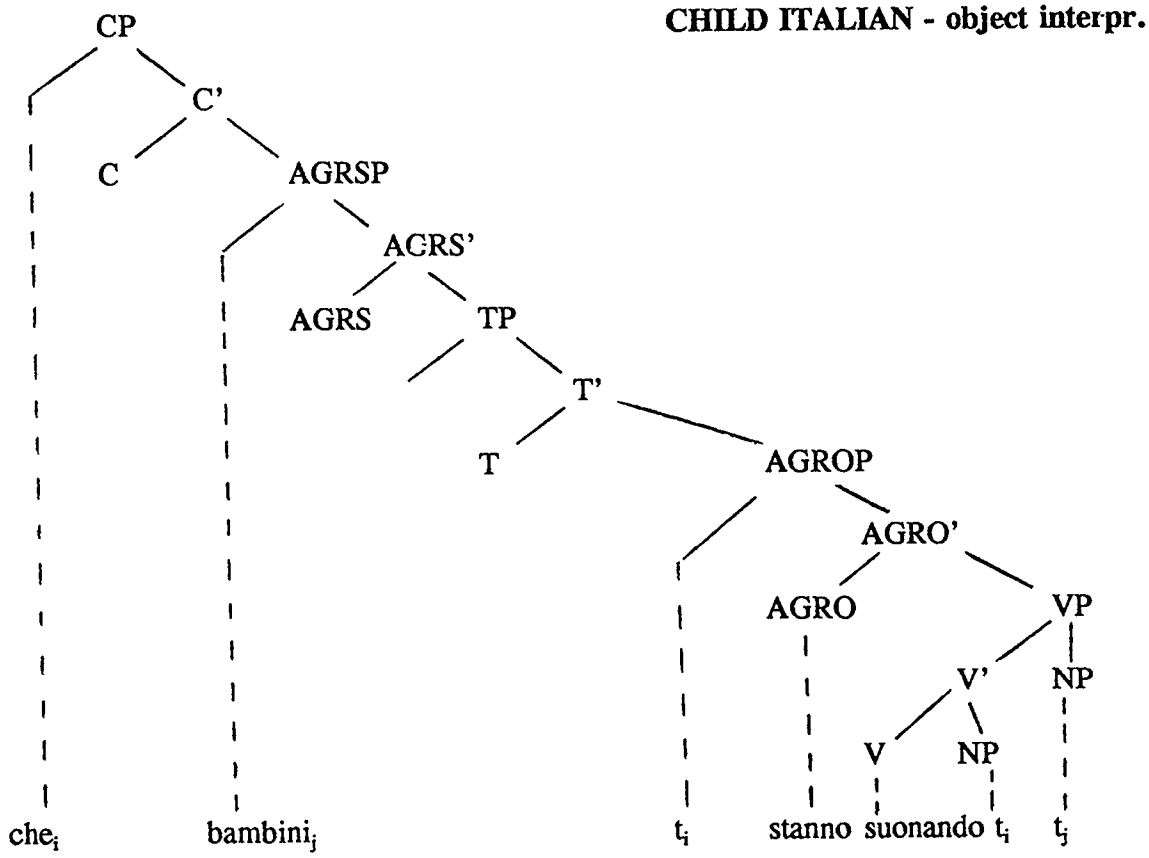
(i) does the kitty stand up?
(ii) can I have a piece of paper? (Klima & Bellugi, 1966)

given in (43) and (44), respectively. The structures in (43a and b) represent the *object* interpretation in Italian and English:[15]

Although this is not the case for all English speaking children (cf. Weinberg (1990) for further discussion of this phenomenon), I assume that in the above cases, the auxiliary does not move to C, as in adult language, but to AGRO, just as in the WH-questions in the experiment and in all other spontaneously produced utterances showing inversion. As for the subject NP, I suggest that in the early yes/no questions it stays in its base-generated spec VP position. Similarly to early WH-questions, I assume that NOM Case is checked at LF: the verb moves to AGRS at LF, where it can check NOM Case of the subject (which moves to spec AGRP at LF) under spec-head agreement.

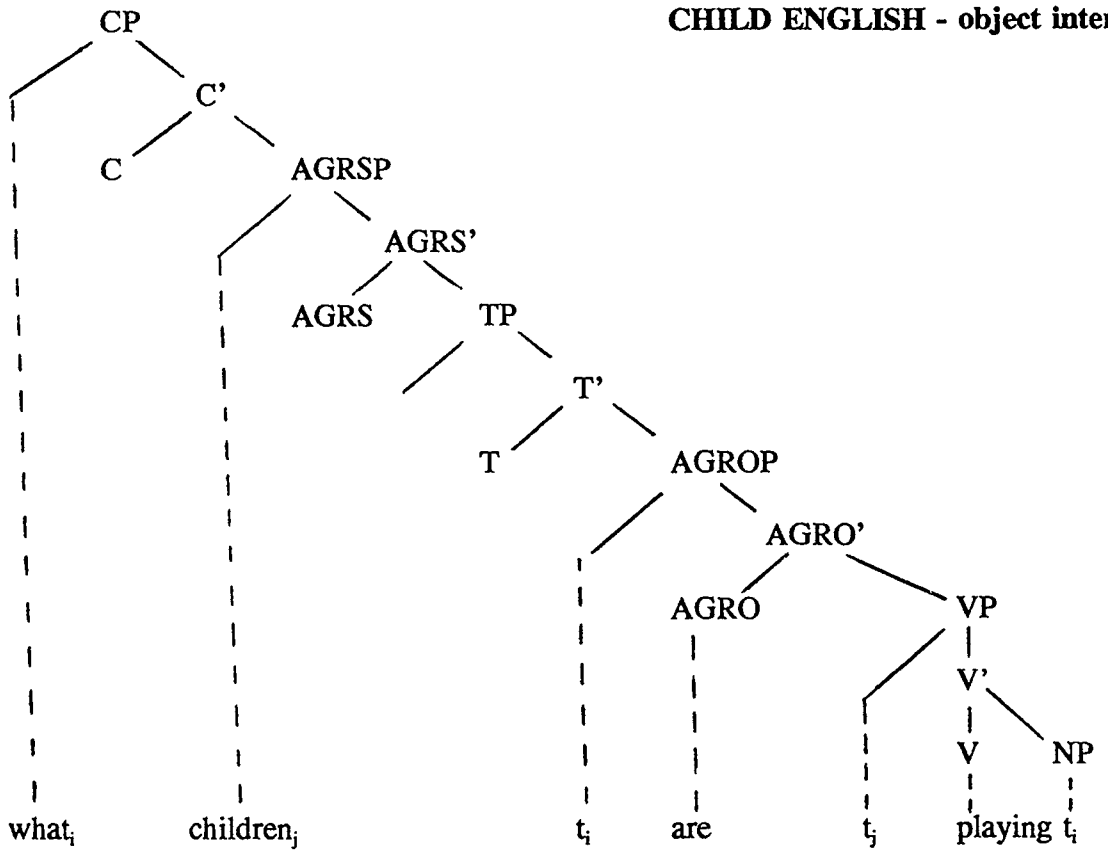
[15]I assume the Italian subject is base-generated in post-verbal position. For arguments concerning the position of the subject in Italian, see Rizzi (1991), Giorgi and Longobardi (1991) and Schaeffer (1990). For the assignment or checking of NOM Case on the post-verbal subject, I refer to Rizzi and Roberts (1989), Rizzi (1991) and Poletto (1992) among others.

(43) a.


CHILD ITALIAN - object interpr.
CP
C'
C
AGRSP
AGRS'
AGRS
TP
T'
T
AGROP
AGRO'
AGRO
VP
V'
NP
V
NP
che$_i$
bambini$_j$
t$_i$
stanno
suonando
t$_i$
t$_j$

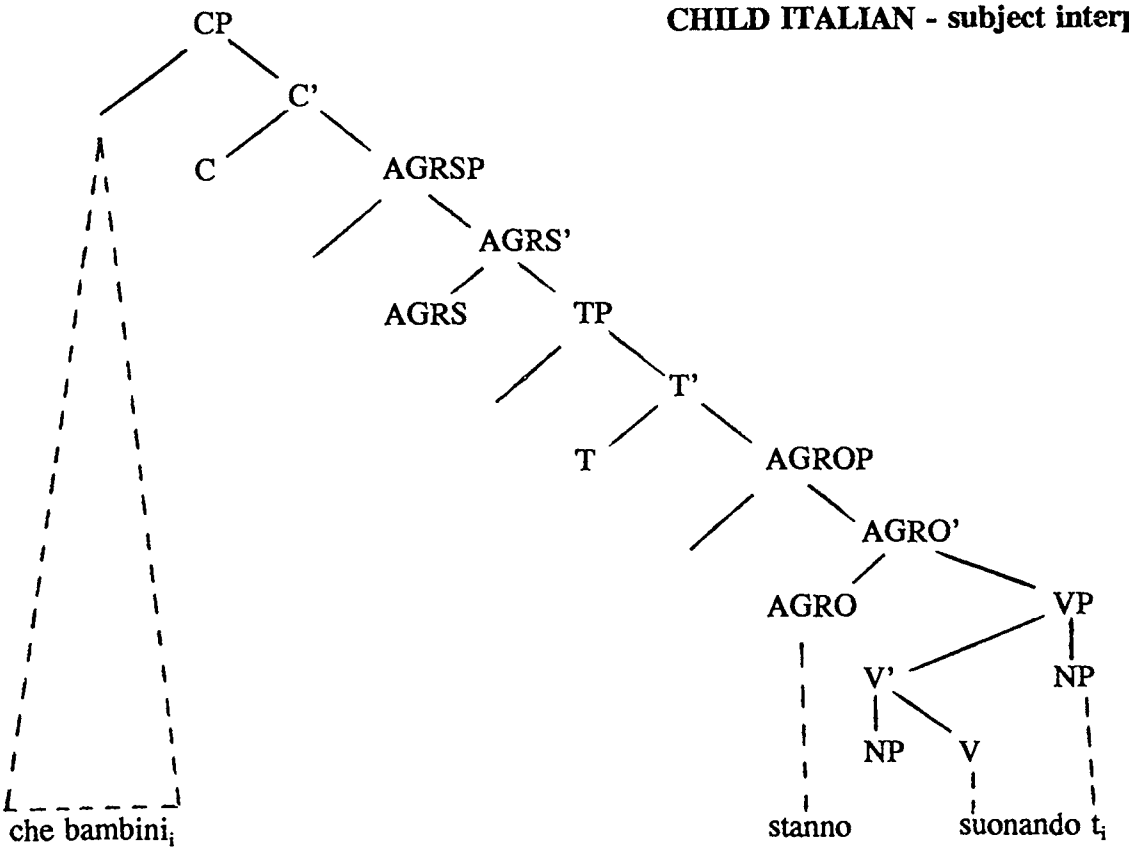
41

b.

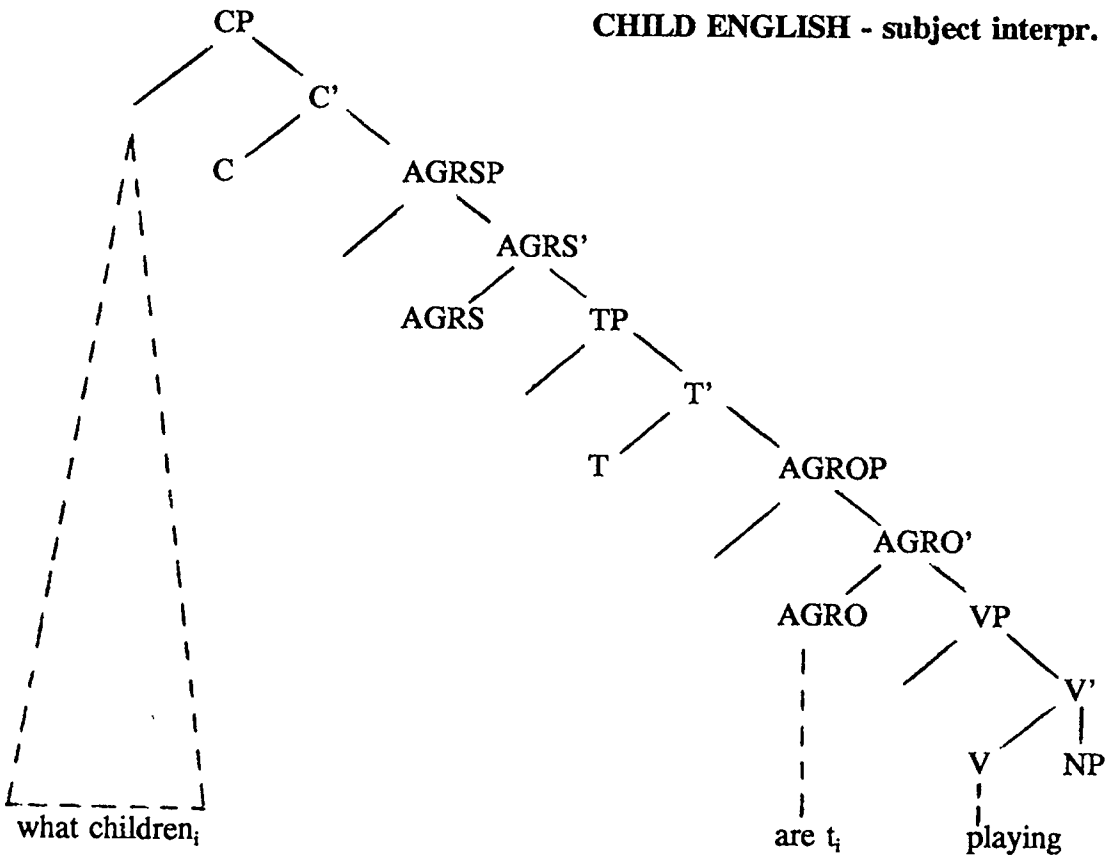


The structures in (44a and b) represent the *subject* interpretation in Italian and English, respectively:

(44) a.


CHILD ITALIAN - subject interpr.
CP
C'
C
AGRSP
AGRS'
AGRS
TP
T'
T
AGROP
AGRO'
AGRO
VP
V'
NP
NP
V
che bambini$_i$
stanno
suonando t$_i$

b.



As an alternative explanation for the phenomenon that children assign object interpretations to sentences as in (12) - (17) before age 3;9, one could propose that the children have to acquire the complete determiner system before they can interpret WH-questions as in (12) - (17) properly, that is, give them subject interpretations. However, this hypothesis makes the wrong predictions with respect to the test sentences including an article, at least for the Italian children. One would expect the children to give no subject interpretations at all after the age at which the determiner system is acquired, say 3;9, since

che i bambini is by no means interpretable as a subject in adult language. However, as Table II shows, the Italian children still give many subject interpretations after 3;9. Therefore, the hypothesis that the change around age 3;9 is dependent upon the acquisition of the determiner system is disconfirmed.

3.5 Transition

One of the goals of theories concerning child language is to explain how children's grammars develop into adult ones. This "developmental problem" is usually the most difficult one to solve. The crucial question here is: how does the Italian and American child's grammar develop into a grammar in which the finite verb *does* raise to C in main WH-questions?

As we saw, the underspecification of Tense is responsible for the lack of verb movement in the child's main WH-questions.

As soon as the child has acquired Tense as a verbal feature which is fully specified, V-to-T-to-AGRS-to-C becomes *possible* in the overt syntax. Of course the question arises as to why the verb is *required* to raise to C now.[16] As we noted before, the child can infer from positive evidence in the input that [+WH] is always checked in C overtly in (adult) Italian and English. However, during the period that T is underspecified, the Head Movement Constraint prevents the verb from moving to C and forces the child to check [+WH] at LF. In other words, during this period the child's grammar cannot accomodate overt checking of [+WH], and thus the available positive evidence is being ignored.

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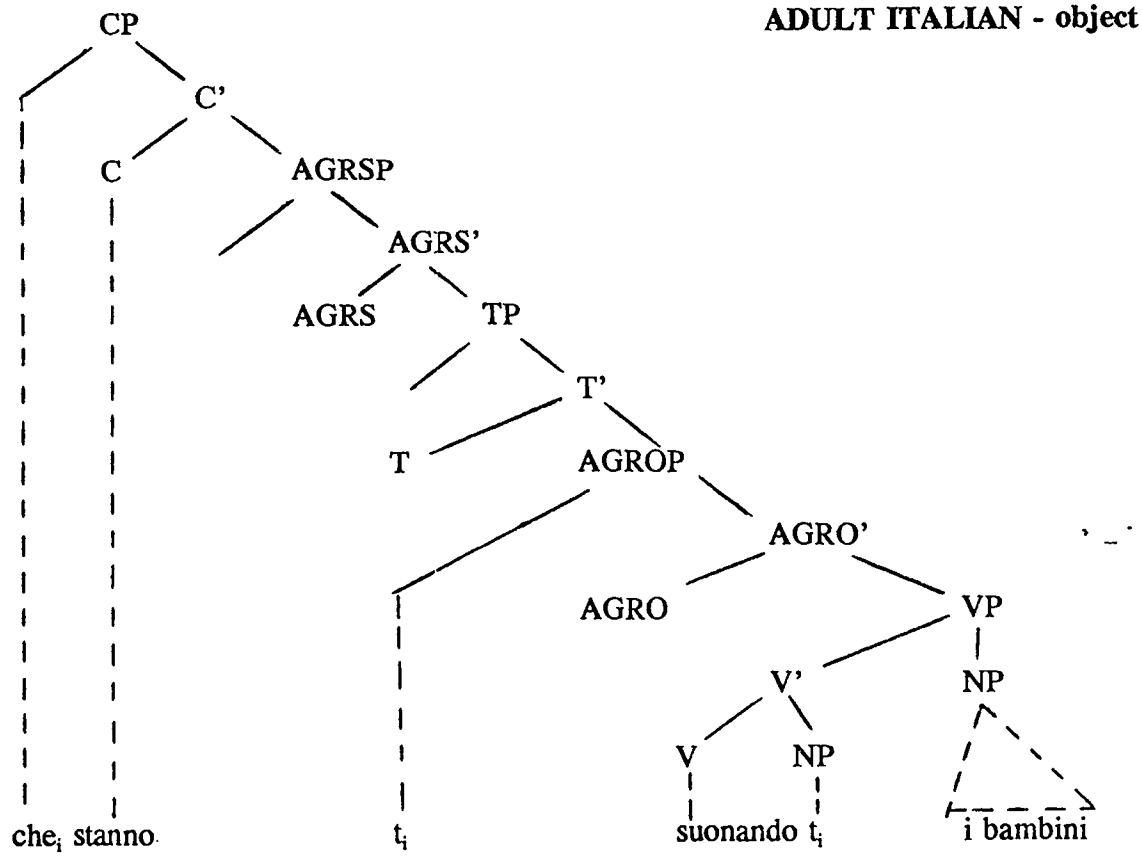
[16]I am grateful to an anonymous reviewer who pointed out this problem to me.

However, as soon as movement through T becomes possible, the positive evidence becomes relevant. The child's grammar is capable of accomodating the positive evidence regarding [+WH] checking now and thus makes use of it.

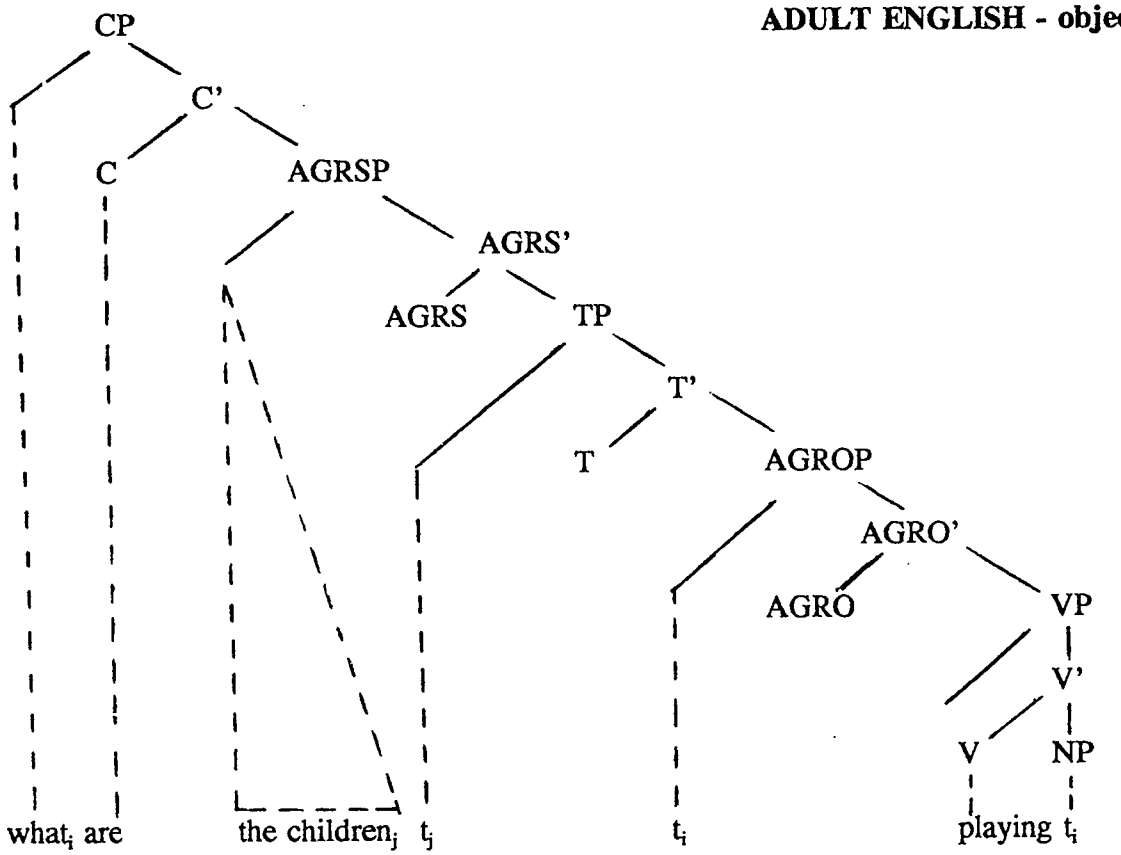
Thus, from the moment that Tense is fully specified, object interpretations of questions as in (3) are no longer possible. From this point in development object-interpretable main WH-clauses must have the following structure:

(45) a.

ADULT ITALIAN - object int.



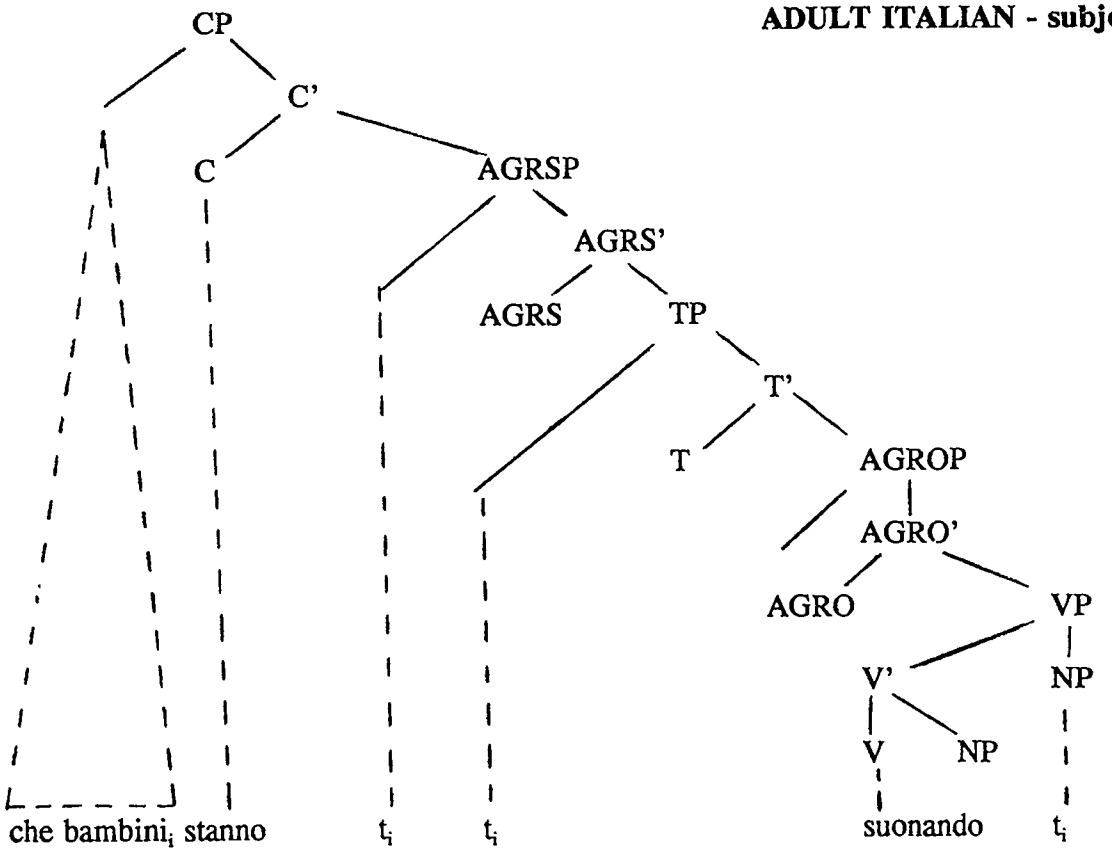
b.



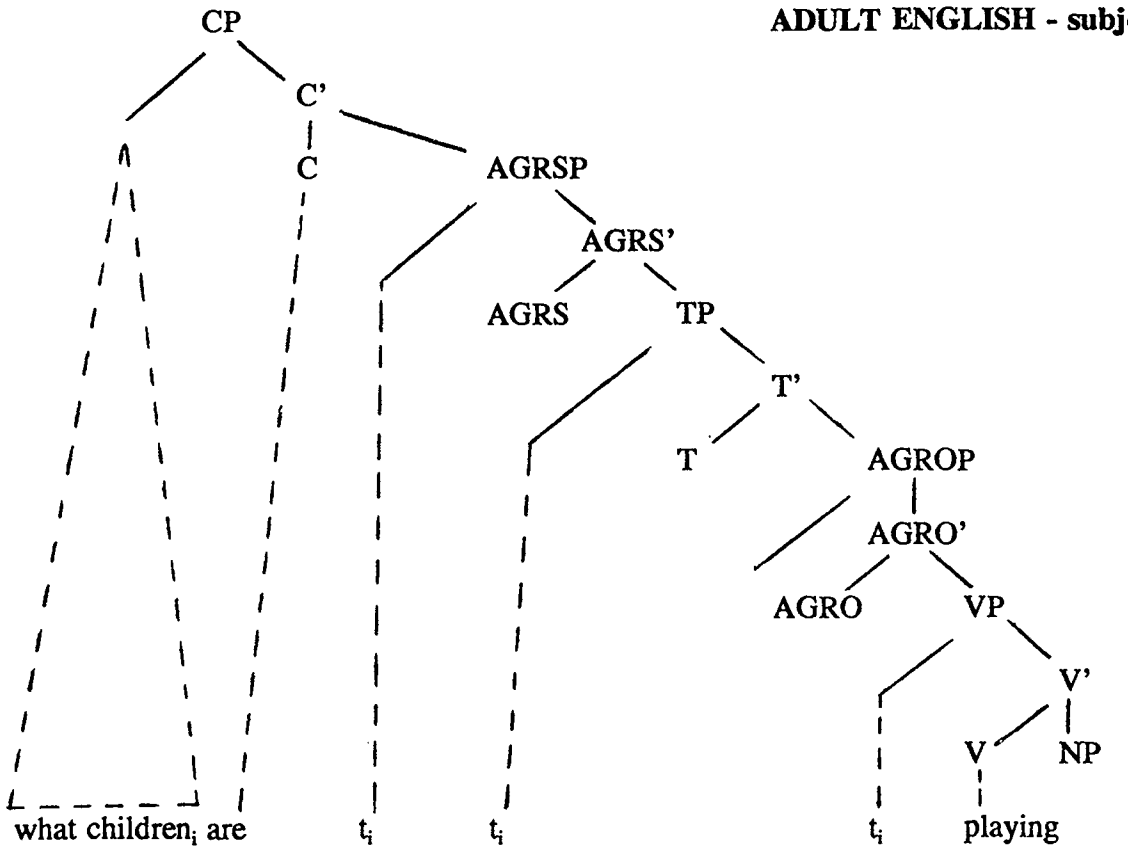
Subject-interpretable main WH-clauses must correspond to trees as in (46):

(46) a.

ADULT ITALIAN - subject int.



b.



4. Conclusion

In this paper we have tried to provide an explanation for the fact that young Italian and English speaking children do not require V-raising to C in main WH-clauses.

We proposed to expand the idea of checking as proposed by Chomsky (1993) to WH-questions. Taking Rizzi's (1991) WH-Criterion as a starting point, we developed a theory in which [WH] is a feature on the verb, similar to [TENSE] and [AGR] (cf. Chomsky, 1993). Based on the idea that the feature Tense on the verb is underspecified in Italian and English child language, we argued that overt verb movement to T is not forced. By Economy then,

given the Head Movement Constraint (Travis, 1984), this implies that overt verb movement to C is blocked.

Independent evidence for the possible correlation between an underspecified verb feature and the lack of V-raising in main WH-questions was provided by the Triestino dialect, which shows non-inversion in main WH-questions and an underspecified inflectional paradigm. This suggests that at least the Agreement and perhaps the Tense feature on the verb is underspecified.

The transition into adult language takes place at the moment Tense is fully specified. From this moment on, the Tense feature on the verb must be checked and thus the verb is forced to move to T. From there it can and must move to C now, in order to check the [+WH] feature.

Concluding, the child's underspecification of Tense accounts for object interpretations (= lack of V-to-C raising) of questions as in (3), here repeated as (47):

(47) a. Che bambini stanno suonando?

b. What children are playing?

The presented analysis is compatible with the idea that the *maximal projection of functional categories* (here TP) exists from the beginning (Hyams, 1992; Poeppel and Wexler, 1993, among others). However, the *full and correct specification features (here Tense)* has not been acquired yet. This accounts for the difference between child and adult main WH-questions in Italian and English.

Appendix

Pictures belonging to questions (12) - (17) and (18) - (23)

figure 1 ((12) & (18))

figure 2 ((13) & (19))

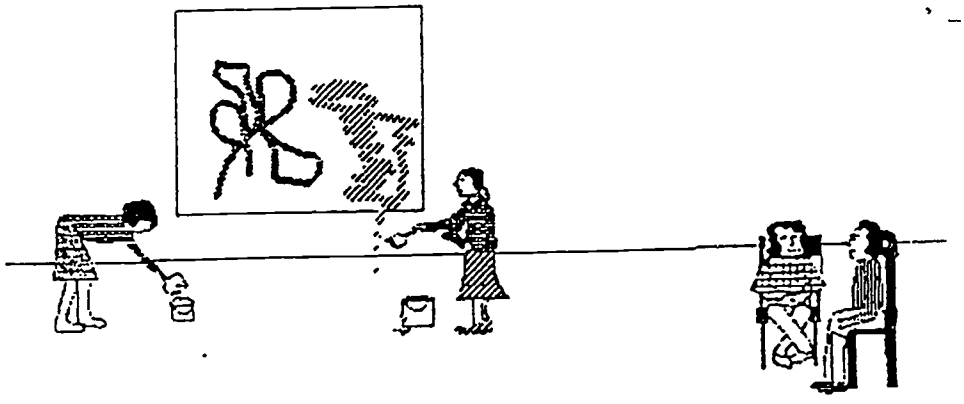


figure 3 ((14) & (20))

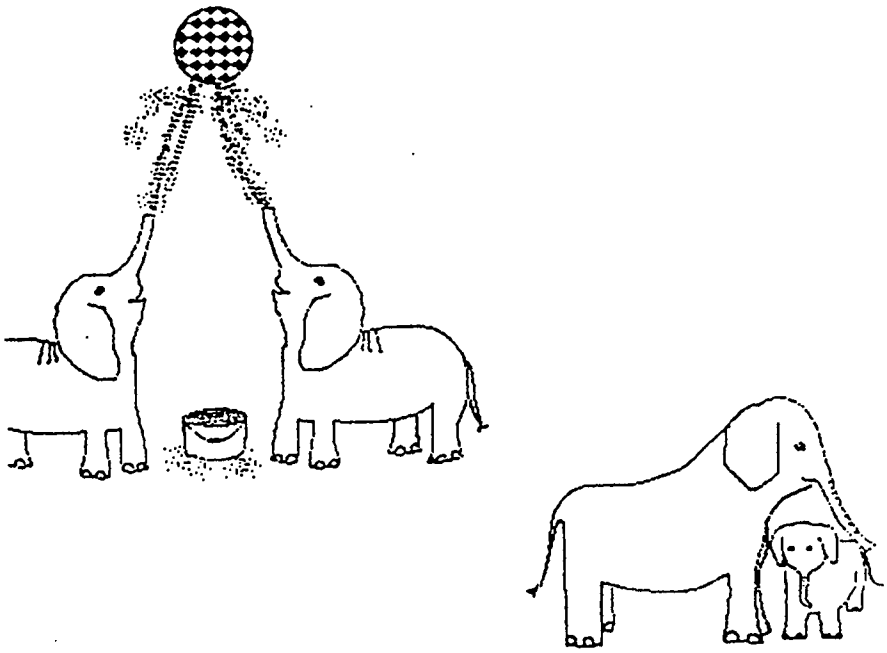


figure 4 ((15) & (21))

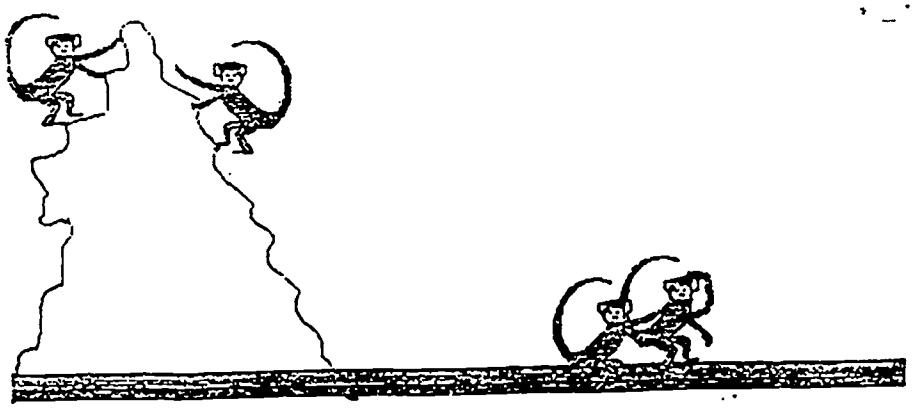


figure 5 ((16) & (22))

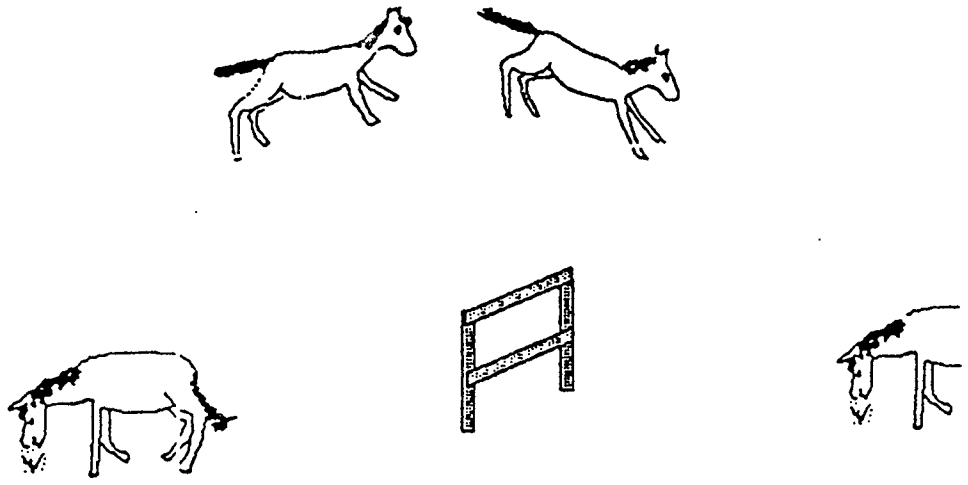
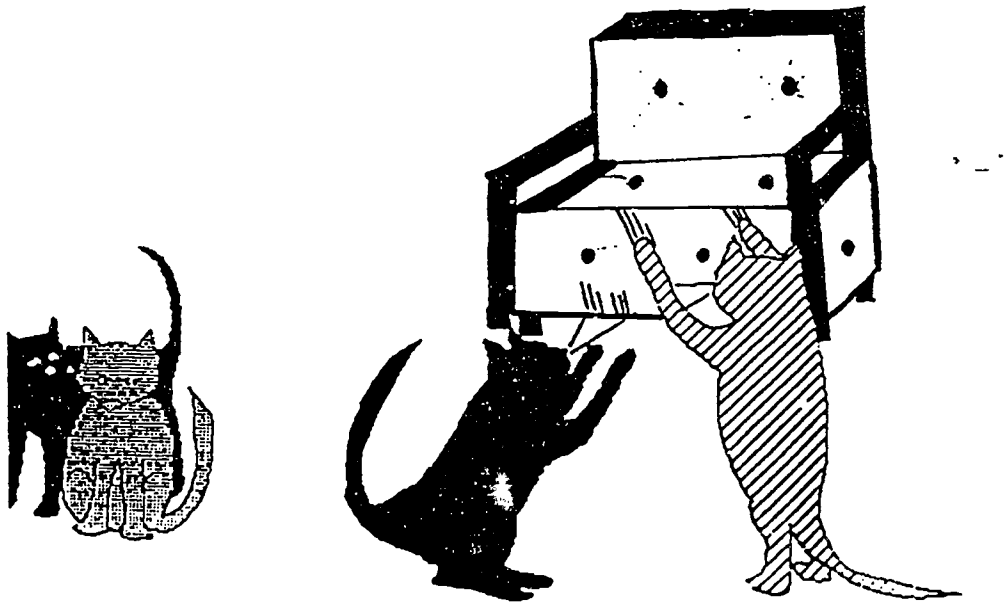


figure 6 ((17) & (23))



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