Deviation Patterns in the Production of Questions in L1 Greek

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Abstract: The aim of this paper is to examine Greek preschool-age children’s production of questions. Studies in other early languages reveal four common deviation patterns: wh-subextraction, avoidance of wh-object extraction, non-target performance on negative questions, and wh-copying/ partial movement. To assess Greek children’s performance, six 4-to-6 year old children participated in elicited production tasks. All deviation patterns in question were attested. The empirical findings of this study suggest that the further a wh-expression moves, the more difficult it is for children to process movement. Also, the child grammar produces representations that mirror LF representations when it comes to non-target question production.  

Key words: question production, subextraction, extraction site, negation, copying

1. Early deviation patterns across languages  
Studies in early languages other than Greek have shown that short-distance (SD) and long-distance (LD) questions deviate from the adult target, with SD questions, however, being more highly target consistent from the beginning. It is widely held, though, that exceptional questions conform to wh-movement options that are available within Universal Grammar (Thornton & Crain 1993). In other words, children do not construct questions that lie outside the family of known languages (de Villiers 1995). As regards common deviation patterns, these include wh-subextraction, avoidance of wh-object extraction, non-target performance on negative questions, and wh-copying/ partial movement.  

1.1 Left-branch condition violation / wh- subextraction  
A frequent error type attested in early SD and LD interrogatives is the violation of the Left Branch Condition (LBC), which first characterized English and which postulates that movement of an element from the left branch position is possible only by pied-piping the entire phrase (qtd. in Chen et al. 1998). Requirements on pied-piping are language-specific (Gavruleva & Thornton 2001), while in some languages, like Russian, Serbo-Croatian and Polish, wh-elements are subextractable out of complex wh-phrases (Chen et al. 1998).  

LBC violations have been reported in some child grammars for target languages in which LBC applies. For example, it has been attested that in early Dutch and English interrogatives, the wh-word is often subextracted to the SpecCP position without pied-piping the entire wh-phrase (qtd. in Chen et al. 1998). Some examples are presented below:  

Dutch  
(1) Welk wil jij boekje?  
which want you book  
‘Which book do you want?’
As can be observed, LBC violations are often accompanied by a stranded nominal element [(1), (2a)], which is sometimes marked by a resumptive determiner [(2b)] or a resumptive wh-word [(2c)] in the position of the wh-trace (Chen et al. 1998).

Under minimalist assumptions, at LF representation only the [+wh] feature (or a corresponding wh-word) is checked in its scope SpecCP position, with the pied-piping of the residue being enforced at the PF interface (Chomsky 1995). As van Kampen (1997) notes, children may have a preference for LF-like representations; their grammars seem to be defined by economy principles dictating movement of the ‘bare minimum’ for PF and LF convergence, and minimization of the steps of full DP pied-piping (Gavruseva & Thornton 2001).

1.2 Avoidance of wh-object extraction
Another type of deviation involves the syntactic status of the extracted wh-phrase. Early English studies, for instance, have shown that children often resort to the elicitation of wh-subject questions when wh-object questions are intended, and generally appear to have less difficulty with subject than with object SD and LD extraction (Crain & Thornton 1991). This is not surprising, as subject extraction necessitates the employment of the least effort strategies compared to object extraction. Children simply seem to favour the ‘simplest’ means of expression (Crain & Thornton 1998).

1.3 Non-target performance on negative questions
Another parameter that affects children’s target performance on interrogative structures is the presence of negation. Adult questions containing negation are subject to both the Wh-Criterion and the Neg-Criterion. The Wh-Criterion, initially proposed by Rizzi (1991), postulates an adjacency requirement between the wh-operator and the verb (Guasti 1996). For its satisfaction, two movement steps apply, with the wh-operator raising to SpecCP and the wh-feature raising from its base-generated I position to C. Thus, the wh-operator enters into a spec-head relation with a [+wh] head and vice-versa, and the wh-criterion is fulfilled (Guasti 1996). In a way analogous to the Wh-Criterion, the Neg-Criterion posits that the Neg-Op must be in a spec-head relation with a [+neg] head and vice-versa (Haegeman & Zanuttini 1991).

At a crosslinguistic level, early English data has shown that in their use of negation in question structures, children use a number of non-adult question forms. For instance, the auxiliary verb is frequently doubled, sometimes along with negation, while in other questions children fail to raise Infl to Comp (Guasti et al. 1995). Examples are given below:

(3a) What kind of bread do you don’t like?
(3b) Why can’t she can’t go underneath?
(3c) Where he couldn’t eat the raisins? (Guasti et al. 1995)

This tendency, however, is not uniform across all languages. In the acquisition of Italian interrogatives, for instance, negation is not attested to cause deviations from the adult
target. On the contrary, early Italian negative questions were adult in form and verb doubling was never attested (Guasti 1996).

(4a) Quando non dormi?
   when NEG sleep
   ‘When don’t you sleep?’
(4b) Cosa non fa il bambino?
   what NEG can do the child
   ‘What can’t the child do?’

Given the relatively high target performance on negative questions in early Italian but not in early English, I will assume that unlike English children, Italian children correctly hypothesize from start that the Neg-Criterion must be satisfied in CP and not in IP. And this, according to Guasti (1996), is a consequence of children’s initial assumption that negation must stay in a V-related projection, this being the CP in languages like Italian, and I in English.

1.4 Wh-copying and partial movement
Finally, the last type of deviation to be discussed in this paper is wh-copying and partial movement (PM). Copying is when a copy of the wh-phrase is left behind as it moves through the embedded SpecCP to the matrix SpecCP (Crain & Thornton 1991). PM, on the other hand, involves the strictly local movement of the true wh-phrase to the embedded SpecCP position, with a wh-scope-marker being generated in the matrix SpecCP (Thornton & Crain 1993). Early English data has shown that children often seem to use wh-copying, and less frequently PM, as a LD strategy when extracting only from finite embedded clauses, not infinitival ones (Crain & Thornton 1991, Thornton & Crain 1993, de Villiers 1995):

Wh-copying
(5a) Who do you think who is in the box? (Thornton & Crain 1993)
(5b) Who do you think who Cookie Monster likes? (Thornton & Crain 1993)
(5c) What do you think what’s in her hat? (qtd. in de Villiers 1995)
(5d) What do you think what the baby drinks? (Crain & Thornton 1991)

Partial Movement
(6a) What do you think who ate this? (Thornton & Crain 1993)
(6b) What do you think where this froggy lives? (Thornton & Crain 1993)
(6c) What do you think where the marble is? (qtd. in de Villiers 1995)

So, it is evident that, on the whole, children crosslinguistically have more options available to them than adults (Thornton & Crain 1993). In the adult grammar, LD movement involves cyclic movement of the wh-phrase through the intermediate SpecCPs; a trace is left in each SpecCP and the whole chain of traces is coindexed with the moved wh-phrase. The different paths children take usually correspond to parametric options of UG (Thornton & Crain 1993), since copying and PM, for example, are found in dialects of German and Romani (Crain & Thornton 1991, Thornton & Crain 1993).
2. Pilot study
2.1 Subjects / participants
In order to assess Greek children’s performance on question production, six 4-to-6 year old children were tested in a kindergarten. For the analysis of the data, the subjects were divided into 2 groups according to age: 4;1-5 and 5;1-6. Each group consisted of three children.

2.2 Materials
The children participated in a series of elicited production tasks, which were designed mainly along the principles of McDaniel et al. (1996) and Crain & Thornton (1998). A main design feature pertaining to the tasks was the construction of contexts that were uniquely felicitous for the structures under investigation. Through appropriate lead-ins based on stories and games, children were prompted to pose questions to a puppet. The experimenter’s lead-ins contained several clues about the question being targeted without however modelling it. This should be constructed by the child on the basis of the available clues.

For the elicitation of SD questions, children were prompted to find out information from the puppet about himself and his friends. Also, the question-after-stories technique was followed, according to which the child was presented with short stories accompanied by pictures or acted out with props, and was then prompted to pose comprehension questions to the puppet.

LD questions were elicited by having the child invite the puppet to participate in a ‘guessing game’. Both the child and the puppet covered their eyes while the experimenter hid a series of items. They were then allowed to uncover their eyes, and the guessing game proceeded. In addition, the experimenter presented some toy characters and some possible actions they could do. The child was then prompted to ask the puppet to decide which action each toy character would do.

3. Results
3.1 Left-branch condition violation / wh-subextraction
Turning to the analysis of the Greek data, target D-linking was rarely attested. LBC violation, on the contrary, was very frequently attested in both SD and LD extraction. Both groups produced wh-subextraction structures, with the LBC violation rates being especially high in group B. As shown in Tables 1 and 2 below, 5-to-6 year old children violated the LBC in half of the obligatory discourse-linked contexts in both SD and LD questions.

<table>
<thead>
<tr>
<th></th>
<th>GROUP A (4;1-5)</th>
<th>GROUP B (5;1-6)</th>
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<tbody>
<tr>
<td>D-L</td>
<td>0/12 0.00</td>
<td>1/12 08.33</td>
</tr>
<tr>
<td>non D-L</td>
<td>7/12 58.33</td>
<td>3/12 25.00</td>
</tr>
<tr>
<td>LBC violation</td>
<td>3/12 25.00</td>
<td>6/12 50.00</td>
</tr>
<tr>
<td>no wh-phrase</td>
<td>2/12 16.67</td>
<td>2/12 16.67</td>
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Table 2. D(iscourse)-linking realization in long-distance questions

<table>
<thead>
<tr>
<th></th>
<th>GROUP A (4;1-5)</th>
<th>GROUP B (5;1-6)</th>
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<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
</tr>
<tr>
<td>D-l</td>
<td>2/9</td>
<td>22.22</td>
</tr>
<tr>
<td>non D-l</td>
<td>4/9</td>
<td>44.44</td>
</tr>
<tr>
<td>LBC violation</td>
<td>1/9</td>
<td>11.11</td>
</tr>
<tr>
<td>isolated wh-word</td>
<td>0/9</td>
<td>0.00</td>
</tr>
<tr>
<td>no wh-phrase</td>
<td>2/9</td>
<td>22.22</td>
</tr>
</tbody>
</table>

Here are some subextraction examples produced by the Greek children:

(7a)  *Pjo de dokimazi o Jack fagito de dokimazi o Jack?* (K. 5;6)

which-SG-NEUT not try-3SG the Jack food not try-3SG the Jack

‘Pjo fagito de dokimazei o Jack?’ (target question)

‘Which food doesn’t Jack try?’

(7b)  *Pjo thelis na pari to megalo to skilaki sti giortula?* (K. 5;6)

which-SG-NEUT want-2SG to take-3SG-SUBJ the-SG-NEUT big the-SG-NEUT dog at the party

‘Pjo skilaki thelis na pari to alogaki mazi tu sti giorti?’ (target question)

‘Which dog do you want the horse to take with it at the party?’

(7c)  *Pja nomizis, Astruli, pja fraula ine mes sto kuti 3?* (E. 4;10)

which-SG-FEM think-2SG Astruli which-SG-FEM strawberry be-3SG in the box

‘Pja fraula nomizis oti ine mesa sto kuti 3?’ (target question)

‘Which strawberry do you think is in box 3?’

(7d)  *Pjon patise Astruli i arkuda apo ton lago?* (G. 5;9)

which-SG-MASC-ACC tread on-3SG-PAST Astruli the-SG-FEM bear from the-SG-MASC hare

‘Pjon lago patise i arkuda?’ (target question)

‘Which hare did the bear tread on?’

Sometimes the wh-marker was fronted into the initial position, with the accompanying nominal element being stranded to a rightward position [(7a)]. In other instances, the stranded nominal element was marked by a resumptive determiner [(7b)] or a wh-word [(7c)], while in other cases it was marked by a preposition and was turned into a Prepositional Phrase [(7d)]. This last pattern reminds us of Romance languages like French, where the presence of a preposition between the wh-determiner and the rest of the phrase is necessary for adult subextraction (Gavarro & Sola 2004).

Surprisingly enough, subextraction rates in the younger group were much lower; the youngest children most often resorted, instead, to a nonreferential realization of discourse-linked (D-l) wh-phrases, which was also the second most preferred option for the older children. So, overall, Greek children very frequently produced non D-l wh-words where D-linking was targeted. SD and LD questions of this kind are illustrated here:
Well, the conclusions on the early Greek instances of subextraction can be only tentative at this stage; from a first view, however, they could fit well with the explanations put forward for similar crosslinguistic data. The Greek subextraction data could namely lend support to explanations suggesting that children may have a preference for LF-like representations.

3.2 Avoidance of wh- object extraction

The role of the site of extraction was also clear in the early Greek data. As illustrated in Graph 1 below, SD extraction from object position was the most difficult for both groups:

What was surprising to find was that the older group of children showed an overall lower target performance than the younger group on SD extraction, this being especially evident in wh-object question production. Their lower performance was attributed mainly to their resistance for D-linking where this was intended (as we saw earlier), and to agreement errors.

In obligatory LD extraction contexts, subject questions were occasionally produced instead of object questions, while the reverse pattern was also attested in a few instances. Let us first see examples of subject instead of object extraction:

(9a)  *Pjo skilaki nomizis oti ine eki, Astruli?* (K. 5;6)

which-SG-NEUT dog think-2SG that be-3SG there Astruli

‘*Pjo skilaki nomizis oti ekripe sto kuti 2?’* (target question)

‘Which dog do you think that she hid in box 2?’
(9b) *Pjo tha pai sti giortula me to alogaki?* (G. 4;11)
which-SG-NEUT will go-3SG-SUBJ to the party with the horse
‘Pjo skilaki thelis na pari to alogaki mazi tu sti giorti?’ (target question)
‘Which dog do you want the horse to take with it to the party?’

And a couple of examples of object instead of subject extraction:

(10a) *Astruli, esena pja nomizis oti exi sto kuti 3?*
Astruli, you-SG-ACC which-SG-FEM think-2SG that have-3SG in the box 3
‘Pja fraula nomizis oti ine sto kuti 3?’ (I. 5;3) (target question)
‘Which strawberry do you think that there is in box 3?’

(10b) *Nomizis ti exi afio to kuti?* (E. 4;10)
think-2SG what have-3SG this the box
‘Ti nomizis oti ine sto kuti 1?’ (target question)
‘What do you think that there is in box 1?’

Target performance on object questions was the lowest, not dropping though greatly compared to the target performance on the other types of questions:

**Graph 2. Target performance across long-distance wh-questions.**

It is worth noting, however, that, in terms of preference, object extraction was by and large the least preferred only in LD cases in the youngest group. Adjunct SD and subject LD extraction questions were the least problematic throughout.

The finding that Greek children appear to have less difficulty with subject than with object extraction is not surprising, as the latter type of extraction involves longer movement. As for adjunct extraction, it uncontroversially involves successive-cyclic movement of the wh-phrase from its base-generated adjunct position, through the intermediate SpecCP, up to the matrix SpecCP position (Thornton & Crain 1993). So, Greek children’s target performance on wh-adjunct questions provides additional evidence in support of the claim that children command successive cyclic movement (cf. Crain & Thornton 1993).
3.3 Non-target performance on negative questions
In the Greek data presented here, more errors occurred in the presence of negation, as indicated by the small drop of performance rates in negative questions compared to affirmative ones:

<table>
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<th>GROUP A (4;1-5)</th>
<th>GROUP B (5;1-6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target performance</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>on affirmative vs. negative short-distance questions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>affirmative questions</strong></td>
<td>22/23 95.65</td>
<td>18/24 75.00</td>
</tr>
<tr>
<td><strong>negative questions</strong></td>
<td>27/35 77.14</td>
<td>23/33 69.70</td>
</tr>
</tbody>
</table>

As for the types of errors in negative questions, they mainly involved doubling of the wh-marker, accompanied by negation and/ or verb-predicate doubling. Here are some examples:

(11a) *Pjo de dokimazi o Jack fagito de dokimazi o Jack?*  
which-SG-NEUT not try-3SG the Jack food not try-3SG the Jack  
‘Pjo fagito de dokimazi o Jack?’ (K. 5;6)  (target question)  
‘Which food doesn’t Jack try?’

(11b) *Ti dokimazi o de ti de de dokimazi o skatzoxiros?*  (M. 4;8)  
what try-3SG the-SG-MASC NEG what NEG NEG try-3SG the-SG-MASC hedgehog  
‘Pjo fagito de dokimazi o skatzoxiros?’  (target question)  
‘Which food doesn’t the hedgehog try?’

(11c) *Pjos d- j- pjos den pai gia na voith- pjos den pai?*  (G. 4;11)  
who-SG-MASC NEG to who-SG-MASC NEG go-3SG to help who-SG-MASC NEG go-3SG  
‘Pjos den pai gia na vothisi?’  (target question)  
‘Who doesn’t go to help?’

Also, it is worth noting that two children, one of each group, resisted the use of negation, yielding affirmative questions instead. Let us have a look at some examples of what these two children gave:

(12a) *Ti tros, Astruli?*  (E. 4;10)  
what eat-2SG Astruli  
‘Ti de su aresi na tros?’  (target question)  
‘What don’t you like to eat?’

(12b) *Pu na pai o Petros?*  (E. 4;10)  
where to go-3SG-SUBJ the Petros  
‘Pu den bori na pai o Petros?’  (target question)  
‘Where can’t Petros go?’
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(12c) Pragmatika su aresi? (K. 5;6)
really you-DAT like-3SG
‘De su aresi to pagoto?’ (target question)
‘Don’t you like ice-cream?’

Given the relatively high target performance on negative questions, I will assume that similarly to Italian and unlike English children, Greek children correctly hypothesize from start that the Neg-Criterion must be satisfied in CP and not in IP. Besides, CP is the V-related projection in Greek. It should also be noted that similarly to Italian, negation in Greek behaves more like a preverbal clitic joined to the verb which has moved to C (cf. Guasti et al. 1995). However, although movement of negation to C is parasitic on movement of I to C, yet in principle the two operations are distinct (cf. Guasti 1996). This could potentially provide some clues on why some children resist the use of negation in obligatory interrogative contexts. Besides, a relatively late emergence of questions containing negation has in fact been observed also in early English spontaneous production (Wells 1985). So, negation seems not to be favoured by children as late as 6 years old, which remains a question to be investigated in detail in future research.

3.4 Wh- copying and partial movement
Some copying errors were found in the LD questions of two Greek children as well. Here are their productions:

(13a) Ti thelis ti kani alogaki? (E. 4;10)
what want-2SG what do-3SG-SUBJ horse
‘Ti thelis na kani to alogaki?’ (target question)
‘What do you want the horse to do?’

(13b) Ti nomizis ti exi mesa? (I. 5;3)
what think-2SG what have-3SG inside
Ti nomizis oti ine sto kuti 1? (target question)
‘What do you think that there is in box 1?’

As we can see from example [(13a)], wh-copying was attested even when extracting from infinitival clauses in early Greek. This observation contrasts with crosslinguistic ones, and thus questions proposals (eg. Thornton 1991) that explain copying phenomena as being due to children’s rules for spec-head agreement, which is in principle triggered only by tensed, not infinitival, complements. In addition, what was surprising to notice was that these children sometimes introduced a wh scope-marker τι in the embedded SpecCP, while the true wh-phrase raised to the Spec position of the matrix CP. Let us see this through specific examples:

(14a) Pjo nomizis esi Astruli ti ine mes sto kuti 2? (E. 4;10)
which-SG-NEUT think-2SG you Astruli what be-3SG in the box 2
‘Pjo alogaki nomizis oti ekripe sto kuti 2?’ (target question)
‘Which horse do you think that she hid in box 2?’
(14b) *Pu nomizis ti exi mesa?* (I. 5;3)
where think-2SG what have-3SG in

‘Pu nomizis oti ine to alogaki?’ (target question)
‘Where do you think the horse is?’

That is, a reverse pattern to the usual PM pattern was attested, which, to my knowledge, has not been observed in the acquisition of questions in other languages.

The two Greek findings of copying when extracting from an infinitival clause and of producing a reverse-to-PM pattern, however, are not found in any other languages. This is actually a point that deserves further investigation. Nevertheless, all these deviating LD strategies have one property in common: children seem to choose the German and Romani strategy of spelling out at PF the intermediate wh-trace, and do not conclude from start that their language involves both successive and LD movement (Weinberg 1990), as well as traces that are visible at LF but not pronounced at PF (Gavruseva & Thornton 2001). Copying and PM are assumed to involve invisible movement at LF (Abdulkarim et al. 1997), linking the medial-wh with the initial wh-marker; so, it is plausible to assume that LF effects are present among young children (Abdulkarim et al. 1997). This in turn has been interpreted as lending additional evidence in support of the claim that children’s grammars have the full abstract character of the adult grammar (Abdulkarim et al. 1997).

4. Conclusions
In conclusion, what has been presented in this paper was that Greek children acquiring interrogative constructions seem to exhibit similar deviation patterns to the ones found in other early languages: LBC violation, avoidance of wh-object extraction, non-target performance on negative questions, wh-copying and some type of PM constitute typical deviation patterns in the production of questions in Greek and crosslinguistically. All five patterns suggest that the further a wh-expression is removed from its gap, the more difficult it is for Greek and other children to process wh-movement (Philip et al. 2001). The grammatical operations, however, to which children resort, fall mostly within the options of UG. Yet, the two surprising Greek findings concerning the phonetic realization of the intermediate wh-trace in LD extraction pose some questions that are open to deeper investigation. In general, though, notwithstanding ‘puzzling cases’, it was shown throughout the presentation that the child grammar produces representations that mirror LF representations as closely as possible (van Kampen 1997) when it comes to the production of non-target questions.

Of course, the conclusions drawn from the pilot testing presented here can only provide a tentative picture of the acquisition of questions in Greek. Data from a wider and more extensive research on the acquisition of interrogative structures will provide a clearer picture of the question production area in Greek.

References


