Possessor Extraction in Child English: A Minimalist Account

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This paper reports the results of an experimental study that investigated how young English-speaking children acquire questions with *wh*-possessive phrases such as 'whose hat'. It has been noted since Ross (1967) that adult English patterns with other Germanic languages in enforcing obligatory pied-piping of *whose*-phrases, as shown in (1):

(1) a. Whose hat did he take?
b. **Whose* did he take *hat*?
c. **Who* did he take *'s hat*?

The examples in (1) show that neither extraction of the genitive wh-possessor 'whose', nor extraction of the bare wh-possessor 'who' is allowed.[1] By contrast, in languages like Hungarian, Tzotzil, and Russian, wh-possessors are free to optionally extract out of NP. Consider a representative example from Hungarian that illustrates optional extraction of the wh-possessor NP in dative case (the data are from Szabolcsi 1994):

(2) *Ki-nek*$_k$ ismer-té-tek [$_{DP}$ t_k a vendég-é-ø-t]]]?
Who-Dat know-past.2pl the guest -poss.3sg.Acc
'Whose guest did you know?'

The work of Chung (1991) on Chamorro appears to suggest that there is a third alternative to pied-piping, namely, obligatory extraction of wh-possessors, as illustrated in (3):

(3) *Hayi*$_k$ un-yuland [$_{DP}$ munika-ña t_k]?
Who Infl(2c)-break doll-Agr(3sg)
'Whose doll did you break?'

[1]Ross (1967) labeled the ungrammatical examples in 1(b,c) as 'left-branch violations'. In this paper, we will use the term 'possessor extraction' to avoid a language-specific bias in terminology, since crosslinguistically wh-possessors may occupy a left or a right branch of the Spec of NP.

We take the crosslinguistic facts in (1-3) to suggest that there exist three types of grammar with respect to possessor extraction possibilities:

(a) Grammar Type A (Germanic languages): obligatory pied-piping
(b) Grammar Type B (e.g. Hungarian): optional possessor extraction
(c) Grammar Type C (e.g. Chamorro): obligatory extraction

Given the parametric variation in extractability of wh-possessors, the purpose of the experiment was to investigate how English-speaking children converge on Grammar Type A. The Subset Principle (Berwick 1985) predicts that children should start out with the most restrictive option that can be disconfirmed using positive evidence from the types of sentences found in the child's linguistic environment. Strictly speaking, both Grammar Type A (obligatory pied-piping) and Grammar Type C (obligatory extraction) can be viewed as subsets of Grammar Type B, where possessor extraction is optional. Thus we can expect children to start out with an adult-like option or with a Chamorro-like option, which they later should discard in favor of obligatory pied-piping. Our experiment investigated precisely these predictions.

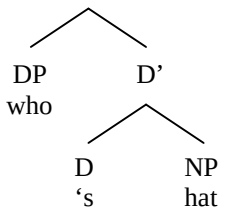
1 Theoretical Background

In this section, we present a more detailed theoretical background of the study. We begin by reviewing some recent studies of possessive constructions in English and some recent syntactic proposals that attempted to pinpoint the source of parametric variation in possessor extraction. At the end of the section, we offer our own perspective on the aforementioned parametric differences.

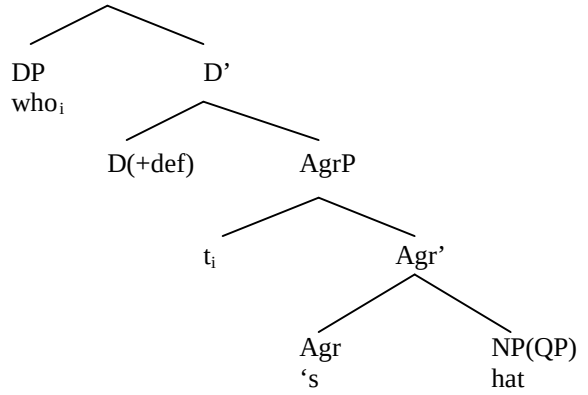
1.1 Possessive Noun Phrases in English

Wh-possessives have a complex internal structure in English. In (4-5), we present two widely-known analyses of possessive nominals, that of Abney (1987) and that of Kayne (1993):

(4) DP (Abney 1987)



(5) DP (Kayne 1993)



On Abney's (1987) analysis, the possessive clitic *'s* projects a D head in the nominal structure; the wh-possessor sits in its specifier and the possessed noun functions as its complement. Kayne (1993) follows Szabolcsi (1983/84) who proposed that the structure of noun phrases essentially parallels the structure of clauses in that it contains two functional projections: AgrP and DP (AgrP being parallel to IP and DP being parallel to CP). In Kayne's structure, possessor phrases undergo movement from Spec,AgrP to Spec, DP where they receive Case from a [+definite] null D. The structures in (4-5) shed some light on the non-extractability of 'whose'. In particular, Kayne (1993) suggests that 'whose' cannot extract because 'who' and *'s* do not form a constituent. Therefore, extraction of 'whose' violates a principle of grammar requiring that only constituents be subject to movement operations.

The explanations for the non-extractability of the bare wh-possessor 'who' centered around the phonological constraints on the cliticization of the possessive clitic *'s*. Radford (1997), among others, suggests that the cliticization of *'s* obeys the adjacency requirement, meaning that *'s* can only cliticize onto the constituents in the Spec of DP. Chomsky (1995) proposes that a string consisting of the clitic *'s* and the possessed NP (*'s hat*) is not a legitimate object at PF. The question that we will address in the remainder of the section is whether there is a deeper property of possessive DPs in English that disallows possessor extraction. By a 'deeper property', we mean the one that is unrelated to the syntactic status of the clitic *'s* or its phonological properties. In considering this question, we take a brief look at the analyses

of possessor extraction in languages such as Hungarian, Tzotzil, and Chamorro.

1.2 Possessor Extraction in Hungarian, Tzotzil, and Chamorro

Let us begin by considering the surface form of wh-possessives in Hungarian, Tzotzil, and Chamorro. The data in (6) below are strikingly similar: wh-possessors agree with the possessed nouns in person and number features in all three languages:

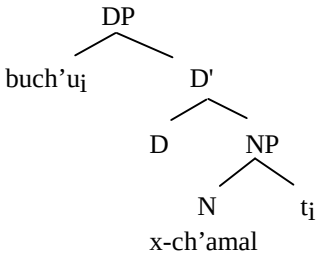
(6) a. Ki-nek a vendég-é-ø-t (Hungarian, Szabolcsi 1983/84)
who-Dat the guest-poss.3sg.Acc
'Whose hat?'
b. Buch'u s-tot (Tztozil, Aissen 1996)
who 3sg-father
'Whose father?'
c. Hayi munika-ña (Chamorro, Chung 1991)
who doll-Agr(3sg)
'Whose doll?'

The possessor-possessed NP agreement is morphologically visible in the form of an affix on the possessed NP. In all three languages, the same affix is used to mark subject-verb agreement, which makes possessor agreement parallel to the clausal agreement. Tzotzil and Chamorro differ from Hungarian in two respects, however: (a) there is no overt definite determiner in-between the possessor and the possessed noun; (b) the wh-possessors are not overtly marked for case.

Now let us examine the internal structure of possessive phrases and the steps of possessor extraction in these languages. We will claim that Hungarian, Chamorro, and Tzotzil are similar in that wh-possessors extract out of the DP in two steps. First, possessor phrases move to a specifier position of Agr where they trigger agreement in person and number with the possessed noun. Next, they move to a peripheral A-bar position of D which appears to serve as an escape hatch for extraction.

Consider first the steps of possessor extraction in Tzotzil as suggested in Aissen (1996):

(7)



In proposing the structure in (7), Aissen (1996) points out that wh-possessors are required to extract via the Spec of DP, presumably for scope-taking reasons. The evidence for Aissen's argument comes from the complementary distribution between lexical and wh-possessors. In Tzotzil, lexical possessor phrases follow the possessed noun and the definite determiner. If a lexical possessor DP is preposed, the construction becomes ungrammatical. Consider the data in (8):

(8) a. s-p'in li Maruch-e
A3-pot the Maruch-ENC
'Maruch's pot'
b. *[*li Maruch*] s-p'in [*t*]....-e
the Maruch A3-pot....ENC
'Maruch's pot'

By contrast, wh-possessors do not co-occur with the definite determiner and have to precede the possessed noun, as illustrated in (9):

(9) a. [*buch'u*] x-ch'amal [*t*]
who A3-child
'Whose child?'
b. *x-ch'amal [buch'u]
A3-child who
'Whose child?'

Aissen takes the facts in (8-9) to suggest that the Spec of DP is an operator position, that is, it can only be occupied by wh-elements. Notice also that Aissen assumes that possessor-phrases are base-generated in the specifier of the possessed noun. However, following Szabolcsi (1983/84, 1994), we propose that possessor noun phrases trigger person/number agreement with the possessed noun in a higher functional projection AgrP, much in the same

way as clausal DP subjects. In (10), we present Szabolcsi's (1983/84) analysis of possessor extraction in Hungarian:

(10) *Ki-nek*$_k$...[$_{DP}$ t_k'' [$_D$ a [$_{AgrP}$ t_k' [$_{Agr}$ (+poss) [$_{NP}$ t_k kalap-ja]]]]]
who-Dat the hat-poss.3sg.Acc

In (10), the possessor originates in the specifier of the possessed noun, then moves to Spec,AgrP and from there moves to Spec,DP. Possessor extraction to Spec,CP takes place from Spec,DP. Szabolcsi (1994) claims that possessor movement to Spec,DP is facilitated by the need to turn a functional head D into a proper governor for the trace in Spec,AgrP.

Given that Chamorro possessives also manifest possessor-agreement in the DP, it is plausible to suppose that wh-possessors extract out of the DP in a two-step fashion. As for why wh-possessors seem to obligatorily extract out of DP in Chamorro, we suggest that this property may be related to the null nature of D. It is worth noting that both lexical and wh-possessors obligatorily extract in Hungarian when the determiner projecting a higher DP is null, as in the so-called 'existential possessive constructions' (for details, see Szabolcsi (1994:223-225)).

1.3 Parametric Accounts of Possessor Extraction

In this section, we present and evaluate some recent proposals that attempted to account for the crosslinguistic variation in possessor extraction. In some earlier syntactic work, extraction possibilities out of NP were accounted for in terms of general constraints on wh-movement such as the ECP, or single syntactic conditions such (e.g. Left-Branch Condition, Ross 1967). Corver (1990) addresses the differences in extraction patterns out of NP between the Germanic and Slavic languages. He suggests that the differences follow from the interaction of the ECP, the syntactic status of noun phrases (DPs in Germanic vs. NPs in Slavic), and the case assignment mechanism.[2] Cover stipulates that structural case can block antecedent-government if it is assigned to a DP as opposed to a NP argument.

On the other hand, Uriagereka (1988) proposes that the locus of the parametric differences in extraction out of the DP resides in the morphological status of the D head. The gist of his proposal is that the morphological status of D (null vs. overt) may determine the 'richness' of D in a language: the 'richer' the D is, the more of a barrier it evokes. Presumably, D is

[2]Corver (1990) adopts Chomsky's (1986) definition of ECP as antecedent-government.

'richer' in languages where it is morphologically expressed. Notice that neither Corver's, nor Uriagereka's proposals explain the data from Hungarian, Tzotzil, and Chamorro. Just like in Germanic, the possessive noun phrases in these languages project to DP and are assigned structural case. However, contrary to Corver, the DPs are not barriers for extraction. Uriagereka's reasoning predicts that the determiner *a(z)* ('the') in Hungarian possessives should count as 'rich' and evoke a barrier, since it is morphologically overt. We showed in section (1.2) that this is not the case.

In this paper, we will adopt a parametric account of possessor extraction suggested in Gavruseva (1999, in progress) that incorporates the facts from Hungarian, Chamorro, and Tzotzil into the picture. Gavruseva observes that Szabolcsi's (1994) analysis essentially purports that possessors in Hungarian extract successive-cyclically out of DP. Szabolcsi motivates successive-cyclic movement of possessors by the need to turn D into a proper governor. On the more recent approaches to movement (the Minimalist Program of Chomsky 1995), successive-cyclic movement is motivated by the need to check some uninterpretable formal feature (categorial, phi-feature(s), case). In the Minimalist framework, uninterpretable features vary in strength: strong features induce movement in the overt syntax prior to Spell-Out, while weak features induce covert movement after Spell-Out. It follows from the checking theory of movement that the parametric variability resides in the types and relative strength of features that can be associated with functional heads or lexical items.

Gavruseva proposes that in languages with possessor extraction (Hungarian, Chamorro, Tzotzil), the functional heads projecting a DP structure have strong uninterpretable features. The feature strength of the lower Agr/D is derived from its composite set of features: phi-features (person and number) and case. Tne first step of possessor movement is driven by the need to check these [- interpretable] features. Gavruseva proposes that the higher D is endowed with a strong categorial N/D-feature that is checked via the second step of possessor movement to Spec,DP. She further extends Szabolcsi's ideas by suggesting that successive-cyclic movement of possessors in the DP is required to take place in overt syntax for possessor extraction to be a grammatical option in a language. The availability of overt DP-internal successive-cyclic movement is a point of crosslinguistic variability. Thus, the Germanic data can be plausibly explained in the following way: possessor phrases do move to the higher DP, as suggested in Kayne (1993); however, this movement step takes place in the covert component due to the weakness of the categorial N/D-feature. This explanation implies that successive-cyclic movement in the overt component of syntax (prior to Spell-Out) is a crucial syntactic condition for extraction of DP possessors.

2 Experiment

2.1 Subjects

12 English-speaking pre-schoolers (9 females and 3 males) participated in the experiment. All children attended a day-care facility at the University of Maryland. The children's age range was 4;5-6;0 (average age 5;4).

2.2 Experimental Design and Methodology

The target structures were subject and object long-distance *whose*-questions, shown in (11):

(11) a. Whose fish do you think is in the cradle?
b. Whose cat do you think Spiderman saved?

The control structures consisted of matrix object *whose*-questions and subject and object long-distance questions with bare wh-words and complex wh-expressions, shown in (12):

(12) a. Whose food did you like?
b. Who do you think is in the box?
c. How many stones do you think the baby has?

To elicit the target and control structures, we used an elicited production technique that engages children in a guessing game with a puppet (Crain & Thornton 1998, Thornton 1996b). An experimental set-up requires two experimenters. One experimenter acts out short stories with toy props, which create appropriate contexts for elicitation of investigated structures. The other experimenter plays a puppet character who hides while the stories are acted out and comes out at the end of each story to guess about things that happened. The child is asked to watch the stories and help the first experimenter to quiz the puppet. Before the child asks a question, he/she hears a lead-in statement given by the experimenter. Below we present a sample protocol and a sample lead-in:

Protocol:

In this story, we are going to have Grover, Cookiemonster and the Troll. Today they are going to a pet shop to get a pet fish for themselves. [The characters are shown to go to the make-belief pet shop]. They see three kinds of

fish there. Grover says, "Wow, I like that blue fish, I think I'm gonna get it for myself! I like blue color." Grover takes the blue fish. Cookiemonster says, "I like that orange fish, it looks just like the cookie I'm eating." He comes up and pick up the orange fish. Then the Troll says, "I'm going to get that purple fish. It matches the color of my hair." [The Troll character has purple hair in the story]. Then they all say, "Great, let's go home." The three of them return home. "Now we need to put our fish in the water but we forgot to buy the fish tanks!". Grover says, "I'll put my fish in the cradle." He pretends to pour water into the cradle and puts his fish there. Cookiemonster says, "I'll put my fish in this big frying pan." He does the same. The Troll says, "I'll put my fish in this tin can." (End of the story.)

Lead-in statement:

(13) EXP: So we know that somebody's fish is in the cradle. But ask the puppet whose he thinks. [3]
Target: Whose fish do you think is in the cradle?

Each child participated in two thirty-minute elicitation sessions. The interval range between the two sessions was from two to three weeks. A typical experimental session consisted of six to eight short stories. Each child was given an opportunity to ask approximately 20 questions with *whose*-phrases during the two sessions.

3 Results

The discussion in this section will be organized as follows. We begin by presenting an overview of the results, focusing on the most general trends and patterns in child data. Then we will discuss how question forms were distributed in the individual child data.

[3]Some researchers pointed out to us that the use of an elliptical *whose*-phrase in the experimenter's statement may have biased the children to produce split *whose*-questions. We disagree with their point. We believe that the use of an elliptical wh-phrase is felicitous in this discourse context, especially with a short pause after 'whose', although we concede that an elliptical *whose*-phrase may have increased the processing difficulty of the experimenter's statement. We will further comment on the possible influence of the lead-in on the children's responses in section 3.2.

3.1 Questions with Extracted Wh-possessors

The main finding of the experiment is that 11 of the 12 tested children produced long-distance questions with an extracted wh-possessor. The most common extraction pattern featured a 'bare' wh-possessor in the matrix COMP and a stranded possessed NP in the embedded clause. Consider some of children's productions in (14) which illustrate possessor extraction from subject position (the possessive morpheme *-s* was pronounced on the verb *think*, as reflected in the transcription):

Extraction of ''bare' wh-possessors in subject questions:

(14) a. *Who* do you think *-s* [θIŋks] *coin* is in the box?
(cf. Whose coin do you think is in the box?)
b. *Who* do you think *-s* [θIŋks] *feather* is blue?
(cf. Whose feather do you think is blue?)

Some children also extracted a 'bare' wh-possessor from object position. Two object extraction patterns were found in the data. In one structure, a possessed NP was stranded in the base object position. In another structure, a possessed NP was stranded in the domain of the medial COMP. Consider the data in (15):

(15) a. *Who* do you think *-s* Spiderman saved *cat*?
b. *Who* do you think *-s sunglasses* Pocahontas tried on?[4]

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[4]Some researchers pointed out that children's non-adult *whose*-questions may not be long-distance structures at all but matrix questions, with *who do you think* functioning as a possessor DP. On this approach, children's subject questions, like "*Who* do you think *–s fish* is in the cradle?" should be analyzed as in (i):

(i) $[_{CP}\ [_{DP}$ Who do you think$[\ _{D}$'s $[_{NP}$ fish$]]]\ [_{IP}$ is in the cradle$]]$?

There is evidence in our data that casts doubt on this approach. For example, if questions such as '*Who* do you think *-s sunglasses* Pocahontas tried on?" were in fact matrix questions, we would expect 4 to 6 year old children to produce them with the subject/aux inversion, as shown in (ii):

(ii) $[_{DP}$ Who do you think $[_{D}$'s $[_{NP}$ sunglasses$]]]$ *did* Pocahontas try on?

All children in our study had subject/aux inversion firmly acquired at the time of the experiment. However, none of them produced questions as in (ii).

Along with the patterns in (14-15), we attested a few questions in which *whose* was extracted. However, these questions were scarce in the data as compared to the questions with an extracted wh-possessor *who*. Consider the examples in (16):

(16) a. *Whose* do you think *ball* went in the cage?
b. *Whose* do you think *lunch* the baboon made?
c. *Whose* do you think *hat* is this, on the table?

In our discussion, we will refer to the question forms in (14-16) as *split whose-questions*, which we intend as a general descriptive term for the children's non-adult questions.[5]

3.2 Distribution of Split *Whose*-questions in Child Data

Let us now consider the distribution of the main split patterns in the individual child data. Recall that our prediction was that children should either produce pied-piped *whose*-questions or they should obligatorily extract a wh-possessor. The logic of the Subset Principle rules out optional possessor extraction as a child's initial hypothesis. The distribution of *whose*-questions in Table 3 below shows that only Mary (4;11), one of the youngest children in the study, consistently produced adult-like *whose*-questions. Two six-year olds, Matt and Mandy, produced only split *whose*-questions. The production data from these children were consistent with our predictions. The rest of the children produced both pied-piped and split *whose*-questions. Thus, the data from nine children do not support the prediction that English-speaking children should not go through a developmental stage at which a pied-piping option alternates with possessor extraction. Table 3 also shows that the split form containing *who* in COMP was more frequent in the data than the form containing *whose* (38% vs. 7%). Consider Table 3:

[5]There is evidence in the data that suggesting that *–s* on *think* (pronounced as *thinks* by the children) is indeed related to possessor extraction and is not some sort of an agreement error caused by the lead-in statement that contained an inflected verb *thinks* (see ex. 13). Recall that our experimental design included long-distance controls. Their elicitation also required the use of *thinks* in the lead-in. However, no child said *thinks* when producing questions as in 12(b,c).

Children	Extrac-tion of *who*	Extraction of *whose*	Adult-like	Total	Other
Mandy	24	1	0	25	10
Gab	7	-	3	10	7
Sandra	8	-	8	16	16
Jane	6	1	4	11	48
Matt	3	1	0	4	41
Peter	4	1	1	6	46
Meg	3	-	17	20	7
Tori	2	4	9	15	14
Kate	1	1	10	12	14
Sage	1	-	8	9	22
Tonya	-	2	11	13	10
Mary	-	-	13	13	15
Total	59 (38%)	11 (7%)	84 (55%)	154	250

Table 3: Questions with extracted *who* and *whose* vs. adult-like questions.

What also needs to be noted about Table 3 is that there is a great deal of variation in the number of *whose*-questions produced by each child. The total number of *whose*-questions fluctuated in the individual child data because the children often responded with alternative question structures in response to the experimenter's lead-ins.[6] As a result, the actual number of *whose*-questions produced by some children is much lower than 20 (a targeted number in the experiment).[7]

[6]The most common alternative responses to the lead-ins with *whose* consisted of matrix *whose*-questions and long-distance questions with other wh-words (e.g. *who, which N*, etc.). For example, instead of producing a target question, like "Whose bear do you think the witch stole?", the children responded with the structures as in (i):

(i) a. Who do you think the witch stole?
b. Whose bear did he steal?

In Table 3, children's alternative responses are grouped under the category 'Other'.

[7]A low number of *whose*-questions produced by Peter (5;6), Matt (6;0), and Sage (5;2) may indicate that these children had greater difficulty in piecing together these questions from the experimenter's lead-in.

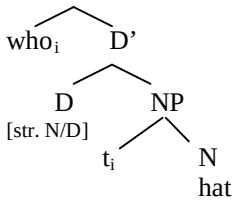
4 Analysis

In this section, we will address two issues: (a) the derivation of split *whose*-questions with *who* in the matrix COMP; (b) the syntactic status of the *–s* morpheme in the domain of the medial COMP.

4.1 Possessor Extraction in Child English

We suggest that children's split long-distance *whose*-questions are derived via extraction of the wh-possessor *who* from the DP. In a nutshell, our proposal is that *who* can extract in child English because the specifier of the DP can function as an A-bar peripheral position. Recall that on Abney's (1987) and Kayne's (1993) analyses, the Spec of DP in adult English is an A-position, where possessor noun phrases are marked for case. Abney assumes that possessors are base-generated in Spec,DP, whereas Kayne takes the Spec of DP to be a derived position headed by a [+definite] determiner. In section 1.3, we suggested that wh-possessors must move to an A-bar position, for extraction to be a grammatical option. To account for possessor extraction in child English, we appeal to the UG options and suggest that some English-speaking children's grammars allow possessives to project from a null determiner, much in the same way as in the grammars of Chamorro, Hungarian, and Tzotzil. On this approach, possessive phrases in child English may have the following underlying representation:

(17) DP (child English only)



We follow Radford (1990) in assuming that possessor phrases in child English originate in the specifier of the possessed NP and undergo movement to the Spec,DP. However, unlike in adult English, the D head in (17) is not endowed with an uninterpretable case feature (say, [+genitive]), but rather bears a strong categorial [N/D feature] that propels overt possessor movement to the Spec,DP. The structure in (17) suggests that the difference between child and adult grammars is not in the structural representation of possessive phrases. Possessive phrases project to DP in the grammar of young

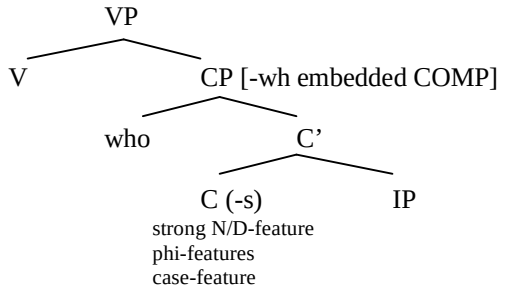
children and adult speakers. Rather, the difference resides in the fact that some children utilize a UG option of projecting possessives from a null D. The strong N/D-feature on D triggers possessor movement to an A-bar position, consequently extraction out of the DP becomes a grammatical option. This reasoning implies that the wh-possessor *who* is drawn from the lexicon with a set of features, for example, [3rd person], [singular], [+genitive], [+wh], interpretable N-features, which need to be checked in the domain of the appropriate functional head. (17) shows that *who* checks only its N/D-features in the DP. The relevant question at this point is in what projections a wh-possessor *who* checks its case and phi-features (assuming that a [+wh] feature is checked in the matrix COMP).

4.2 The Status of the Morpheme –s in Split *Whose*-questions

This section aims to provide an analysis for the morpheme *–s* in the medial COMP domain of split *whose*-questions. The line of analysis that we developed for possessor extraction in child English left us with the question concerning a functional domain, where *who* can check its uninterpretable phi-features and a case feature. We propose that the embedded COMP in child English serves as such an alternative domain. The structure in (18) captures the details of our proposal:

Feature-checking in the medial COMP:

(18)



The structure in (18) shows that a wh-possessor *who* extracts successive-cyclically through the intermediate COMP, where it checks its uninterpretable features prior to Spell-Out. We follow Fanselow & Mahajan (1996) in suggesting that successive-cyclic movement through the embedded COMP is driven by the uninterpretable N/D-feature on the complementizer C. Since the N-features of nominals are [+interpretable], they can enter into a checking relation with the strong N/D-features on the functional heads more than

once (Chomsky 1995), therefore a wh-possessor *who* is a good candidate for checking an N/D-feature on COMP. The morpheme *–s* on *think* should then be viewed as a morphological reflex of this feature checking operation. Thus, *-s* can be analyzed as a complementizer clitic that is spelled-out at PF on the matrix verb *think*.[8]

5 Concluding Remarks

One of the main findings of the experiment is that some English-speaking children go through a developmental stage which attests the knowledge of a less restrictive Grammar Type B (a Hungarian-type of grammar) that allows optional extraction of wh-possessor phrases. This developmental fact is not predicted by the Subset Principle that requires the choice of a more restrictive grammatical option on learnability grounds. Thus, on the face of it, the data suggest that the Subset Principle does not shape the developmental path of the acquisition of *whose*-questions. However, caution needs to be taken in interpreting the child data as evidence against the Subset Principle *per se*. One other possible interpretation of the results could be that the subset/superset relations is not the best way of capturing the differences in possessor extraction options between different grammar types. Although we did propose an account of possessor extraction that rests on one property of possessive phrases (namely, the availability of successive-cyclic movement in the DP), the crosslinguistic facts are more complex. The subset/superset relations may exist within a single language: in Hungarian, possessors obligatorily extract if D is null (Szabolcsi 1994); in German prepositional possessor phrases (as opposed to possessor-DPs) can be optionally extracted (Pafel 1995). Thus, an array of crosslinguistic differences in possessor extraction may not be reducible to a single feature value (strong vs. week N/D-feature). In the acquisition literature, however, the Subset Principle refers to the selection of a single, most restrictive parametric value by the child (Berwick 1985). Future acquisition research should shed more light on this issue by studying the development of questions with wh-possessives in children of various linguistic backgrounds.

[8]This proposal echoes Thornton's (1995) analysis of the medial wh-questions (e.g. *Who* do you think *who* is in the box?) in that it argues that the steps of a successive-cyclic derivation can be overtly spelled-out in some English-speaking children's grammars.

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