The clausal left periphery in child Spanish and German

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Abstract

Evidence from child language development supports the position that overt subjects in Southern Romance languages are left-peripheral, Topic-Focus constituents. Specifically, overt subjects begin to be used at the same time as other less controversially left-peripheral, Topic-Focus constituents, such as fronted objects and wh-questions. However, this interpretation of the data would be much more compelling if it could be shown that these constituents do not emerge at the same time in the speech of children learning languages in which overt subjects are obligatory and largely independent of discourse considerations, such as German. To this end, we examined the speech of three longitudinally studied Spanish-speaking children, Carlos, Eduardo and Graciela, and the speech of two longitudinally studied German-speaking children, Simone and Caroline. We also examined the German data of Katrin and Andreas, which was collected on a single day for each. While the Spanish-speaking children begin productively using overt subjects, fronted objects and wh-questions at a statistically similar point in development, the German-speaking children's data show that overt subjects begin to be used significantly earlier than do fronted elements and wh-questions. This supports the argument that child Southern Romance and child German are different with respect to the timing of the development of these constituents. We believe that this reflects the children's early knowledge of the structure of their target adult languages, which in the case of Southern Romance, includes left-peripheral, discourse-sensitive subjects.

1. Introduction

Much work in formal syntactic theory currently views the left edge of the clause as a principal locus of the interface between discourse pragmatics and syntax. Studies have linked discourse information regarding temporal interpretation to the clause through Complementizer Phrase (CP) projections (e.g., Den Besten 1983, Guéron and Hoekstra 1995), while syntactic accounts of the clausal representations of topic and focus have also relied heavily on functional projections at the left edge of the clause (e.g., Giorgi and Pianesi 1997, Ordóñez 1997, Rizzi 1997, Zubizarreta 1998). Because preschool age children have difficulty using discourse-sensitive constructions in their early production and comprehension (e.g., Avrutin 1994, Grinstead 2004, Schaeffer 2000, Thornton and Wexler 1999), the left edge of the clause is particularly interesting as a domain of inquiry for child language development inasmuch as it may tell us something about how the two mental domains of syntax and pragmatics interact.

In the current study, we investigate children's use of left-edge constructions in two languages which differ in that they syntactically represent overt clausal subjects primarily as a function of discourse, as in the case of Spanish, or primarily as a function of finiteness, as in German. In both languages, overt subjects may be left-peripheral constituents. In Spanish, it has been argued that with few exceptions, overt subjects are positioned in the discourse-sensitive, left edge of the clause (Ordóñez 1997, Ordóñez and Treviño 1999). In contemporary generative accounts of German, the picture is more complicated. The predominant account is that main clauses are underlyingly SOV, as are all finite subordinate clauses, with the verb moving to second position or "V2"; which is taken to be the head of CP. Then, any one of a variety of discourse-sensitive fronted constituents may move into 1st position, which is assumed to be the specifier of CP Koster 1975, Baltin 1982). If none of these discourse-sensitive constituents moves into first position, then the subject moves into first position. The movement of the subject may be a function of discourse, in which case it is frequently doubled with a resumptive pronoun, however most commonly there is no discourse-sensitive information associated with the subject. Rather, its movement to first position appears to be a movement of "last resort" in the sense of Chomsky (1995) and it occurs with finite main clause verbs. Crucially, with the exception of the narrow pragmatic register which allows Topic Drop, null subjects are not a grammatical option in German. For example, in the first 200 utterance produced by the adults in the Caroline corpus of the Powers, Weissenborn, Klein, Behrens Miller (2001) Study, 196 of 200 non-imperative verbs (98 %) occur with an overt subject. In contrast, subjects in Spanish are fundamentally null (80 % of verbs occur with null subjects in the adult oral language, according to Bel [2003]),

with overt subjects only being used to signal a change in the subject's referent.

In general then, left-edge subjects in German are in the left periphery, but are not overt/null as a function of discourse. Left-edge subjects in Spanish are also in the left periphery, but occur as overt/null as a function of discourse. This set of circumstances allows us to ask the question of whether those regions of the clause which are sensitive to discourse become available to the child at the same time in spontaneous production or whether discourse-sensitive and discourse-insensitive constructions seem to arise at different moments. If they arise at different moments, it supports a view, such as the one put forth in Grinstead (2004), that children's syntactic competence is essentially intact from before the time that they become able to take advantage of discourse-sensitive information for producing discourse-sensitive syntactic constructions. To the contrary, i.e., if both discourse-sensitive and discourse-insensitive constructions become available at the same time, it supports a view that syntactic constructions develop in children's grammars independently of their ability to use discourse-sensitive information.

In support of the former position, Grinstead (2004) showed that very young child speakers of Catalan, Spanish and Italian fail to use overt subjects in their spontaneous production and that they begin to use overt subjects at the same point in development at which they begin to use other, less-controversially discourse-sensitive, syntactic constructions, such as wh- questions and fronted objects (both focused objects and clitic left dislocations). This phenomenon was argued to be the result of children assuming that their interlocutors share their discourse pragmatic presuppositions and the account was argued to support adult syntactic theories which take (especially pre-verbal) overt subjects to be CP constructions (e.g., Ordóñez 1997, Poletto 2000, Zubizarreta 1998, Zagona 2002). The account predicts, however, that in languages in which the occurrence of subjects as overt is fundamentally not a function of discourse, such as German, that the emergence in spontaneous production of overt subjects should be independent of the emergence of constructions which are discourse-sensitive, such as fronted elements (other than subjects) and wh- questions.

The main objective of this study is to test the prediction of independence of emergence among overt subjects, wh- questions and fronted elements in child German and Spanish. However, there are other questions which need to be answered first. In Grinstead (2004), the argument was made primarily on the basis of four longitudinallly studied Catalan-speaking children, while the sparse Spanish data studied was largely uninformative. In the present article, we will ask the same question regarding the simultaneous emergence of the three constructions addressed in Grinstead (2004) for Catalan, but this time for Spanish with a much larger data base. Also, there have been doubts expressed in the literature regarding the existence of a No Overt Subject Stage in child Spanish.

Bel (2003) has argued that the children she studied used overt subjects from the very beginning, which raises the question of what the "very beginning" is. To answer this question, we will compare the 3 Spanish-speaking children of Grinstead (1998) to the one publicly available child studied in Bel (2003) and compare their mean lengths of utterance in an attempt to shed some light on the issue.

Before describing the first of our three studies, we will first briefly summarize what is theoretically at stake with respect to adult Spanish and Catalan and lay out our assumptions regarding the representation of finiteness and discourse sensitivity in German clause structure. We will then address arguments presented in Bel (2003) to the effect that there is no early absence of overt subjects in child Spanish and Catalan.

2.   Overt subjects as left peripheral constituents

Ordóñez (1997) proposed that overt subjects in Spanish, Italian and Catalan are constituents of the left periphery or Complementizer Phrase (CP) and that they are not, as traditionally argued (Belletti 1990, Cardinaletti and Starke 1996, Rizzi 1986), constituents of the Inflection Phrase (IP). Intuitively, this idea is appealing in so far as subjects are basically tacit in Spanish, unless discourse pragmatic considerations necessitate the use of an overt subject. In German, in contrast, overt subjects are gramatically required in all finite clauses. Related ideas are found in Zubizarreta (1998), who also argues that subjects are left-peripheral constituents in Spanish, however not in the Kayne-inspired framework adopted by Ordóñez, but rather in a framework which employs "syncretic" functional categories, whose category may vary as a function of the syntactic features located in their head. Both Ordóñez and Zubizarreta concur in the idea that discourse-sensitive subjects in Spanish occur in the specifier of a left-edge functional projection which serves as an interface between syntax and discourse, as represented schematically in Figure 1.

There has been considerable debate regarding these proposals in the intervening years, with some supporting the left-peripheral subjects argument (Poletto 2000, Zagona 2000), and others reaffirming the traditional position that subjects are IP constituents (Goodall 2002) and still others arguing that they are both CP and IP constituents, i.e. that they there are multiple subject positions (Camacho 2005b, Costa and Galves 2000 and Suñer 2003). While we will not attempt to recapitulate all of the data presented in the debate here, we will present what we feel are two of the most compelling pieces of evidence for the left peripheral subjects position from Ordóñez (1997) from ellipsis and negative quantifier extraction and refer the interested reader to the references just cited, for a fuller picture.
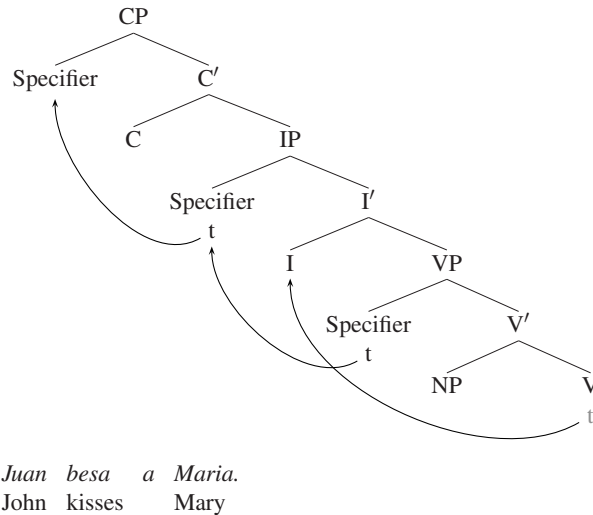
Juan besa a Maria.
John kisses Mary

Figure 1. *Left peripheral subjects in child Spanish*

Ordóñez (1997) points out, following Brucart (1987), that ellipsis treats the arguments above the discourse particle *también* 'also' as if they were all in one, IP-external, position, as illustrated in the following examples.

(1) **Unos libros** *le   dio   Juan a Pía y   unos cuadros*
     some books cl.-dat gave Juan to Pía and some pictures
     también [IP *le   dio   Juan a   Pía*].
     too   [cl.-dat gave Juan to Pía]
     'Some books gave Juan to Pía and some pictures too.'

(2) **A Pía** *le   dio   Juan unos libros y   a Sara*
     to Pía cl.-dat gave Juan some books and to Sara
     también [IP *le dio Juan unos   libros*].
     also   [cl.-gave Juan some books].
     'To Pía Juan gave some books and to Sara also.'

(3) **Él** *le   dio   unos libros a Pía y   Pepe también*
     he cl.-dat gave some books to Pía and Pepe also
     [IP *le   dio   unos libros a   Pía*].
     [cl.-dat gave some books to Pía].
     'He gave some books to Pía and Pepe did too.'

These facts are most easily interpretable if there is one preverbal position to which these elements move. Alternatively, it becomes necessary to postulate

different types of remnants (bracketed material) in the three cases, which would seem unparsimonious in the absence of evidence which might motivate such a distinction.

A related argument using facts from negative quantifier extraction makes the point more strongly. The following examples suggest that there is only one preverbal position in which negative quantifiers can occur and they can be either fronted direct objects, indirect objects or subjects.

(4)   ***Nada***   *les*   *debe Juan a   sus amigos.*
       nothing cl.-dat owes Juan to his friends
       'Nothing owes Juan to his friends.'

(5)   ***A nadie***   *le*   *debe Juan la   renta.*
       to no one cl.-dat owes Juan the rent
       'To no one does Juan owe rent.'

(6)   ***Nadie***   *le*   *debe la renta a   María.*
       no one cl.-dat owes the rent   to María
       'No one owes rent to María.'

The negative quantifier facts are strong evidence in favor the left-peripheral subject position because when a preverbal subject is used, there cannot be a fronted negative direct or indirect object, as in the following.

(7)   **Nada   Juan les   debe a   sus amigos.*
       nothing Juan cl.-dat owes to his friends.
       'Nothing Juan owes to his friends.'

(8)   **A nadie   Juan le   debe la   renta.*
       to no one Juan cl.-dat owes the rent
       'To no one Juan owes rent.'

However these sentences improve with a postverbal subject, as in the following examples, suggesting that the preverbal versions above are ungrammatical because preverbal field can only host one element.[1]

(9)   *Nada   les   debe Juan a   sus amigos.*
       nothing cl.-dat owes Juan to his friends
       'Nothing owes Juan to his friends.'

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1. Postverbal subjects are somewhat difficult in this analysis. VOS subjects are focused and could be argued to be left edge constituents in some type of post-spell-out movement. VSO subjects, such as those above, may either be focused or presupposed. If presupposed, which seems acceptable, the existing accounts, e.g., Ordóñez 1997 and Zubizarreta 1998, do not appear to have a clearly "non-IP" means of accounting for them.

(10) *A   nadie   le   debe Juan la   renta.*
      to no one cl.-dat owes Juan the   rent
      'To no one Juan owes rent.'

These facts suggest that there is a single preverbal position that can be occupied by negative quantifier objects and preverbal subjects and that it cannot be shared. This supports the idea that preverbal subjects are in a focus or topic position.

While it may turn out, as has been argued, that there is more than one syntactic position for subjects in Spanish, we would like to contribute to the existing debate by suggesting that at least one of the primary positions is likely to be highly discourse-sensitive because children simply fail to use them, in much the same way that they fail to take their interlocutors perspective into account in other discourse-sensitive constructions cross-linguistically.[2] However, before we turn to a consideration of the child data, we will lay out our assumptions regarding the clause structure of adult German.

3.   The left periphery in adult German

The fundamental property of German clausal syntax that we will be concerned with is the observation that overt subjects are obligatory in finite clauses and that their overt occurrence is relatively unaffected by discourse-pragmatic considerations, in contrast with Spanish. Following Koster (1975) and Den Besten (1977), we assume that the *position* of overt subjects may be affected by discourse pragmatics, inasmuch as the subject itself may be topicalized, in which case it will occur in first position, with special intonation and an optional resumptive pronoun. Alternatively, the subject's position is indirectly affected by whether some other element is moved to first position for discourse-pragmatic reasons. If this occurs, the subject will remain in a structurally lower position (the specifier of IP on some accounts).

With respect to the subject's overt occurrence, it may only fail to be overt in a very narrow, pragmatically conditioned register which gives rise the Topic Drop phenomenon (Thrift 2001, Haegeman 1997, Rizzi 1994 and Cardinaletti 1990). While there is a sense in which the difference between the two grammatical options (Spanish null subjects and German topic drop) could be viewed as a matter of degree, there is nevertheless a fundamental difference between grammars which do not provide subjects except where needed (Southern Romance)

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2. For example, children overuse pronouns as in 'Where is *he*?' when there are four possible singular, male referents – perhaps uttered during a game of hide-and-seek. Another example is the overuse of definite articles as in 'Where is *the* dinosaur?' uttered by a child standing in the middle of a room strewn with toy dinosaurs.
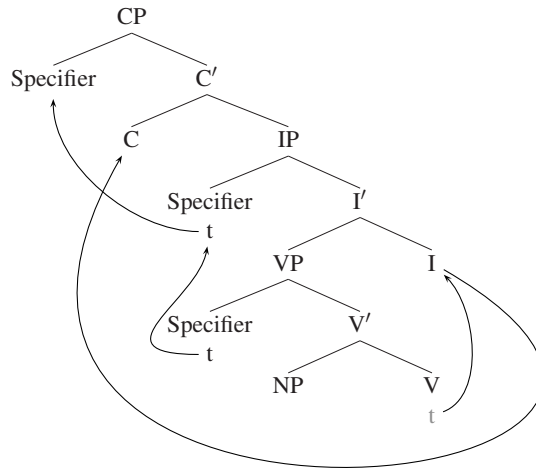
Johann küsst Maria.
John kisses Mary

Figure 2. *The finite main clause in German*

irrespective of register, and a grammar which always provides them, except in an informal pragmatic register which allows their omission (German). We take this distinction between German and Spanish to stem from fundamental properties of the two grammatical systems which children appear to apprehend from their earliest two-word speech.

Though our argument is fundamentally about the overt vs. null subject distinction between the two languages, for concreteness, we will adopt the standard assumptions of mainstream Generative Grammar regarding German clause structure, remaining largely agnostic as to the precise details. To wit, subjects originate in the specifier of VP, along the lines of the VP-internal subject hypothesis (Koopman and Sportiche 1991), and that they then raise to the specifier of the IP. This is where they remain in finite main clauses, unless nothing else moves to the first position (specifier of CP in contemporary formulations), in which case the subject moves to the specifier of CP, as in Figure 2. This kind of default movement has been characterized by Chomsky (1995) as following a principle of "Last Resort".

Most importantly for our purposes, the subject in German is almost always overt in finite, main clauses, though its position may vary as a function of the V2 phenomenon.

4.   Study 1: MLUw and the No Overt Subject Stage

Before we turn to our comparison of the emergence of overt subjects and other left-peripheral constituents in Spanish and German, we will address counter-arguments presented in Bel (2003) to the effect that there are overt subjects in another Southern Romance child language, Catalan, from children's earliest utterances, contra Grinstead (2004).

In Bel (2003), the two children whose data is studied in detail, one Spanish-speaking child (Maria of the López-Ornat corpus, López-Ornat 1994) – the other Catalan-speaking (Júlia, from Bel 2001), are shown to use overt subjects in their earliest recording sessions. Bel also demonstrates that, averaged over 6–12 months (between 1 year, 6 months of age and two years, 8 months of age), three child Spanish-speakers and three child Catalan-speakers use the same percentage of overt subjects as adults. However, she then admits that this is likely irrelevant to whether there is an initial absence of overt subjects (Bel 2003: 7). This is taken by Bel as counterevidence to the claim that there is an early period in child Catalan and Spanish in which overt subjects are not used.

These observations, however, do not take into account the possibility that the earliest observations in these two corpora may have been made at a point in the grammatical development of the children *after* they had already finished passing through the "No Overt Subject" stage. Because our claim is fundamentally a grammatical and not a chronological claim about child Catalan and Spanish, the standard measure of linguistic development *Mean Length of Utterance* (MLU), developed in Brown (1973), should show whether the children studied by Bel are more advanced than the children studied in Grinstead (2004) when they began using overt subjects. Because Júlia's Catalan data is not publically available, we will compare the Spanish-speaking data of Grinstead (2004) to the Spanish speaking data of López-Ornat (1994).

We now compare the level of linguistic development of María of the López-Ornat (1994) data base, used by Bel (2003), with the Spanish-speaking children of Grinstead (2004) in order to determine whether María may have been beyond the No Overt Subject Stage at the point at which she began to be studied.

4.1.   Methods

4.1.1.   Participants.   Eduardo, Carlos and Graciela are three working class, monolingual Spanish-speaking children, being raised at home (not in daycare) in Mexican immigrant communities in the U.S. by either their mother (Carlos and Graciela) or both their mother and father (Eduardo). All children were oldest siblings and by the end of the study, only Eduardo had a younger sibling. Both Graciela and Carlos were only children. The children were visited weekly

between the ages of roughly a year and a half and two and a half (1;4–2;6) and monthly for roughly another year (2;6–3;9).[3] Each child was recorded for roughly 1 hour approximately 50 times during this period: Carlos (50), Eduardo (41) and Graciela (54).

4.1.2. Procedures. As in López-Ornat's (1994) study of María, the children's spontaneous speech data was transcribed by native Spanish-speakers. The utterances produced by the children which we considered for this study included spontaneous utterances with verbs only (no repetitions, song lyrics, etc.) that were reasonably interpretable. We excluded clear cases of "chunking" or lexicalized, unproductive expressions and we excluded imperatives.

To insure that constructions were not lexicalized, unproductive expressions, we counted only those which did not appear repeatedly produced with the same lexical elements. For example, In the speech of two of the Spanish-speaking children, Eduardo and Carlos, there is an early stage when they produce only one wh-question *¿Ontá?* 'Where is it?' with the 'it' being a null subject. Later, they begin to use overt subjects with these questions, and finally they begin to vary the verb and the wh-pronoun. In these cases, we did not count wh-questions as being part of the grammar until the verbs and the wh-pronouns had begun to vary.

However, not all of the children's wh-questions appeared to develop in the same way. The wh-questions in the speech of the third child, Graciela, did not emerge in the way just described. Her first wh-question was *¿Quién se cayó?* 'Who fell?', which occurred in the same recording session with *A dónde va?* 'Where is it going?'. Five sessions later she produced *¿Dónde pongo?* 'Where do I put it?' and *¿Cómo va?* 'How does it go?'. None of these questions seem like lexicalized forms, especially because she does not repeat any of them, as the other children do. Consequently, 'Who fell?' was taken to be Graciela's first question.

Further, with respect to the fronted objects used by the Spanish-speaking children, there did not appear to be repeated, unanalyzed forms in any of the children's speech. Rather, they appeared to be used in a contextually appropriate, adult-like fashion the first time and then not repeated, at least in the data collected. For example, Carlos's first fronted object was at 2;2.07 when he said *Esta, la vi.* ('This, I saw.'). The next fronted object occurs a week later (2;2.19) when he says, *Agua, dio.* ('Water, it gave.'). These first two fronted objects oc-

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3. For further detail on data collection, see Grinstead (1998, 2004). The recording sessions for the three children were not all transcribed for the studies in Grinstead (1998, 2004), in which samples of the data were examined, but all 145 hours are now transcribed and are considered in the current study.

cur with different verbs and are not repeated and thus, *Esta, la vi.* was counted as the first fronted object.

We hasten to point out that the term "fronted object" is used to subsume both clitic left dislocation and focus movement constructions (See Rizzi 2000 for a discussion of the differences). Though each construction has its particular properties, they share the feature of being discourse-sensitive: discourse-old information is fronted in the case of clitic left dislocation and non-presupposed, new information is fronted in the case of focus constructions. We analyze them together because the one strictly syntactic means of distinguishing the two constructions from a transcript is the presence of a clitic in the clitic left dislocation construction and its absence in the focused object construction. Because children of the age in question are known to omit clitics, independently of this construction, we simply refer to them as "fronted objects".[4]

In the German data, the developmental pattern of subjects, fronted objects and wh- questions followed the pattern of early lexicalized utterances being replaced by a more varied, apparently productive array of constructions, and the productivity criteria mentioned above applied more straightforwardly.[5]

4.2. Results

We now turn to the results of our comparison of mean length of utterance values, calculated in words (MLUw), for the Spanish-speaking children in the recording sessions in which they produced their first overt subject. In Table 1 we see the MLUw measurements for the three Spanish-speaking children of Grinstead (2004) and for María of López-Ornat (1994) in the recording session in which they produced their first overt subject.

Conventionally, MLUw is calculated by taking the first 100 utterances, beginning on the second page of a transcript, and counting the number of words per utterance. The total number of words for those 100 utterances is then divided by the number of utterances. To have more reliable measures, the MLUw measures in Table 1 are given, taking into account *all* of the utterances in the children's recording session, not just the first 100. Following convention, all apparent ritualized expressions (e.g., woof-woof or *guau-guau*) are counted as one word. Repeated expressions such as 'no, no, no, no, no' are counted as five words, as are repetitions of adult utterances. Finally, clitics are not counted as

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4. See Grinstead (1998, 2004 for a more detailed discussion).

5. A question when using spontaneous speech data of young children is how much of their unintelligible speech could represent important syntactic data that was simply too phonologically opaque to be included in the analysis. This is one of the inherent difficulties of this kind of research and it is the reason why comprehension studies must follow up the kind of study presented here.

Table 1. *Spanish-speaking children when they began using overt subjects*

Child	Age	MLUw	Words	Utterances
Carlos	1;10.13	1.37	222	161
Eduardo	2;9.10	1.98	325	164
Graciela	2;1.08	1.29	137	106
Total			684	431
Average		1.55		
María	1;07	1.93	1180	612

separate words, whether enclitic or proclitic. This last convention is to make our results compatible with those of Bel (2001, 2003), who appears to have calculated MLUw in this fashion.[6]

Inspection of Table 1 shows that the MLUw measurements of Carlos and Graciela are lower than María's. Eduardo's MLUw, however is roughly the same as María's. Eduardo uses overt subjects, wh- questions and fronted objects before this point in his development, but not productively. Before this point, MLUw 1.98, his constructions appear to be more tied to specific lexical items. Thus Carlos and Graciela's data show that children can exit the No Overt Subject Stage and begin to use overt subjects at low MLUw values (1.29 and 1.37), while Eduardo's data shows that a child can also exit the No Overt Subject Stage at a higher MLUw (1.98). We can see this in these children's data because we can examine their production both before and after the emergence of overt subjects into their grammars. In the case of María, however, because she uses overt subjects in her very first recording session, her data is simply uninformative as to whether there exists a No Overt Subject Stage. She could have had no overt subjects at a linguistically earlier stage, as do Carlos and Graciela, or she could be just exiting the No Overt Subject Stage in her first recording session at MLUw 1.93, as did Eduardo.

Further, María's overall precocious linguistic development is supportive of our contention that she had already exited the No Overt Subject Stage at the point at which she began to be studied. In María's earliest recording session, she gives the general impression of being more linguistically sophisticated than the children in Grinstead (2004), in the sense that she uses a variety of tense morphemes and syntactic constructions not found until later in the development of the Grinstead (2004) children. For example, in her earliest recording session,

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6. Though we cannot find an explicit statement on this methodological point in Bel (2001, 2003), we have calculated some of the same files she gives MLU values for, and they come out more similarly when clitics are not counted than when they are.

at the age of one year, seven months (1;7), María produced two past tense, imperfect verb forms:

(11) Answering a question from her father:
Father: *¿Qué tenías cuándo estabas malita?*
'What did you have when you were ill?'
María: *Tenía pupa.*
'I had an owie.'

(12) Answering another question from her father:
Father: *¿Dónde te dolía?*
'Where did it hurt?'
María: [Pointing to her face] *Aía [= dolía] eta* [= *esta*] *pupa.*
'This owie hurt.'

No past tense verb forms of this kind are produced in the speech of any of the three children from Grinstead (1998) until significantly later in their grammatical development, nor are there analogous productions of this kind in any of the Catalan children studied in Grinstead (2004) during their No Overt Subject Stage. Rather, their productions are limited to imperatives, infinitives, bare forms and some apparently adult-like present tense forms.

Further, María produces several, albeit rudimentary, wh-questions and fronted objects already in this earliest recording session. This is consistent with the left-peripheral subjects hypothesis advocated here inasmuch as the hypothesis predicts the co-occurrence of overt subjects, fronted objects and wh-questions in development.

(13) A wh-question produced by María
Mother: *¿Te gusta el miau a tí?*
'Do you like the kitty?'
María: *Os'tá* [= *dónde está*] *e miau* [= *el gato*]?
'Where's the kitty?'

(14) Another wh-question produced by María
María: *Mamá á qué es?* [= *qué hora es?*] [% *señala el reloj*]
'Mama, what time is it?' [pointing at the clock]

(15) A fronted object
Mother: *Bueno, ¿y cómo sigue?*
'Okay, how's it going?'
María: [María points. She wants to paint.] *Este a pí* [= *pintar*].
'This, to paint.'

Table 2. *Catalan-speaking children when they began using overt subjects*

Child	Age	MLUw	Words	Utterances
Pep	1;10.6	1.53	891	582
Guillem	1;9.24	1.76	58	33
Gisela	2;1.23	1.45	64	44
Laura	2;4.11	1.44	223	155
Average		1.55		
Júlia	1;11.23	1.46		

None of the constructions shown here are present in the files of the Spanish-speaking children of Grinstead (1998) before they produce overt subjects, which is consistent with our contention that María has already developed beyond the No Overt Subject Stage in her earliest recording session. Further, María uses a high percentage of overt subjects in her earliest session (74 %, according to Bel (2003: 9, Table 5)). These facts are consistent with our hypothesis if we assume that María began to be studied after her grammar had advanced beyond the No Overt Subject Stage.

4.3.   Discussion

María's data, then, cited in Bel (2003) is not informative as to the existence of a No Overt Subject Stage in Spanish. A similar evaluation of Bel's claims for Catalan cannot be made, as the data for the one Catalan-speaking child she studied in detail (Júlia) is not publicly available. Consequently, the overall linguistic sophistication of Júlia in the earliest recording session given in Bel (2003) cannot be independently determined. However Júlia's MLUw (without the actual numbers of words and utterances) in the earliest file given in Bel (2003) appears very similar to the MLUw of the 4 Catalan-speaking children given in Grinstead (2004), as illustrated in Table 2.

Júlia's subject use in the earliest file given in Bel (2003) contrast with María's, in that, according to Bel (2003: 10), "… Júlia starts with a high proportion of null subjects." In fact, she produces one overt subject out of 13 utterances which contained verbs (7 %), according to Bel. In sum, Júlia's data appears identical to the recording sessions in which the child Catalan speakers in Grinstead (2004) began using their first overt subjects and consequently poses no challenge to the claim that there exists an early period without overt subjects in child Catalan.

In conclusion, the data presented in Bel (2003) as counterevidence to the claim that there is an early No Overt Subject Stage in child Southern Romance

does not falsify the claim. Specifically, an evaluation of the Spanish language data presented here shows that while children may transition from the No Overt Subject Stage to a stage in which they use overt subjects at different points in their grammatical development, there is no evidence that child Spanish speakers use overt subjects from the beginning of two word speech, as child speakers of overt subject languages, such as German and English, appear to. The Catalan data in Bel (2003) appears identical to the recording sessions in which the child Catalan speakers in Grinstead (2004) began using their first overt subjects and consequently poses no challenge to the claim that there exists an early period without overt subjects in child Catalan.

5. Study 2: wh-questions, fronted objects and overt subjects in child Spanish

As mentioned above, earlier work (Grinstead 2004) showed that overt subjects, wh-questions and fronted objects begin to be used at the same point in the spontaneous speech of four monolingual child Catalan speakers. In this study, we seek to determine whether child Spanish speakers also begin using wh-questions and fronted objects at the same time that they begin using overt subjects. If they do, it supports the position that overt subjects are left-peripheral constituents in Spanish.

5.1. Methods

The Spanish child language data considered in this study comes from Grinstead (1998) and includes 145 hours of transcribed spontaneous speech, collected over 2 and half years, transcribed by native speakers of Spanish. We considered the speech of all three children: Carlos, Eduardo and Graciela, covering roughly the same chronological ages for all, between 1;4 and 3;9. Constructions containing overt subjects, wh-questions and fronted objects were counted in the manner outlined in Study 1 above, with respect to productivity.

5.2. Results

To illustrate the statistical analysis used with the Spanish data, we will briefly describe how this was done in Grinstead (2004) for Catalan. The main finding in Grinstead (2004) was that in child Catalan there appears to exist a contingency among overt subjects, wh- questions and fronted objects. Table 3 shows near simultaneous emergence of all of these constructions.

Table 3. *The onset of left-peripheral constructions in child Catalan*

	Overt subjects	Wh-questions	Fronted objects
Gisela	2;1.23	2;8.0 $p<0.0001$ s	2;1.23 *Same session*
Guillem	1;11.13	2;3.28 $p =0.051$ ns	1;11.13 *Same session*
Laura	2;4.11	2;4.11 $p =0.596$ ns	2;8.30 *Same session*
Pep	1;10.06	1;11.06 $p = 0.248$ ns	1;10.06 *Same session*

In Table 3, we see the ages of onset for overt subjects, wh-questions and fronted objects. In the rightmost two columns, there is an additional piece of information. If the construction began to be used in the same session as overt subjects, "same session" is written. If there was a significant difference between the point at which the construction began to be used and the point at which overt subjects began to be used (wh- questions for Gisela is the only example), then the results of a binomial statistical test showing this difference are given. Otherwise, there is an insignificant difference given for the results of this test with 0.05 taken to be the level of significance.[7]

The binomial test used here to determine "closeness of onset" takes the number of occurrences of the construction at issue, for example wh questions, over the number of wh-constructions plus the number of overt subjects produced in the entire corpus by the child. Then this ratio is raised to an exponent corresponding to the number of occurrences of overt subjects between the first occurrence of overt subjects and the first occurrence of wh- questions.

For a concrete example, we turn to the new child Spanish data, illustrated in Table 4. In the 37 recording sessions of Graciela's, following her first use of an overt subject, there were 236 overt subjects and 43 wh-questions. Our calculation to determine the ratio of overt subjects to overt subjects + wh-questions would be $\frac{236}{236+43} = 0.85$. Between the first overt subject Graciela used and the first wh-question she used, there were eight overt subjects (across two recording sessions which covered about two weeks). To determine the probability that a wh-question could have been produced somewhere among those eight overt subjects, we calculate $0.85^8 = 0.27$, which is not significant. For fronted objects in the same child, the ratio of overt subjects to overt subjects + fronted objects was 0.84 and there were 40 overt subjects between the first overt sub-

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7. We thank William Snyder for his help with this calculation.

Table 4. *The onset of left-peripheral constructions in child Spanish*

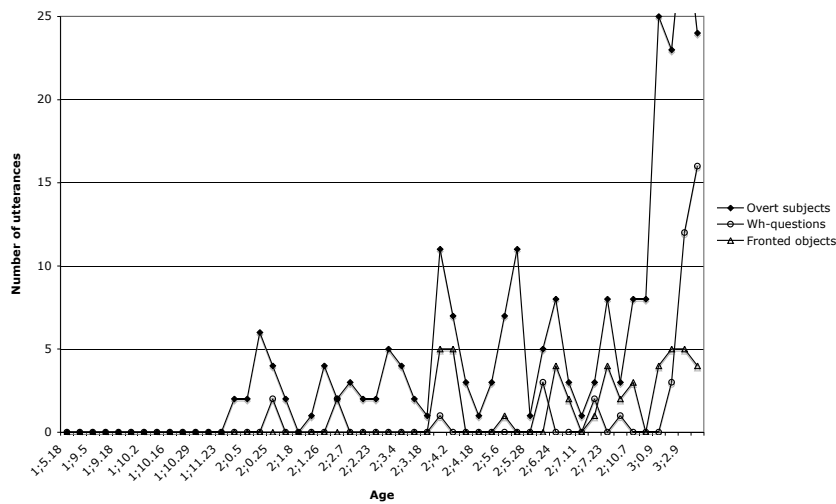|	Overt subjects	Wh-questions	Fronted objects
Carlos	1;10.13	2;9.15	2;2.07
		0.85^{103}, $p < .001$ s	0.66^{6}, $p = .08$ ns
Eduardo	2;9.10	2;9.10	2;10.28
		Same session	0.85^{13}, $p = .12$ ns
Graciela	1;11.29	2;0.25	2;3.25
		0.85^{10}, $p = .20$ ns	0.84^{40}, $p < .001$ s

Figure 3. *Longitudinal development of subjects, wh-questions and fronted elements in Graciela's data*

ject and the first fronted object. In this case, our calculation to determine close-ness of onset would be $0.84^{40} < 0.001$, which is significant. This shows that for Graciela there was a contingency between overt subjects and wh-questions, but that there was not such a contingency for overt subjects and fronted objects.

In Table 4, we can see that four of the six possible contingencies obtained between overt subjects and the other constructions considered and that all children had at least one of them.

In Figure 3, we see that in Graciela's speech, overt subjects and wh- questions arose at nearly the same time, but that fronted objects were significantly later. In Figure 4, we see that in the speech of Carlos, overt subjects and fronted objects began to be used at nearly the same time, but that wh- questions were significantly later.
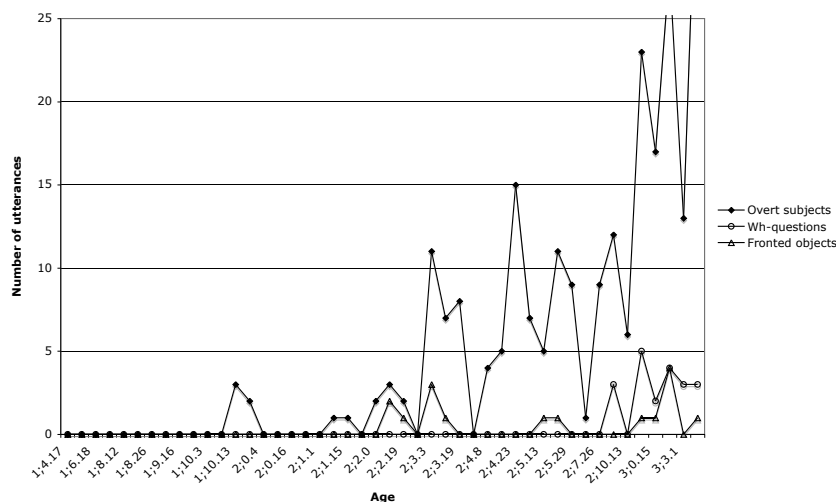
Figure 4. *Longitudinal development of subjects, wh-questions and fronted elements in Carlos's data*

In Eduardo's speech, illustrated in Figure 5, there were really two points at which the constructions arose. There was an early point at which various overt subjects began to be used with a single predicate *aitá (ahí está)* 'is there'. This corresponded to the point at which wh-questions with a single wh- word and a single verb *¿Ontá? (¿Dónde está?)* 'Where is X?' also began to be used with varying subjects. Similarly the fronted object *Este* 'this' was used with the question *Este, ¿ontá?* 'This, where is it?'.

A second point at which these constructions arose in his grammar came later, when the predicates and the subjects diversified, as illustrated in the following examples. The latter onsets are reflected in in Table 4, above, and also in the MLUw comparisons presented in Study 1 (see Table 1). However, we represented the earlier onsets in Figure 5, clustered around the 2;0 mark, because this "double emergence", both as lexicalized forms and then again as freely combining forms, given in the following examples, seems worthy of consideration.

Overt subjects

(16)   Eduardo (2;9.10)
        Yo   ya   voy   a   otro   parque.
        I   already am   going to   another   park
        'Now I'm going to another park.'
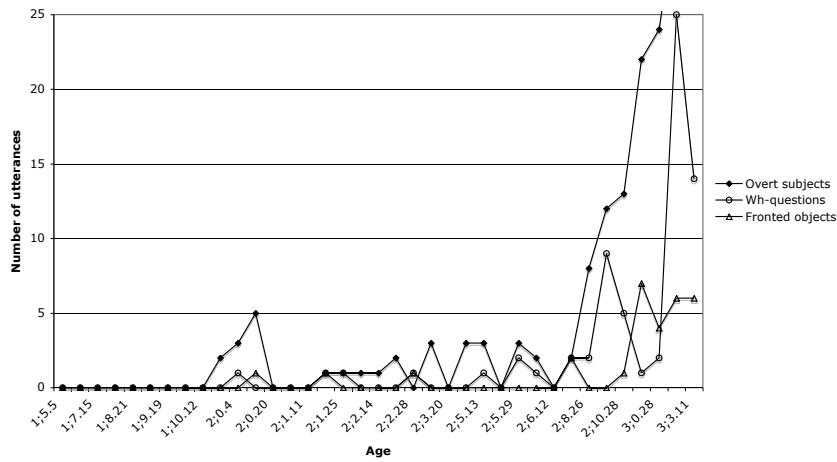
Figure 5. *Longitudinal development of subjects, wh-questions and fronted elements in Eduardo's data*

(17)   Eduardo (2;9.10)
        Se   cayó   el   carro.
        SE   fell   the   car
        'The car fell.'
(18)   Eduardo (2;9.10)
        ¿No   está   la   foca?
        not   is   the   seal
        'Isn't the seal here?'
        Wh-questions
(19)   Eduardo (2;9.10)
        ¿Dónde   pucha?
        where   pushes
        'Where does it push?'
(20)   Eduardo (2;9.10)
        ¿Quién   es?
        who   is
        'Who is it?'

Fronted objects

(21)   Eduardo (2;10.28)
        Esto   guardo.
        this   put away
        'This, I'll put away.'

5.3. Discussion

What we have seen is that for the three children studied there is a contingency either between overt subjects and wh- questions (Graciela), between overt subjects and fronted objects (Carlos) or among all three constructions (Eduardo).

We take these results to be evidence that overt subjects and other left peripheral constructions are linked in development. These facts are consistent with the hypothesis that overt subjects are left-peripheral, CP constituents in Southern Romance languages, such as Spanish. In what follows, we will see that this pattern is quite distinct from the child German pattern in which overt subjects significantly predate both wh-questions and fronted objects in both of the longitudinally studied children. In this way, the pattern just illustrated appears to be a language family-particular phenomenon and not common to all child languages.

It is interesting note in the data of Eduardo that even when he was still using apparently lexically-tied utterances, there was nonetheless a correlation of emergence of wh- questions, overt subjects and fronted objects. Of course this is the data of only one child, but it is intriguing to consider the possibility that even these lexically-tied utterances might nonetheless carry abstract syntactic features which license their production.[8]

6.   Study 3: wh-questions, fronted objects and overt subjects in child German

Wh-questions, fronted objects and overt subjects are all produced as a function of discourse pragmatics in Southern Romance, but this is not the case in German. Specifically, in German, overt subjects must be used in all finite clauses, outside of the very narrow pragmatic register, associated with Topic Drop. How, then, do these constructions develop?

Fortunately, a fair amount is known about the left edge of the clause in child German, due to the extensive debate in the eighties and nineties regarding the nature and existence of CP in child German, growing out of the observation that the German-speaking children studied do not appear to use the full range of left edge constructions in an adult-like way in their spontaneous speech early on. In this literature (e.g., Clahsen et al. 1995a; Clahsen et al. 1995b; Müller 1993; Penner, 1994; Penner et al. 2000; Penner and Weissenborn 1996; Penner et al. 2001; Poeppel and Wexler 1993; Weissenborn 1990, 1992, 1994; Weissenborn et al. 1995), the finding of relevance to our study is that there is an early absence of adult-like wh-questions and fronted objects, while overt

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8. As suggested in Culicover (1999) and Culicover and Nowak (2003).

subjects are used from the very earliest files of all children studied. Thus, the existing literature supports our hypothesis that overt subjects do not pattern with CP constructions in the development of child German. Nonetheless, in spite of this significant literature, there was not sufficient information provided to permit statistical analysis to determine whether the points of onset of these three constructions were close or disparate. Consequently, we examined the available data ourselves to determine the points of onset of these constructions in child German spontaneous production.

6.1. Methods

Our study looked at both the longitudinally collected data of Simone and Caroline (Powers et al. 2001) and the case study data of Andreas and Katrin (Wagner 1985). All were obtained from the CHILDES Data Base (MacWhinney 2000). With respect to the longitudinal data, Simone was recorded over the course of two years, three months (from 1;9 to 4;0), which included 71 recording sessions. Caroline was recorded over the course of three years, two months (from 0;10.0 to 4;0), which included 239 recording sessions. Regarding the case study data, Katrin was recorded for 3 hours and 22 minutes on a single day, when she was 1;5.15, providing an in-depth snapshot of the state of her grammar, while Andreas, similarly, was recorded for 3 hours and 33 minutes on a single day when he was 2;01.0.

The criteria for inclusion of an utterance in our analysis are the same as for Studies 1 and 2. With respect to the exclusion of imperatives, we should add that imperatives differ structurally from other types of utterances. Consider (22), for instance.

(22)   *Teddybär   kaufen*
         teddybear   buy-INF
         'buy (the) teddybear'

In (22), the verb is uninflected and no overt subject is required. Consequently, it was not always possible to determine if the child intended an imperative or not; however, they were excluded whenever it was reasonably certain that the child was giving a command.

6.2. Results and Discussion

Before presenting the actual ages of onset of the constructions, it is worthwhile to note that there are substantial differences in the Mean Length of Utterance values, Measured in Words (MLUw) at which the longitudinally studied children began to use each of the three constructions, as illustrated in Table 6.

Table 5. *The mean length of utterance, measured in words (MLUw), at onset of subjects, wh-questions and fronted objects for Caroline and Simone*

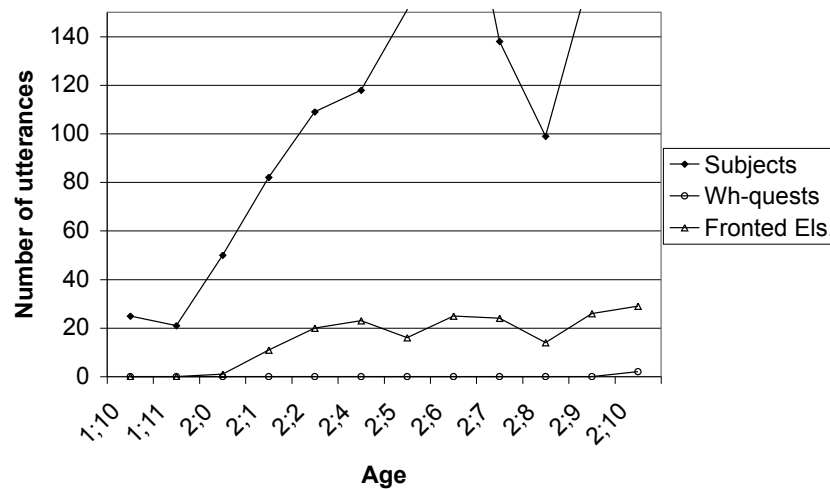|	Subjects	Wh-questions	Fronted objects
Caroline	1.36	1.66	1.69
Simone	1.45	2.65	1.86

Figure 6. *Longitudinal development of subjects, wh-questions and fronted elements in Simone's data*

In Table 5 we see that in both cases the MLUw values for the children's speech were much lower when they began using subjects than it was when they began using either of the other constructions. This basic pattern is consistent with our hypothesis regarding the early onset of overt subjects in German and the later onset of CP-related constructions such as wh-questions and fronted elements.

In Figures 6 and 7, we see the overall trend of development of the three constructions in the two longitudinally studied children, Caroline and Simone, and again we see that overt subjects begin to be used long before either fronted elements[9] or wh-questions.

In Figure 6, Simone's data, we see that the onset of wh-questions occurs much later (2;10.04) than do the onsets of subjects and fronted elements. In

9. In both Figures 6 and 7 we refer to "fronted elements" instead of only fronted objects because fronted objects as well as other fronted elements, such as adverbials, began to be used at the same time.
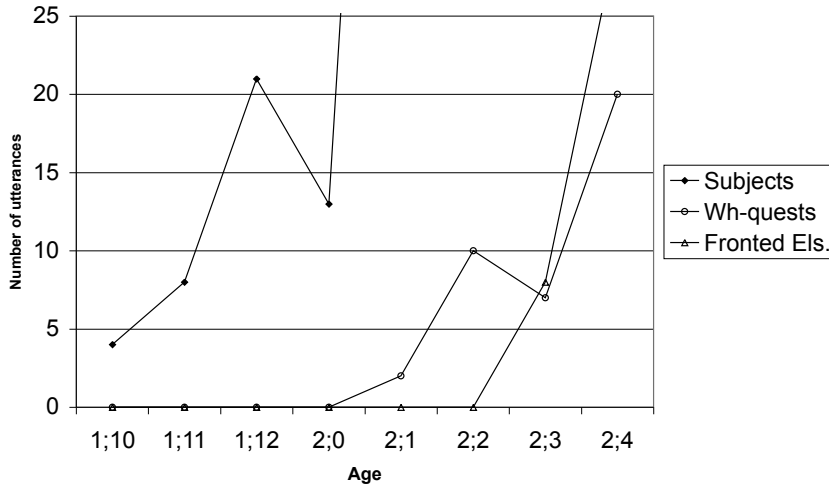
Figure 7. *Longitudinal development of subjects, wh-questions and fronted elements in Caroline's data*

Table 6. *Ages of onset of the three constructions for Simone and Caroline, with the results of the binomial tests*

	Subjects	Wh-questions	Fronted objects
Caroline	1;10.17	2;2.10 0.89^{125}, $p < .001$	2;3.0 0.72^{174}, $p < .001$
Simone	1;10.20	2;10.04 0.86^{350}, $p < .001$	2;01.16 0.70^{112}, $p < .001$

Figure 7, Caroline's data, we see the early onset of overt subjects, with hundreds of them being produced before the first fronted object or wh-question, both of which begin to be used at approximately the same time in the speech of Caroline. These figures contrast with Figures 3–5 for the Spanish-speaking children in which overt subjects begin to be used at the same time as either wh-questions, fronted objects or both.

Finally, we see in Table 6 that using the binomial test, described above, there is a statistically significant difference for both longitudinally studied children between the onset of subjects and the onsets of wh-questions and fronted objects.

In Table 6, we also see the calculations for each binomial test. Notice in Simone's data, for example, that though there were only three chronological

Table 7. *The ages and MLUw values for Katrin and Andreas for their single recording sessions*

	Age	MLU_w
Katrin	1;05.15	1.6
Andreas	2;01.0	2.35

months between the onset of overt subjects and the onset of fronted objects, there were 112 subjects produced before the first fronted object, which in combination with Simone's subject-to-fronted object ratio, demonstrates the improbability of their being any fronted objects produced in the intervening time. For the other comparisons, the difference is even more dramatic both in terms of the absolute time intervening between the onset of the constructions and in terms of the binomial test.

For the case study data of Andreas and Katrin, it was of course impossible to show differences in onset of the different constructions because each of their very large files was from a single day. Nonetheless, the fact that Andreas was eight months older and had a much higher MLU_w than Katrin when the data was collected, as illustrated in Table 7, and the fact that so much data was collected for each child, appears to offer a fine-grained snapshot of two distinct moments in the linguistic development of child German, particularly with respect to their use of the three constructions of interest.

Indeed, our examination of their data suggests that subjects were well-established in both of their grammars, including the younger child, Katrin's data. Similarly, both children appeared to use fronted objects in an adult-like way, as illustrated in the following examples.

Fronted objects.   Katrin (1;05.15) uses fronted objects with a variety of verbs and subjects.

(23)   Page 2, line 5
        Ei   isst   Papa
        egg   eats   Papa
        'Papa is eating an egg.'

(24)   Page 33, line 22
        Eine Puppe   darf ich haben
        a   puppet may I   have
        'I may have a puppet.'

(25)   Page 39, line 34
        Kerne   frisst   es
        nuts   eats   it
        'It eats nuts.'

(26)   Page 55, line 44
         Katze   sehe   ich
         cat   see   I
         'I see a cat.'

Andreas (2;01) also has fairly adult-like use of fronted objects and also uses them with a variety of subjects and verbs.

(27)   File 1, line 228
         Zwei   Teddys   habe   ich
         two   teddys   have   I
         'I have two teddys.'

(28)   File 2, line 393
         Carrerabahn   fahre   ich
         toy-car   drive   I
         'I'm driving a (toy) car.'

(29)   File 1, Line 841
         Mein   Hubschrauber   mache   ich   fertig
         my   helicopter   make   I   finished
         'I'm finishing my helicopter.'

Wh-questions.   Katrin uses a few questions, but in a formulaic manner. She uses 'what' and 'where' only with the verb *sein* (to be), although she is able to inflect the verb appropriately for the subject. The other question – 'What do you want?' – she addresses to all manner of objects (including her own feet, apparently), without altering the structure at all. The following is a complete list of her questions.

(30)   Page 11, line 19, and repeated several times
         Was   das   denn?
         what   that   then
         'What's that, then?'

(31)   Page 12, line 42
         Wo   ist?
         where   is
         'Where is (it)?'

(32)   Page 15, line 38
         Wo   sind   die   Ringe?
         where   are   the   rings
         'Where are the rings?'

The following example was repeated often and appeared to be a lexicalized expression.

(33)   Page 27, line 17 and Page 34, line 26 and Page 47 line 19
        Was   will   du,   Auto? / Eisenbahn / Fuss
        what   want   you   car   / train   / foot
        'What do you want, car / train / foot?'

Andreas uses very few wh-questions, all with *was* 'what'. He does not use multiple question words or multiple subjects/verbs.

(34)   File 3, line 15
        Was   ma(chst)   du?
        what   do   you
        'What are you doing?'

(35)   File 7, line 87
        was   is(t)   da   dann.
        what   is   that   then
        'What's that, then?'

Andreas also produces a number of forms with unclear interpretation, as in the following two examples.

(36)   File 6, Line 677
        Schenkst   du   mir   zu   Weihnachten?
        give   you   me   for   Christmas

The utterance in (35) could be either 'Are you giving me something/this for Christmas?' or 'What are you giving me for Christmas?' with a dropped wh-word. (36) could be another example of the same phenomenon, which has been noted elsewhere (e.g., van Kampen, 1997 and references cited therein), or it could be a case in which the short form of 'etwas' or 'something' is used and the auxiliary is missing.

(37)   File 8, line 357
        Papa   was   mitgebracht?
        papa   what/something   with-brought
        'What did Papa bring?' or 'did you bring something, Papa?'

   In summary, the case study data shows subjects and fronted objects being used in both the younger and older child, but wh-questions do not seem to be used productively in either of their speech samples. We take this to be supportive of our contention that subjects develop earlier than wh- questions in child German. With respect to fronted objects, it is harder to say. In the snapshots provided by these children, fronted objects are productively used, however there could have been an earlier period, not captured in this data sample, during which subjects were used and fronted objects were not yet productive.

The longitudinal data from Simone and Caroline, which both show precisely this pattern, suggest that this is likely to be the case for Andreas and Katrin.

6.3. Discussion

The spontaneous child German data shows, both from the relative differences in MLUw at onset of overt subjects, wh-questions and fronted objects, as well as the binomial measures of the distinct points of onset of these constructions, that overt subjects begin to be used significantly earlier than do either wh-questions or fronted objects. Further, the data from the two case studies, the older child Andreas and the younger child Katrin, show that overt subject begin to be used before wh- questions while the relative onsets of overt subjects and fronted elements cannot be determined. This data supports our argument that overt subjects in German do not pattern in child language development with discourse-sensitive constructions like wh-questions and fronted objects, as in child Spanish and Catalan. This supports our contention that overt subjects are fundamentally different in the two adult languages, and is consistent with an analysis of overt subjects in Spanish and Catalan as constituents which reside in the discourse-sensitive clausal left edge of Southern Romance, while subjects at the left edge of the clause in German are sensitive to V2 and finiteness, but only rarely to discourse pragmatics.

7. Conclusion

Summarizing, in this study we have presented further evidence for the existence of a No Overt Subjects Stage in child Spanish and have shown that putative evidence to the contrary from a child who uses overt subjects in her earliest file is explicable as a case of child who was grammatically quite developed, in spite of her young age (1;7), when her MLUw (1.93) was examined. This child, María, was clearly already developed beyond the No Overt Subject Stage. Two of the Spanish-speaking children presented in this study had MLUw values significantly below María's (1.29 and 1.37), while the third had roughly the same MLUw value (1.98) when they began using overt subjects. Consequently María's data does not contradict the existence of the No Overt Subject Stage and, in fact, cannot contradict it because we do not know if there exists an earlier period in her grammatical development in which she did not use overt subjects, though this seems likely.

   We then showed that data from the three Spanish-speaking children presented here confirmed the observation in Grinstead (2004) for Catalan, that overt subjects, wh- questions and fronted objects begin to be used in sponta-

neous production at the same point in development. Finally, we showed that the spontaneous speech data of four German-speaking children presents a much earlier use of overt subjects than of wh-questions or of fronted elements. These facts make the observations of simultaneity for Spanish and Catalan seem stronger, in light of how much larger of a difference there is in child German among these onsets, and they show how much children have learned about their target grammars before the age of 3.

In this study, we have attempted to provide the richest description possible of the development of three grammatical constructions in child German and Spanish. In so doing, we hope to have contributed to an understanding of the development of these child languages in particular and of child language development in general. Further, we have attempted to relate this description to a debate regarding the nature of the subject position in adult Southern Romance languages, including Spanish. Our contention is that, given the highly anaphoric and discourse-dependent nature of the subject position in adult Spanish and Catalan in combination with the fact that child speakers of all languages are known to assume that their interlocutors share their discourse presuppositions early on, we would expect child Spanish speakers to mostly use the noun phrase type that is most discourse-dependent and least informative in subject position – the null subject. Effectively, this is what we find in the No Overt Subject Stage. While this explanation of the child data seems natural in an adult syntactic model that assumes that overt subjects are discourse-sensitive CP constituents, it is rather difficult to explain in a model that assumes that they are IP constitutents, which are only sensitive to clause-internal considerations of finiteness.

Regarding the component of the Poverty of the Stimulus argument (Chomsky 1959) which asserts that children learn subtle properties of their target language at a very early age, our data show that even at MLUs below 2, children appear to be aware of whether their language is a null subject or an overt subject language and, by hypothesis, the location of overt subjects in the clause structures of their languages. Further, the constructions we examined all form part of a single constituent: the Complementizer Phrase, which is typically regarded as a syntagmatic or endocentric category, with a head, a complement and a specifier possible, and which passes basic syntactic tests for constituency (pronominalization, coordination, etc.). This is interesting because even the late acquisition of wh-questions and fronted objects by some of the children examined took place by 3;0 in all three languages. Thus, the children examined could be said to have developed "syntagmatic competence" for the Complementizer Phrase before three years of age. While this particular age seems somewhat arbitrary and there will certainly be variation across children, it has been claimed by some (Tomasello 2003) that such competence is not possible or has not been demonstrated before 3;0. Our evidence shows the contrary.

Looming in the background is the question of why left-edge syntax is not able to represent discourse-pragmatic information at this early stage in the first place. While research into the development of discourse-pragmatics has tended to show that children are initially unable to use pronominal elements of their grammars in an adult-like way (Avrutin 1997, Grodzinsky and Reinhart 1993, Schaeffer 2000), other research has shown that less discourse-sensitive aspects of pragmatics, such as pragmatic implicatures, seem to be understood by children as young as three years old, at least in the studies that have included sufficient context so as to produce valid measurements, e.g., Crain et al. (1996), Crain et al. (2000). Studies of children's abilties to comprehend other possibly pragmatic uses of syntax such as epistemic modals appear to show that children simply cannot use this knowledge before 4 years of age (e.g., Papafragou 1998, 2002). Theory of Mind, or a speaker's ability to take the perspective of their interlocutors into consideration, is clearly of relevance in all of these cases. The interaction of all of these domains of cognition will likely have to be examined simultaneously in single populations to get the clearest picture possible of how they interact. Hopefully, such research is not too far off in the future.

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