ON THE SYNTAX AND SEMANTICS
OF LD QUESTIONS IN CHILD FRENCH

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1. Introduction

Partial-Movement (PM) has been argued to represent a developmental stage in the acquisition of Long-Distance (LD) questions on the basis of English, Dutch and French elicited production data (Crain and Thornton (1998), Oiry and Demirdache (2007), and references therein). There are two competing analyses of PM in adult grammars: Indirect Dependency (ID) and Direct Dependency (DD). We claim that both strategies are attested in L1 French. We provide novel arguments for ID based on the syntax of exceptional LD yes-no/alternative questions in L1 French. We argue that children go through a stage where they appear to have the felicity conditions for scope-marking questions on the ID analysis, but not those of full movement/WH-in-situ, since they fail to produce questions in experimental contexts satisfying the felicity conditions of LD questions but crucially not those of scope-marking, on the ID analysis. We take this conclusion to provide strong evidence for an ID strategy in L1 acquisition.

2. Wh-scope marking strategies in adult grammars

On McDaniel's (1989) analysis of PM, (1a) contains only one argumental wh: the medial wen. Was is an expletive Scope-Marker (SM), merged in the matrix C(P), forming a chain with the medial wh whose scope it marks in the overt syntax ((1ii)). At LF, was undergoes expletive replacement ((1iii)). On a DD analysis, PM in (1a) has thus the syntax of long-movement at LF. In contrast, on the ID analysis ((1iii)), was is not an expletive SM but the ordinary wh 'what', merged as the object of believe. (1a) thus contains two questions: CP1, a question over propositions, and CP2, a question over individuals. CP2 is adjoined to CP1; the link between the two is established indirectly via coindexation of was with CP2. Was questions over the set of propositions that George stands in the
believe relation to. CP2 restricts the possible answers to CP1 to those and only those propositions that are possible answers to the embedded question. The interpretive procedure thus creates the effect of LD extraction.

(1)  **Partial Movement in German**

a. [cp1] **Was** glaubt der *George* [cp2] *wen* die *Rosa* geküsst *hat*?
   **what** believe George **who** Rosa kissed **has**

b. Who does George believe Rosa kissed?

**Direct Dependency analysis (McDaniel 1989)**

i. Spellout: [cp1] Q[was] [ believe G. [cp2] who[ R. kissed t]

ii. LF: [cp1] who [ believe G. [cp2] t' ] [ R. kissed t]

**Indirect Dependency analysis (Dayal 1994)**

iii. [cp1] [cp2] what[ believe G. t] ][ cp2] [who[ R. kissed t ] ]

(2) **What** do you think **which Smurf** really has roller skates?

Crain and Thornton (1998) argue English children produce PM questions ((2)). On their analysis, **what** in (2) is an expletive SM signaling wide scope of the medial **wh**, on a par with the DD analysis of PM ((1i-ii)).

2. The syntax of **wh**-scope marking in child French

We now provide evidence for the overt syntax of exceptional LD questions in L1 French for both SM strategies. The findings reported here are based on elicited production tasks carried out with sixty four 2;11 to 6;03 year old monolingual French children. Consider first the syntax of the exceptional LD questions in (3), all containing a single contentful **wh**, partially fronted to the left periphery of the embedded clause.

(3)  **Direct Dependency scope-marking in L1 French**

a. Tu penses **quoi** qu’il mange, le policier?
   ‘You think **what** that he eats, the policeman?’

b. Tu penses **ou** elle est cachée, l’assiette?

i. Spellout: [cp] Q[you think [cp] where[ she is hidden t] the plate

ii. LF: [cp] where[ you think [cp] t[ she is hidden t] the plate

iii. ESK tu penses **ou** elle est cachée, l’assiette?
   Q you think where she is hidden the plate

(4) a. You think **what** nut I am getting now?  **Chinese-English L1**

b. You thinkee **what time** ship can come?  **Pidgin English**
We posit a zero $Q^\circ$-morpheme merged in the matrix CP in (3a-b) licensing the medial $WH$ ((3i)). Assuming the medial $WH$ replaces $Q^\circ$ at LF ((3ii)), then the syntax of these questions involves a DD strategy, parallel to German PM on a DD analysis ((1i-ii)). We take the silent $Q^\circ$ licensing PM in the child grammar to also license $WH$-in-situ—e.g., [Q tu vas oué] ‘You go where?’—and bare yes-no intonational questions—e.g., [Q tu pars] ‘You leave?’—in adult French. The syntax of the exceptional LD question in (3c), where an overt SM appears, supports this claim. There are two SMs in French: $ESK$ restricted to yes-no questions and zero-$Q^\circ$ licensing bare yes-no questions and $WH$-in-situ. Children use both to license PM.

Whether PM in (1a) involves a DD or an ID hinges on the status of $w$ as: is it an expletive $WH$ acting as a SM (DD)? or the ordinary $WH$ ‘what’ quantifying over propositions and merged as the object of think (ID)? There is no issue in (3) as to the status of the SM since it is not a $WH$-phrase. (3) thus provides strong evidence for a DD strategy in L1 French.

We correlate the syntax of DD with the $WH$-parameter settings in French. PM without an overt SM is cross-linguistically attested, but only in languages where both full-movement and $WH$-in-situ coexist (Fanselow (2007)), just like adult in French. Bilingual and L2 acquisition nicely support this correlation: PM without an overt SM is spontaneously produced by Chinese-English bilingual children ((4a)), by Chinese Pidgin English speakers ((4b)), (Yip and Matthews (2007)); and by Japanese L2 learners of English ((4c), Wakabayashi and Okawara (2003)). Note that $Q^\circ$ to $C^\circ$ raising, characteristic of English yes-no questions, is used in (4c) to signal matrix scope of $what$, just as in (3c), where $ESK$, characteristic of French yes-no questions, is used to signal matrix scope of $where$. French kids, Chinese-English bilingual kids, Japanese L2 learners of English, or Chinese Pidgin English speakers, have both $WH$-parameter settings in their target/input grammar(s): Don't move! Move! The syntax of DD in L1 French thus correlates with the $WH$-settings in the target grammar.

Consider now the syntax of the exceptional LD questions in (5) below, each containing two $WH$s. We take (5) to instantiate PM, on an ID analysis ((iii)). The matrix $WH$ is not an expletive SM as is the case with zero-$Q^\circ/ESK$ in (3), but the ordinary $WH$ used to quantify over propositions (quot/KESK). These LD questions thus contain two root $WH$-questions: one over propositions and one over individuals. Syntactically, CP2 is adjoined to CP1. Semantically, it restricts the possible answers to CP1 to those and only those propositions that are possible answers to the embedded
question. Both WHs can appear raised to Spec CP ((5a)) as in German, on the ID analysis ((1iii)), or in-situ ((5b)) as in Hindi, a wh-in-situ language.

(5) **Indirect Dependency scope-marking in L1 French**

a. [~c1 [KESK1 tu penses t1] [~c2 t l'assiette, où elle est cachée t2]]
   ‘What-is-it-that you think, the plate, where she is hidden?’

b. [~c1 [Tu crois quoi,] [~c2 que je bois quoi]]
   you believe what that I drink what

Strong evidence for ID in Hindi is provided by SM with embedded yes-no questions ((6a), Lahiri 2002). A DD analysis requires scoping out yaa nahiin at LF to replace the expletive SM kyaa (itself raised to CP(P) at LF).

But matrix scope of ‘whether’ incorrectly predicts (6a) to have as answers either ‘She said Ramaan went home.’ or ‘She didn’t say Ramaan went home.’, while the only appropriate answers for (6a) are ‘She said Ramaan went home.’ or ‘She said Ramaan didn't go home.’ In contrast, ID correctly predicts the scope of ‘whether’. Now, L1 French also has SM with yes-no questions: the embedded yes-no question in (6b) restricts possible answers to the matrix question (What do you think?) to those propositions that are possible answers to the embedded yes-no question. (7a) illustrates SM with a yes-no question in Hindi on an alternative question reading: ‘Which of coffee or tea, do you think Chandra drank?’. (7b), volunteered in lieu of the target LD Who do you think pushed the trunk? illustrates the alternative question reading (‘Which of a spider or a ghost, do you think pushed the trunk?’) of SM with yes-no questions in L1 French. The overt syntax of exceptional LD yes-no questions, on either a true yes-no or an alternative reading, thus provides compelling evidence for an ID strategy in L1 French.

(6) a. [~c2 Us-ne kyaa, kahaa ] [~c3 kiramaa ghar gayii yaa nahiin]
   she-ERG what said that Ramaan home went or not
   ‘What did she say (about) whether Ramaan went home?’

b. [KESK1 t'en penses] [~c2 t l'assiette, elle est cachée dans le frigo]
   what you of-it think if the plate, she is hidden in the fridge
   ‘What do you think if the plate, she is hidden in the fridge?’

(7) a. Tum kyaa soccte ho ki Chandane coffee piitthi yaa chai?
   you what think that Chandra coffee drank or tea
   ‘What do you think whether Chandra drank coffee or tea?’

b. KESK tu penses s'il y a une araignée qu'a poussé le coffre, ou
cça soit un fantôme qu'a poussé le coffre?
'What is it that you think if there's a spider that pushed the trunk, or it is a ghost that pushed the trunk?'

3. On the semantics of wh-scope marking

Full-movement and PM are not semantically equivalent. While the LD question (1b) merely presupposes that George thinks Rosa kissed someone, the PM question (1a) also presupposes that Rosa kissed someone. In Herburger's (1994) words: "In (1a) [=our (1a)], the proposition expressed by the wh-clause, i.e. that Rosa kissed someone, cannot be understood as being merely part of George's belief-state but rather, as being part of the speaker's beliefs, that is, de re. In contrast, in (1b) [=our (1b) in German] it is possible to interpret the proposition that Rosa kissed someone de re. But is equally possible to interpret it as a mere figment of George's imagination, that is, de dicto." Since full-movement and PM are semantically equivalent on a DD analysis ((1ii)), the DD cannot account for this difference. But the LD can: CP2 is outside the scope of the attitude verb, acting as a restriction on the matrix Q° was ((1iii)), the matrix question thus inherits the presupposition behind the embedded question—correctly predicting that (1a) will not be felicitous in a context where this presupposition is denied. That is, (1a) is infelicitous if the context makes it clear to the speaker that George's belief about Rosa is false. LD wh-in-situ patterns with full movement: (8b), with the appropriate intonation and stress on qui, is felicitous in the context provided which makes it clear that the presupposition behind the embedded clause (that someone will help us clean up) cannot be satisfied.

(8)  a. Both you and I know that there is never anyone to help us clean up, but Mary apparently doesn't.
   b. Et alors, Marie, elle pense que qui va nous aider à nettoyer?
   'And so, Mary, she thinks that who will help us clean up?'

(9) Target LD: What do you (Ratty) think is hidden in the box?
   a. We know there is a marble in the box, a bear under the blanket and we know Grover is under the yogurt carton. Let's see if Ratty can guess where we hid them. … We know there is a marble hidden in the box, but ask Ratty what he thinks.
   b. There is something in the box, something under the blanket and something in the yogurt carton. Let's do the box first. You guess first and then the rat can have a turn. …
Now, crucially, in the classic protocol for eliciting LD questions, *The guessing game* ([9]), Crain and Thornton [1988], the presupposition behind CP2 in the target LD question is *always* satisfied: the contexts designed in order to elicit the LD question in (9) make it clear that the proposition that something is hidden in the box must be part of the questioner's belief-state—that is, the child's beliefs. Could we correlate the appearance of ID strategies—be it in L1 French or L1 English (since [2], analyzed as a DD, could be reanalyzed as an ID, with a matrix argumental what)—with the semantics of LD-questions in the child grammar? If such a correlation were to be established, then it could provide an answer to a tantalizing question: why do English children go through a wh-scope marking stage, but a not a wh-in situ stage, when neither option is allowed in English?

4. Investigating the L1 felicity conditions for LD questions.

We now report the results of a study involving 14 monolingual children (3;04 to 6;03) and designed to elicit LD questions under the three conditions in (10). On session 1, five items were elicited per child under Cond-1. On session 2, we first have two items under Cond-2, then revert to Cond-1 on the third item—as shown in (11) with our protocol translated from French. The last two items tested Conditions 2 and 3, respectively.

(10) **Target:** What do you (Leo) think Mummy bought for your b-day?

   **Condition 1: Felicitous context for an adult SM structure**
   Leo truthfully believes Mummy bought him a gift for his b-day.

   **Condition 2: Infelicitous context for an adult SM structure**
   Leo falsely believes Mummy bought him a gift for his birthday.

   **Condition 3:** Mummy might or might not have bought Leo a gift for his birthday, but Leo believes that she did.

(11a) **Cond-2: Infelicitous context for the use of SM**

   **Leo:** It's my birthday. I'm sure Mom bought me a gift. I think I know what she bought. <Leo leaves. Mummy arrives. Opens big bag.>

   **Mummy:** My god, it's Leo's birthday! It's 8! The stores are closed. I didn't have time to buy his b-day gift! <Mummy closes her bag.>

   **Exp.:** You and I, we both know the bag is empty and Mummy didn't buy anything. But Leo doesn't know that. He's so sure she bought him something. Maybe he thinks she bought a plane. Ask him.

   **Target LD:** What do you think Mummy bought you?
b. Reverting to Cond-1: Felicitous context for SM

Mummy: My little Leo, with one day late, here is your gift.

Exp.: Leo knows there is a gift in Mummy's bag. Let's see what he thinks she bought him. Maybe he thinks it's a plane. Ask him.

Target LD: What do you think Mummy bought you?

4.1. 'No questions' kids

Two children, the youngest age group (3:04, 4:01), never produced questions on all three conditions, systematically volunteering 'answers' instead of the target LD questions. (12) illustrates their response pattern.

(12)a. Cond-1. Target: What do you think the pirate is eating?
Camille: 'The pirate, he is eating an orange.'

b. Cond-2. Target: What do you think Mummy bought?
Camille: 'She has nothing in the basket.' Enzo: 'Nothing.'

c. Cond-2. Target: What do you think is hidden in the trunk?
Context: Leo's sister, Ann, has tricked him. He is scared as he falsely believes there is something hidden in the trunk.
Camille: 'A mouse.' Enzo: 'A joke.'

4.2. 'Amazing' kids

Table 1 gives the results for four kids aged 4:00 to 5:04, and (13), the typology of their responses in session 1. These kids produced no questions whatsoever under Cond-2/3, thus reverting to the pattern of responses for Group 1, volunteering answers ((14)). Crucially, the only question elicited from these kids in session 2 was a \textbf{Root2} question ((14c))—under Cond-1 and only on the second prompt. We include a fifth child, Benoît (5:04), with a telling response pattern. In session 1, a 100% of his responses were questions. In session 2, he patterned like the other kids for the first two items, volunteering again answers (e.g. 'She didn't buy anything.'). Now, for the third item, where we revert to a felicitous context for ID ((11b)), he first answered 'Maybe a plane', then on the second prompt, produced the target LD and, from then on, volunteered LD questions.
Table 1. ‘Amazing’ kids: session 1 (in black) vs. session 2 (in white)

<table>
<thead>
<tr>
<th>Movement/In-situ</th>
<th>%</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope-Marking</td>
<td>22.5%</td>
<td>'You think what?'</td>
</tr>
<tr>
<td>Root1 (Matrix V)</td>
<td>22.5%</td>
<td>'She hid what?'</td>
</tr>
<tr>
<td>Root2 (Embedded V)</td>
<td>10%</td>
<td>'I don’t feel like saying it.'</td>
</tr>
</tbody>
</table>

4.3. ‘Perfect’ kids

This group of five children is the oldest age group (5;03 to 6;03). As shown in Table 2, their performance on LD questions jumps from 55% under Cond-1, to 86% under Cond-2/3. Why is their performance significantly better? Because Cond-2/3 provide a more felicitous context for asking a LD question. Recall that under Cond-1, the lead in is—e.g. We know there is cat hidden in the trunk, ask Ratty what he thinks. ((9)). Now, in this context, it would be just as appropriate to ask Ratty either the
Root2 question *What is hidden in the trunk?*, or the target LD-question *What do you think is hidden in the trunk?*. In contrast, under Cond-2/3, the context makes it clear to the child/questioner that the presupposition behind CP2 in the target LD-question (that there is something hidden in the trunk) is/might be false. Cond-2/3 thus provide contexts felicitous for a LD question, but infelicitous for either a Root2 question or a SM question on the ID analysis, since both presuppose something is hidden in the trunk.

![Bar chart](image)

Table. 2. ‘Perfect’ kids: Cond-1 (in black) vs. Cond-2/3 (in white)

### 4.4. ‘Direct Dependency’ kids

This group includes two children (4;10, 5;04), volunteering DD questions on all conditions. On a DD analysis, PM in (15a) has the syntax of (is equivalent to) long-movement at LF and is thus expected to be felicitous on all conditions, just as full-movement is. What is surprising, however, is that the DD is their primary LD strategy, representing 76% of their responses. Recall that DD without an overt SM is licensed only in grammars where both wh-movement and wh-in-situ coexist (e.g. (4) bilingual Chinese/English, Chinese Pidgin English). We take DD in L1 French to reflect, in fact, an adult strategy in non-standard French. That is, we analyze (15a) as a truncated embedded wh-cleft ((15a')) parallel to the wh-cleft in (15b) volunteered by a control adult. Now, (truncated)
embedded wh-cLEFTS ((15)) raise the canonical issue that PM raises—how to assign matrix scope to the medial wh. The DD analysis resolves this issue by positing a matrix SM replaced at LF by the medial wh. On this proposal, the DD strategy is productive in L1 French because it reflects a SM option in non-standard French, itself a wh-scope marking language.

(15)a. Tu penses que quoi a acheté, Anne?
   a’. c1 Q1 [you think] c2 that [it is] what, has bought Ann
   b. Tu penses que c’est qui qui joue du tambour?
      ‘You think that it is who that is playing drums?’

5. On the L1 felicity conditions for LD questions

The results for the ‘Amazing’ kids (4-5;04) vs. the ‘Perfect’ kids (5;03-6;03), suggest that the former have not yet acquired the felicity conditions for LD questions. Their response-pattern in session 2 ((14a-b)) was the same as those of the younger kids (3;04, 4;01) who failed to produce questions altogether, volunteering answers instead ((12)). Three kids produced no questions whatever the experimental condition. One child produced a single Root2 question under Cond-1 ((14c)). And Benoît only started volunteering LD questions, once we reverted to the context for Cond-1, and only on the second prompt. We conclude that these ‘Amazing’ kids have not yet mastered the semantics of LD movement/wh-in-situ since they fail to produce questions in contexts where only a LD question is felicitous. They appear to have the felicity conditions for SM questions on an ID analysis. We thus take their response-pattern under Cond-2/3 to reflect presupposition failure. The child fails to produce the target LD because the presupposition behind the embedded clause—e.g. that Mummy bought something—cannot be satisfied, projected up to the matrix clause, since it has been explicitly denied in the context provided.

We started out by asking whether the appearance of ID strategies in child grammars could be correlated with the semantics of LD questions in their grammar, hypothesizing that such a correlation could explain why English kids go through a SM, but not an in-situ, stage, when neither is allowed in English. Our results suggest that children do indeed go through a stage where they have the semantics of SM questions in adult Hindi/German. The paradox, however, is that although the response pattern for the Amazing kids on session 2 show they have not yet mastered the semantics of LD questions, they appear nonetheless to have the syntax of LD extraction/wh-in-situ since they do produce LD questions in session 1 ((13)). Their response patterns thus suggest that
children that have not yet acquired the semantics of LD extraction/WH-in-situ, might nonetheless have the surface adult syntax of LD questions. Conversely, the response patterns on Cond-2/3 for the ‘perfect’ kids, suggests that children that have acquired the semantics of LD-questions have acquired their syntax, since their performance on LD questions improves significantly under Cond-2/3. These findings suggest a lag in the acquisition of the semantics vs. the syntax of LD questions/subordination. Assuming a tight match between syntactic and semantic structure—that the semantics is read off LF, the ultimate level of representation built by syntax—this conclusion raises the issue of the syntax-semantics mapping in language development.

Acknowledgments

This research was funded by the Laboratoire de Linguistique de Nantes (LLING, EA 3827). We dedicate this paper to Celia Jakubowicz. Without Celia’s pioneering work and the contagious enthusiasm for research in language acquisition that she communicated when she came to talk in Nantes over five years ago, this research would not have existed.

References


