

# *Aspects of aspect: Acquiring grammatical aspect in Modern Greek: The interaction of aspect with aspectual adverbials in children's grammars*<sup>\*</sup>

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## **Abstract**

This paper gives a detailed presentation of a study that was conducted at a nursery school in Greece, with Greek subjects aged 1;9,19 to 4;3,15. Our elicited imitation task focused on the acquisition of verbal aspect by Greek children, with particular reference to their comprehension of the semantics of perfective vs imperfective viewpoint aspect and to their ability to successfully combine aspectual adverbials with verbs set for the perfective or imperfective aspectual value. Thus, the role of adverbial expressions in the determination of aspect in MG as well as the children's awareness and mastery of the system is examined. In respect of the positioning of aspectual adverbials in children's grammars, we found that upon reproduction children had a strong preference to place them in a position immediately following the verb irrespective of their position in the input. These findings were interpreted syntactically (following Cinque 1999) both in comparison with the adult grammar and also in terms of the acquisition of the semantics of aspect and of aspectual adverbials.

## **1 Introduction**

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The acquisition of the verb and its grammar plays a central role in early language acquisition. This paper focuses on aspects of the acquisition of verbal aspect in Modern Greek. In particular, we looked at the following:

- a) Greek children's comprehension and acquisition of the semantics of viewpoint aspect,
- b) The role of aspectual adverbials in the determination of aspect in MG, as well as the children's awareness and mastery of the system.
- c) Finally, it will be shown
  - i. That the way children combine aspectual adverbials with verbs marked for viewpoint aspect can provide insights about their acquisition of the semantics of aspect. This is made explicit in the way they correct an ungrammatical input by: a) omitting the aspectual adverbial, b) by changing the aspectual marking on the verb, or c) by substituting an aspectual adverbial with another one in the clause.
  - ii. Regarding the positioning of aspectual adverbials in children's grammars, I will show that quite frequently they place the aspectual adverbial in a position immediately following the verb.

## 2 Theoretical issues

### 2.1 The notion of aspect

Following most linguistic theories, the term aspect is taken to refer to either of two things:

*Lexical aspect*, which denotes the internal temporal structure of an event, or event type: that is, the relationship between the verb, its arguments and the type of event that the two, taken together, denote. For example, note the difference between:

- 1a) Mary ate a banana.            and
- 1b) Mary ate bananas.

A distinction can be drawn between a durative and a terminative sentence; the verb "eat" being constant, the aspectual differences in these sentences must be attributed to the difference between the complements (a banana, bananas).

*Viewpoint aspect*, which shows the way in which an event is presented, the particular viewpoint toward the described situation. For example, note the difference between:

- 2a) I Nina diavaze (IMPF) ena biblio  
Nina was reading a book.                      and
- 2b) I Nina diavase (PF) ena biblio.  
Nina read a book.

In (2a), the verb is imperfective. “Imperfective aspect presents a situation from an internal point of view, often as ongoing (progressive) or enduring (continuous)” (Li, 2000), whereas in (2b), the verb is perfective. “perfective aspect presents a situation from an external perspective, often as completed” (Li, 2000).

In Modern Greek, there are two aspectual categories: the perfective, which stems from the past theme of the verb (e.g. diavase) and the imperfective, which stems from the present theme of the verb (e.g. diavaze).

So, whether a verb characterizes a situation as having a temporal boundary or an end result is a matter of lexical aspect, whereas whether the sentence presents a situation as ongoing (progressive/imperfective) or completed (perfective) is a matter of grammatical aspect.

Several systems have been developed for lexical and grammatical aspect to be encoded and described. For lexical aspect, the Vendlerian classification of verbs into activities, accomplishments, achievements and states is as follows:

- (a) activity verbs, like “yelo” (laugh) and “treho” (run), encode situations as consisting of successive phases over time with no inherent endpoint
- (b) accomplishment verbs (rather, verb phrases), like “htizo ena spiti” (build a house), also characterize situations as having successive phases, but they differ from activities in that they encode an inherent endpoint (e.g. house-building has a terminal point and a result).
- (c) achievement verbs (rather, verb phrases), like “anaynorizo mia fili” (recognize a friend), “ftano stin korufi” (reach the top) encode situations as punctual and instantaneous.
- (d) state verbs, like “ksero” (know), “thelo” (want), “koimamai” (be asleep), encode situations as involving homogeneous states with no inherent endpoint.

With reference to lexical aspect and the “inherent endpoint” notion, activity and state verbs are “atelic”, not telic, in that they encode no endpoint, and accomplishment and achievement verbs are “telic”, in that they do encode an endpoint.

## 2.2 The acquisition of the semantics of aspect- Presuppositions

With respect to the above introduction on the notion of aspect, at this point, it needs to be spelt out what *we* are presupposing the “semantics of aspect” that the children are acquiring actually is. That is, we need a semantic analysis that is the explicit target of the children’s acquisition process.

Our primary aim has been to find out whether the children are aware of the fact that when they are marking a verb for the perfective or the imperfective grammatical aspect, they are actually presenting an event from a specific viewpoint. For example, are they aware of the distinction between the following:

- 3a) Ο Κostas zoyrafi-z-e mia zografia.  
The-Kostas was drawing-IMPF a picture.  
Kostas was drawing a picture.
- 3b) Ο Κostas zoyrafi-s-e mia zografia.  
The-Kostas drew-PF a picture.  
Kostas drew a picture.

When uttering (3a) or (3b) are they aware of the semantics triggered by the perfective or the imperfective aspect on the verb? Are they aware of the differences incurred by the one or the other aspectual value? And are they able to associate the imperfective aspect on (a) above with a non-telic, ongoing event with no obvious endpoint and the perfective aspect on (b) with a telic, completed event?

Furthermore, acquiring the semantics of aspect also entails that the children master the internal temporal structure of an event, that is

- (a) the semantics associated with lexical aspect and the Vendlerian classification of verbs into activities, accomplishments, achievements and states, and
- (b) the semantics of aspect that emerge from the relationship between the verb and its arguments in a clause, that is the inherent aspectual properties of a clause

With respect to the acquisition of the semantics of lexical aspect, children need to acquire knowledge of the internal structure of the event denoted by a verb (and its arguments), in terms of initial point – intermediate stages- endpoint; i.e. they need to acquire event structure and the semantics associated with it, before they associate the semantics of lexical aspect with it.

### **2.3 Aspectual adverbials**

Aspect interacts with aspectual adverbials, which point to the internal temporal properties of a situation, e.g. duration, frequency. Following Alexiadou (1994), aspectual adverbials are classified into:

Durative: *yia mia ora* ‘for an hour’

Indefinite frequency: *kathimerina* ‘daily’, *kathe toso* ‘every so often’

Definite frequency (cardinal count): *mia fora* ‘once’,

Point adverbials: *amesos* ‘immediately’, *ton Iounio* ‘in June’

Completive adverbials: *se mia ora* ‘in an hour’

Durative and indefinite frequency aspectual adverbials normally require the imperfective, whereas definite frequency (cardinal count), point and completive adverbials require the perfective. This is exemplified in the following sets of examples:

- 4a) I Maria etroye ena payoto kathe mera.  
Mary was eating (IMPF) an ice-cream every day  
(indefinite frequency adverbial)
- 4b) \*I Maria efaye ena payoto kathe mera.  
Mary ate (PF) an ice-cream every day (indefinite frequency adverbial)
- 5a) I yatoula niaourize yia mia ora.  
The cat was mewling (IMPF) for an hour (durative adverbial)
- 5b) \*I yatoula niaourise yia mia ora.  
The cat mewed (PF) for an hour (durative adverbial)
- 6a) Piyame sto tsirko mia fora.  
(We)-went (PF) to the circus once (cardinal count adverbial)
- 6b) \*Piyename sto tsirko mia fora.  
(We)-were going (IMPF) to the circus once (cardinal count adverbial)

It is obvious, therefore, that aspectual adverbials are sensitive to grammatical aspect and the perfective - imperfective distinction, that is, they “prefer” the one or the other aspectual value on the verb. It is for this reason that we chose to design the stimuli sentences of our experimental task employing aspectual adverbials. If aspectual adverbials are sensitive to the perfective – imperfective distinction, it is because they carry aspectual features, they encode information regarding the aspectual viewpoint from which an event is presented in a clause. This “sensitivity” in carefully formed

stimuli sentences is expected to provide indications about the children's acquisition of the semantics of aspect. In this sense, we may say that the perfective and the imperfective encode certain aspectual properties, and so do the different types of aspectual adverbials; therefore, we aim to look at how the children associate the properties of aspect on the verb with the properties of the aspectual adverbials, which would give us insights into the issue of the acquisition of the semantics of aspect. The stimuli sentences of our task were then designed to combine the two, that is, a verb marked for the perfective or the imperfective together with an aspectual adverbial.

### **3 The experiment**

#### **3.1 The experimental method**

An elicited imitation task was introduced to Greek children, aged 1;9,19 to 4;3,15. The children were asked to perform a sentence repetition task.

According to Chomsky (1964), 'the child's ability to repeat sentences... might provide evidence as to the underlying system that he is using'; it is under this assumption that a sentence repetition task can be employed to investigate children's grammars.

Further, some capacity for imitation appears to be innate (Meltzoff & Moore 1985). At the same time, it is not the case that anything can be imitated at any time in the child's development. It has been found that in order for a child to imitate a structure, 'the structure must apparently be part of the child's grammatical competence, for example, as evidenced in the child's natural speech' (Lust et al, 1996: 56).

So, if a child can successfully repeat an adult's utterance, where aspect, tense or mood are of a certain value, then it can be claimed that the child has the relevant form in its verbal system. This has been the hypothesis on which our elicited imitation task has been based; that is, elicited imitation can reveal the child's representation of an adult sentence, including possible differences from the adult representation.

#### **3.2 Aims and design of the stimuli sentences**

The design of the stimuli sentences was motivated by the following questions:

A) How do children acquire the semantics of aspect?

B) Further, given that aspect interacts with aspectual adverbials, the following questions triggered our experiment:

- What is the position that aspectual adverbials are base-generated at in children's grammars?

- What happens when there is more than one aspectual adverbial in the clause?
- What happens with the position aspectual adverbials have in children's grammar when other types of adverbials co-occur in the clause being uttered?

The stimuli sentences were designed as follows: In all the sentences an aspectual adverbial was present. In MG the verb is necessarily marked for grammatical aspect, so it is not easy to decide on the acquisition of the semantics associated with it. This is why aspectual adverbials were employed at this task; *the idea is that if the children can associate the properties of verbal aspect with those of aspectual adverbials, then this is an indication of them beginning to acquire the semantics of aspect.*

The aspectual marking on the verb was either the one preferred by the adverbial that was in the clause or one which, in combination with the adverbial, would make the clause ungrammatical. The child then had to imitate the sentence, by producing its own version of it.

There were also sentences with double adverbial constructions. Two aspectual adverbials were in the same clause; either both of them would favour the same aspectual value on the verb or the one would favour the perfective and the other the imperfective aspect on the verb. And again, even in these cases of additional complexity the child had to perform an elicited imitation task.

At a pilot study, it had been noticed that the subjects had the tendency to place the aspectual adverbial close to the verb, especially at a position immediately after the verb. That happened irrespective of the position the aspectual adverbial was placed in the input. For this reason I presented the children with sentences where the aspectual adverbial was distanced from the verb. Instead, a non-aspectual adverbial was intentionally placed immediately after to the verb, to check how the children would react to this. The aspectual adverbial was placed in positions other than pre- or post-verbally, and I had arguments and/or adjuncts in between the verb and the aspectual adverbial.

The same procedure was followed with each one of the subjects. The children actually thought that by repeating the stimulus sentences, they were actually teaching Greek to some aliens and to Kermit the frog.

## **4 The results**

### **4.1 Children's responses to the stimuli sentences – an overview**

The children's responses to the stimuli sentences were looked at. Table 1 provides an overview. The grammatical and the ungrammatical responses to grammatical and ungrammatical input were examined separately. The focus was mainly on

- a) the children's incorrect production of grammatical stimulus and
- b) their corrections of ungrammatical input .

It is important that children, when reproducing a grammatical stimulus, produce grammatical sentences themselves, maintaining a grammatical combination of aspect on the verb and aspectual adverbial. It is however even more important when the subjects are given an ungrammatical stimulus and upon reproduction they correct it; this is an indication of their ability to associate the properties of aspectual marking on the verb with the properties of the aspectual adverbials and, therefore, of them beginning to acquire the semantics of aspect.

If we look at *the decrease* in the frequency over age at which a grammatical stimulus was changed to an ungrammatical one and at *the increase* in the frequency at which an ungrammatical stimulus is changed to a grammatical one during this repetition task, this actually indicates that the children are acquiring the semantics of aspect. The decrease in the production of ungrammatical clauses given a grammatical input is more obvious after the age of 3,8.

Younger subjects up until the age of 3,5 seem to produce grammatical sentences given grammatical stimulus, but this may be because the younger the children the more imitative the nature of the task they are performing. It should be noted, however, that there is individual variation, which prevents us from seeing clearly marked differences with age. However, after 3,8, the difference in the subjects' responses becomes clear. When looking at the acquisition of the semantics of aspect in this fashion, however, that is, through the combination of verbal aspect with aspectual adverbials, we need to consider the following: In order for a child to be able to make the correct associations between the aspectual marking on a verb and the aspectual features associated with an aspectual adverbial, the child needs to have acquired verbal aspect and aspectual adverbials to a certain degree to be able to associate them correctly. So, it is probably the case that children acquire grammatical aspect and its semantics a bit earlier, and this experiment hinges upon the acquisition of aspectual adverbials as well as the acquisition of the semantics of lexical aspect.

It is for this reason, that a complete and accurate picture of how children acquire the semantics of aspect is available when we combine the results of experiments carried out following different experimental methods. The combination of a Story-telling task, spontaneous speech and a story selection task can give us a complete picture. However, in this paper I present the elicited imitation task.

	Eleana	Yioryos	Angelos (1)	Fei	Angelos (2)	Angelika	Sonia (1)	Christos	Sonia (2)	Vassilis	Ilias	Georgia	Total
1-Age on the day of the recording	1,9,19	2,8,27	3,5,16	3,5,26	3,7,4	3,7,10	3,7,24	3,8,7	3,10,11	3,11	4,1,12	4,3,15	
2-Input/stimulus sentences	8	24	26	19	23	22	23	22	24	19	21	24	255
<b>3-Grammatical stimulus sentences</b>	<b>5</b> <b>(62,5%)</b>	<b>17</b> <b>(70,8%)</b>	<b>15</b> <b>(57,6%)</b>	<b>14</b> <b>(73,6%)</b>	<b>13</b> <b>(56,5%)</b>	<b>13</b> <b>(59%)</b>	<b>14</b> <b>(60,8%)</b>	<b>13</b> <b>(59%)</b>	<b>15</b> <b>(62,5%)</b>	<b>10</b> <b>(52,6%)</b>	<b>13</b> <b>(61,9%)</b>	<b>15</b> <b>(62,5%)</b>	<b>157</b> <b>61,5%</b>
4-Child's grammatical response to grammatical input	4 (no response -1) (100%)	16 (94,1%)	15 (100%)	12 (85,7%)	9 (69,2%)	10 (76,9%)	10 (71,4%)	13 (100%)	14 (93,3%)	9 (90%)	13 (100%)	13 (86,6%)	139 88,5%
5-Child's ungrammatical response to grammatical input	0	1 (5,9%)	0	2 (14,3%)	4 (30,8%)	3 (23,1%)	4 (28,6%)	0	1 (6,7%)	1 (10%)	0	2 (13,4%) (only when non-asp adv)	18 11,5%
<b>6-Ungrammatical stimulus sentences</b>	<b>3</b> <b>(37,5%)</b>	<b>7</b> <b>(29,2%)</b>	<b>11</b> <b>(42,4%)</b>	<b>5</b> <b>(26,4%)</b>	<b>10</b> <b>(43,5%)</b>	<b>9</b> <b>(41%)</b>	<b>9</b> <b>(39,2%)</b>	<b>9</b> <b>(41%)</b>	<b>9</b> <b>(37,5%)</b>	<b>9</b> <b>(47,4%)</b>	<b>8</b> <b>(38,1%)</b>	<b>9</b> <b>(37,5%)</b>	<b>98</b> <b>38,5%</b>
7-child's grammatical response to ungrammatical input (corrections)	2 (66,6%)	4 (57,2%)	2 (18,2%)	4 (80%)	4 (40%)	3 (33,3%)	4 (44,4%)	4 (44,4%)	3 (33,3%)	5 (55,5%)	5 (62,5%)	6 (66,6%)	46 46,9%
8-child's ungrammatical response to ungrammatical input	1 (33,3%)	3 (42,8%)	9 (81,8%)	1 (20%)	6 (60%)	6 (66,6%)	5 (55,5%)	5 (55,5%)	6 (66,6%)	4 (44,4%)	3 (37,5%)	3 (33,3%)	52 53,1%
<b>9-total of child's grammatical responses</b>	<b>6</b> <b>(75%)</b>	<b>19</b> <b>(79,1%)</b>	<b>17</b> <b>(65,3%)</b>	<b>16</b> <b>(84,2%)</b>	<b>13</b> <b>(56,5%)</b>	<b>13</b> <b>(59%)</b>	<b>14</b> <b>(60,8%)</b>	<b>17</b> <b>(77,2%)</b>	<b>17</b> <b>(70,8%)</b>	<b>14</b> <b>(73,6%)</b>	<b>18</b> <b>(85,7%)</b>	<b>19</b> <b>(79,1%)</b>	<b>183</b> <b>71,7%</b>
<b>10-total of child's ungrammatical responses</b>	<b>2</b> <b>(25%)</b>	<b>5</b> <b>(20,9%)</b>	<b>9</b> <b>(34,7%)</b>	<b>3</b> <b>(15,8%)</b>	<b>10</b> <b>(43,5%)</b>	<b>9</b> <b>(41%)</b>	<b>9</b> <b>(39,2%)</b>	<b>5</b> <b>(22,8%)</b>	<b>7</b> <b>(29,2%)</b>	<b>5</b> <b>(26,4%)</b>	<b>3</b> <b>(14,3%)</b>	<b>5</b> <b>(20,9%)</b>	<b>72</b> <b>28,3%</b>

Table 1: The subjects' responses to grammatical and ungrammatical input, their incorrect "correction" of grammatical input and their correcting of ungrammatical input

## 4.2 Ways of correcting ungrammatical stimuli

The means the children were employing when correcting ungrammatical stimuli to produce grammatical utterances were looked at. These are summarized as follows:

**a) in some cases, the omission of the aspectual adverbial resulted in a grammatical clause, as exemplified in (8)**

- 7a) I Maria etroye payota oli mera kathe mera  
Maria was eating (IMPF) ice-creams all day every day (stimulus sentence)
- 7b) I Maria etroye payota oli mera  
Maria was eating (IMPF) ice-creams all day  
(Ilias 4,1,12)
- 8a) \*To liontaraki diavase sinithos ena paramithi.  
The little lion read (PF) usually a story (stimulus sentence)
- 8b) To liontaraki diavase ena paramithi.  
The lion read (PF) a story (Angelos 3,7,4 – omission)

It should be noted here that the omissions of the aspectual adverbials do not seem to correlate with the length of the stimulus utterance.

**b) they changed the aspect the verb was marked for, i.e. from perfective to imperfective and vice versa, as exemplified in (9) and (10):**

This correction was either spontaneous upon repetition of the adult stimulus utterance:

- 9a) \* Diava-s-a sinithos ena paramithi.  
(I) read (PF) usually a story. (stimulus sentence)
- 9b) Ki eyo diava-z-a sinithos ena paramithi.  
And I was usually reading (IMPF) a story too. (Angelos - 3,5,16)

Sometimes the correction occurred after the child had been offered two alternatives, and it would choose the grammatical one as in (10a) to (d).

- 10a) \* To arkoudaki horep-s-e sinehia.  
The bear danced (PF) all the time. (stimulus)
- 10b) \* To arkoudaki hore-s-e sinehia.  
The bear danced (PF) all the time (imitation)

- 10c) *Ti ekane? Horep-s-e sinehia I horeve sinehia?*  
 What did it do? Danced (PF) all the time? Or was it dancing (IMPF) all the time? (two alternatives are being introduced to the child)
- 10d) *Horeve.*  
 It was dancing (IMPF) (Angelos - 3,5,16)

or

- c) the children changed the aspectual adverbial given to them in the stimulus sentence, by substituting it for another of the same or different aspectual type.**

In (11a) and (b), the child successfully substitutes one adverbial with another of the same type, and this results in a grammatical utterance that has the same aspectual interpretation. This may be an indication that the child has actually understood the semantics of the adverbial of the stimulus sentence.

- 11a) *To liontaraki diava-z-e sinithos ena paramithi.*  
 The lion was usually reading (IMPF) a story (stimulus sentence)
- 11b) *To liontaraki diava-z-e kathe mera ena paramithi.*  
 The lion was reading (IMPF) every day a story (Yioryos 2,8,27 - substitution)

However, the substitution of an adverbial, occasionally, with another of a different class is more important. As a result, the ungrammatical stimulus (12a) becomes the grammatical (12b):

- 12a) *\*O Kostas etroye ena payoto dio fores.*  
 Kostas was eating (IMPF) an ice-cream two times. (stimulus sentence)
- 12b) *O Kostas etroye ena payoto kathe mera.*  
 Kostas was eating (IMPF) an ice-cream every day. (Vassilis 3,11)

Finally, sometimes the children produced their own version of what they had been told. (13b) is a striking example:

- 13a) *\*Sinithos eftiak-s-a to pehnidaki se ligi ora.*  
 Usually I made (PF) the little toy in little time. (stimulus sentence)
- 13b) *Telo-s-ame se ligi ora ta pehnidakia ke pezume sinehia.*  
 We finished (PF) (making) the little toys in little time and we play (IMPF) all the time. (Sonia - 3,7,24)

Sonia (3;7,24) was given the ungrammatical utterance (13a) during her sentence repetition task. The verb is in the perfective form and there are two adverbials, a frequency one (“sinithos”- usually) and a durative completive one (“se ligi ora”- in little time, in a while), the former normally combining with imperfective and the later with perfective aspect. Upon her repetition task she picked up the meaning of the clause given to her and she produced two clauses: 1] telosame se ligi ora ta pehnidakia (we finished (PF) (making) the little toys in little time) and 2] pezume sinehia (we play (IMPF) all the time). The clauses she produces are an indication of her acquisition of the semantics of aspect.

These “imperfect” imitations of adult speech, namely the omissions, the substitutions, the rephrasing of stimuli sentences, produced by the subjects are much more significant, as they can plausibly be taken to be genuine exemplars of their own speech; in attempting to repeat an adult utterance, they produced a counterpart of the adult utterance. So, they were not simply blindly repeating unprocessed bound-sequences, but rather were “processing heard speech according to their own inner structure”(Slobin 1979). But if imitative speech is indeed processed through the child's grammar, it can clearly provide us with a valuable source of evidence about the nature of the child's competence.

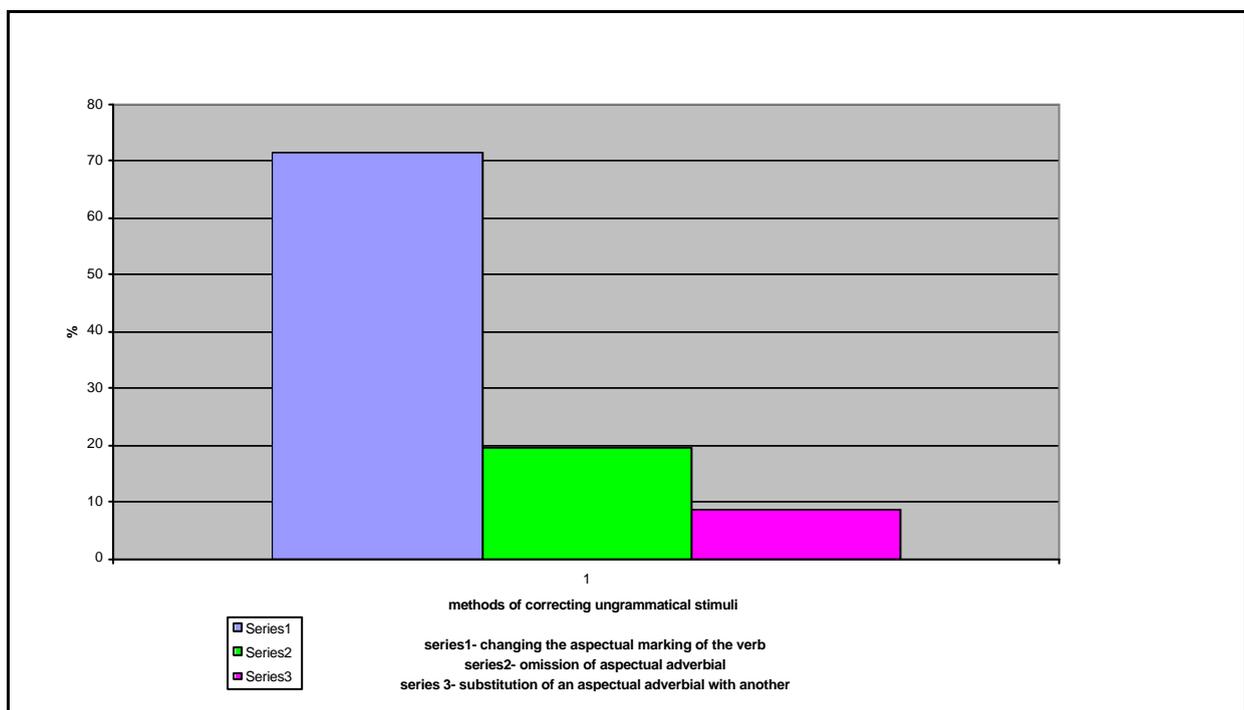


Figure 1: Children's methods of correcting ungrammatical stimuli

As indicated in figure 1 above, it is significant that of all the different alternative ways children employed to correct ungrammatical stimuli, namely the omission of an

aspectual adverbial, the substitution of an aspectual adverbial with another one of the same or of a different aspectual class and the change of the aspectual marking on the verb, most frequently they would change the aspectual marking on the verb.

In other instances, but not as frequently, they omitted the aspectual adverbial of the clause, this leading to a grammatical sentence. Not being able to associate verbal aspect with the appropriate aspectual adverbial, they would omit the latter.

### 4.3 Children's positioning of the aspectual adverbial in the clause

The children's responses during their sentence imitation task were looked at in terms of the position the aspectual adverbial was placed in upon reproduction of the stimulus.

The tendency of the subjects to place the aspectual adverbial to a position adjacent to the verb, regardless of its position in the stimulus sentence, was striking. That could suggest that there is a stage in their grammar that children have only this position for the aspectual adverbial. 14b and 15b exemplify the placement of the adverbial to this position:

14a) *Kathe mera pigeno ston pediko stathmo.*

I go to the playgroup every day. (stimulus)

14b) *Erhome kathe mera ston pediko stathmo.*

I come every day to the playgroup. (Fei 3,5,26)

15a) \* *I Maria efaye ena payoto kathe mera.*

Maria ate an ice-cream every day. (stimulus)

15b) *I Maria etroye kathe mera ena payoto.*

Maria was eating every day an ice-cream. (Fei 3,5,26).

There are instances, however, where in the sentence repetition task the adverbial is retained in a position other than the post-verbal one.

All the above are to be viewed in terms of the positioning of aspectual adverbials in adult Greek. In adult Greek, aspectual adverbials can occur at the beginning or at the end of the clause, pre- or post-verbally, or post-VP. The positioning of aspectual adverbials in adult Greek is exemplified in (16):

16a) *I Maria etroye payoto kathe mera*

The-Maria was eating-IMPF ice-cream every day-asp adv

Maria was eating ice-cream every day.

- 16b) I Maria etroye *kathe mera* payoto.  
The-Maria was eating-IMPF every day-asp adv ice-cream.  
Maria was eating ice-cream every day.
- 16c) *Kathe mera* o Yioryos pigaine sto sxoleio.  
Every day the-George was going-IMPF to school.  
George was going to school every day.
- 16d) O Yioryos pigaine sto sxoleio *kathe mera*  
The-George was going-IMPF to school every day.  
George was going to school every day.

The aspectual adverbials in the clauses the children uttered upon reproduction of the stimuli utterances were looked at in respect of the following:

- A) the positioning of the aspectual adverbials
- immediately after the verb
  - after the VP complement
  - adjacent to the verb, but occurring pre-verbally and
  - elsewhere in the clause (clause initially or finally).

The details on A are shown in figure 2 below.

- B) I also looked at the number of times the aspectual adverbial has shifted to a position adjacent to the verb, immediately following it
- C) The number of times that an aspectual adverbial shifts right after the VP complement is also presented
- D) Finally, the number of times that an aspectual adverbial shifted away from the verb in the subjects' clauses

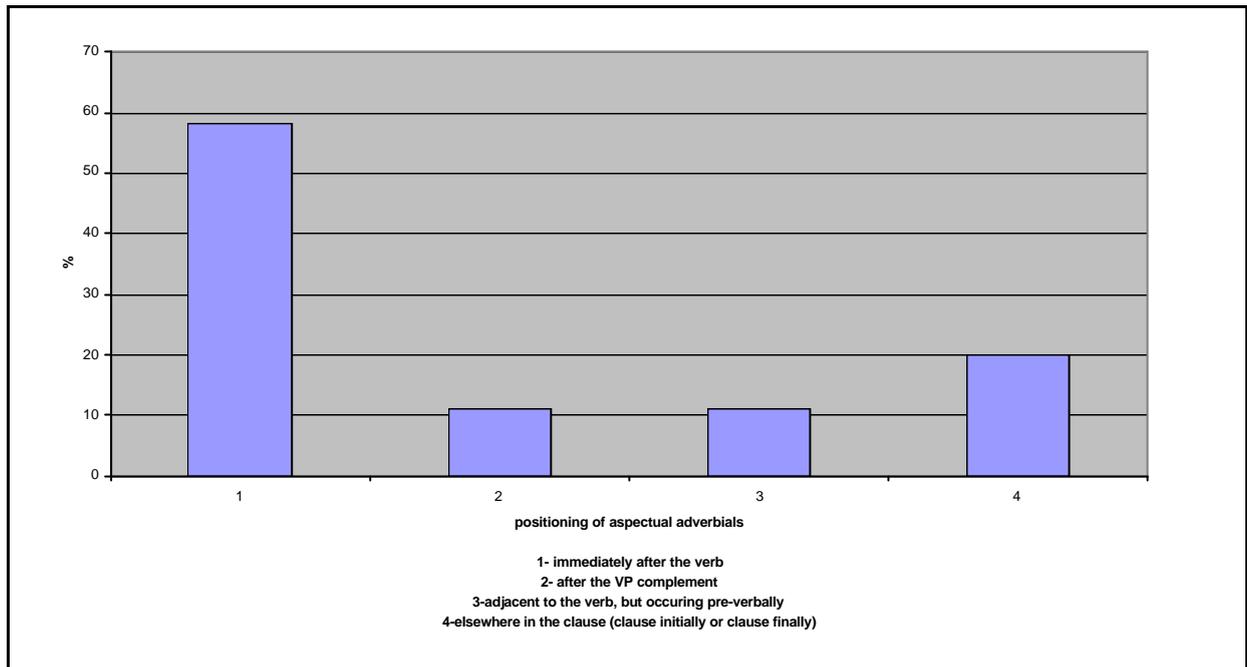


Figure 2: The positioning of aspectual adverbials in children's utterances

The percentages indicating the number of times that an aspectual adverbial that was found right next to the verb in the children's utterances had actually shifted to this position, from a position elsewhere in the stimulus clause, were statistically high.

On the contrary, the percentages indicating the number of times that a child was moving an aspectual adverbial from a position adjacent to the verb to a position further from it were extremely low.

Looking at the children's reproduction utterances, 57 (out of 127) times that an aspectual adverbial was found right after the verb, it had actually been moved to this position. They were moving the aspectual adverbial to this position both in their grammatical productions (41,4%) and in their ungrammatical ones (54,5%). This may suggest that already from the beginning when they try to associate the semantics of verbal aspect with the semantic properties of aspectual adverbials, they are aware of the interaction (and interrelation) between the two. That's probably why they attempt to put them close to each other, even if they are not able to fully associate their semantic properties just yet.

The children seem to have a preferred position for the aspectual adverbial, they place it adjacent to the verb. Is this shift due to syntactic or to semantic reasons? To investigate this a few more stimulus utterances were presented to the subjects, in which the aspectual adverbial was adjacent to the verb, but in a pre-verbal position. The idea is that if the children move it to the post-verbal position, then the reasons are of syntactic nature, if not, then it is probably for semantic reasons that they want the aspectual adverbial adjacent to the verb in either position.

The testing has actually shown that the subjects place an aspectual adverbial from a position immediately preceding the verb to the position immediately after the verb. The opposite does not occur in my data. However, as the children become older this placement of the aspectual adverbial to the position immediately after the verb is not as frequent, possibly because the other positions become available in the child grammar.

To try to explain this preference, a close look needs to be taken at the position where adults base-generate aspectual adverbials.

	Eleana	Giorgos	Angelos (1)	Fei	Angelos (2)	Angelika	Sonia (1)	Christos	Sonia (2)	Vassilis	Ilias	Georgia	Total
1-aspectual adverbials in child's clauses	5	21	21	16	15	18	18	19	25	18	17	25	218
2-non-aspectual adverbials in child's clauses	0	0	0	0	5	4	0	4	5	3	1	4	26
3-placement of the aspectual adv next to the verb: post-verbally in a grammatical clause	3 60%	11 52,3%	6 28,5%	6 37,5%	3 20%	6 33,3%	8 44,4%	7 (+2) 47,3%	14 56%	8 (+1) 50%	8 47%	8(+3) 44%	94 43,1%
4-placement of the asp adv next to the verb: post-verb in an ungram clause	1 20%	5 23,8%	7 33,3%	2 12,5%	(2) 13,3%	2 11,1%	6 33,3%	0	2 8%	(2) 11,1%	1 5,8%	3 12%	33 15,1%
<b>5-total number of placement of the aspectual adv after the verb</b>	<b>4 80%</b>	<b>16 76,1%</b>	<b>13 61,9%</b>	<b>8 50%</b>	<b>5 33,3%</b>	<b>8 44,4%</b>	<b>14 77,7%</b>	<b>9 47,3%</b>	<b>16 64%</b>	<b>11 61,1%</b>	<b>9 52,8%</b>	<b>14 56%</b>	<b>127 58,2%</b>
6-placement of the asp adverbial after the VP complement	1 20%	2 9,5%	2 9,5%	1 6,2%	2 13,3%	0	0	3 15,7%	5 20%	3 16,6%	3 17,6%	2 8%	24 11%
7-placement of the asp adverbial next to the verb: pre-verbally	0	1 4,7%	3 14,2%	3 18,7%	0	5 27,7%	3 16,6%	1 5,2%	0	1 5,5%	3 17,6%	4 16%	24 11%
8-placement of the aspectual adverbial elsewhere in the clause	0	2 9,5%	3 14,2%	4 25%	7 46,6%	5 27,7%	1 5,5%	6 31,5%	4 16%	3 16,6%	2 11,7%	5 20%	42 19,2%
<b>9-how many times the asp adv moves next to the verb in a grammatical clause</b>	0	2 18,1%	2 33,3%	3 50%	2 66,6%	5 83,3%	4 50%	3 33,3%	7 50%	4 44,4%	0	7 63,6%	39 41,4%
<b>10-how many times asp adv moves next to verb in an ungram clause</b>	0	0	2 28,5%	0	2 100%	2 100%	3 50%	0	2 100%	3 100%	1 100%	3 100%	18 54,5%
<b>11-how many times in total is the asp adv moves right next to the verb?</b>	0	2 18,1%	4 30,7%	3 37,5%	4 80%	7 87,5%	7 50%	3 33,3%	9 56,2%	7 63,6%	1 11,1%	10 71,4%	57 44,8%
<b>12-how many times the asp adv moves next to verb complement?</b>	0	0	0	0	0	0	0	0	1 20%	0	0	1 50%	2 8,33%
13-how many times is the asp adv moved away from the verb?	0	0	0	0	1 6,6%	2 11,1%	0	0	0	0	0	0	3 1,37%

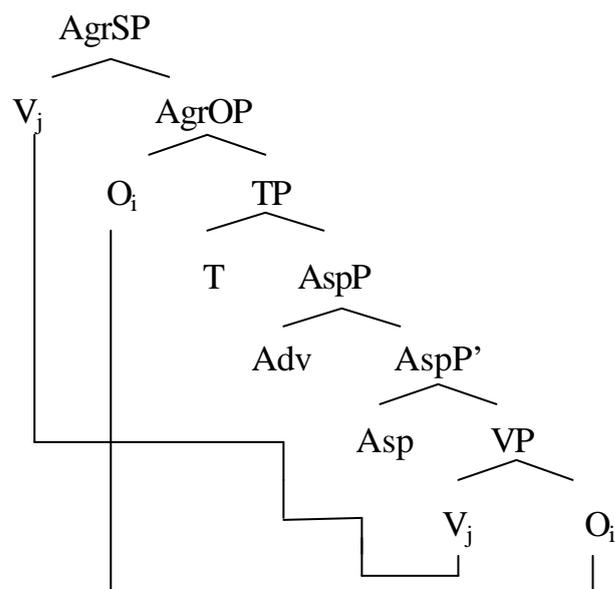
Table 2: Positioning of the aspectual adverbial in the clause

#### 4.4 On aspectual adverbials

Alexiadou (1994) proposes the adverbial licensing criterion: “adverbs are licensed as specifiers of functional projections by the relevant feature associated with the head” (1994: 46). Additionally, she proposes a very restrictive approach, where each adverb class is licensed by one and only head. This claim presupposes the existence of features in the adverbs, which must be in an agreement relation with the licensing head. Thus, as Cinque (1999) argues, a system that analyses adverbs as specifiers is a more restrictive one than a system that analyses them as adjuncts. Adverbs appear in limited number, as there is a limited number of functional projections. Their restrictive relative order follows if they are specifiers, but does not if they are adjuncts, since adjuncts are supposed to be rather free and there is no principled reason to constrain their distribution.

I will adopt Cinque and Alexiadou in my approach: Aspectual adverbials are generated in the specifier position of the AspP in MG and are licensed under feature matching, i.e. agreement with the relevant head features. The adverb should be a specifier of a head in order to be formally licensed. Furthermore, its features match those of the respective head. Adverbs being licensed as specifiers of functional projections, aspectual adverbials are taken to be universally on a left branch. So, in the case of an overt order where the V precedes the adverb, the verb has moved past the adverb. In addition, the adverb is generated in this position, i.e. the licensing configuration is not reached via movement.

The following diagram could be the representation of an overt order where the verb and its complement precede the adverb:



The tree diagram above could be the representation of a sentence like “*Etroye payota sinehia*” (he was eating ice-cream all the time). Aspectual adverbials are on the left branch and they are in the specifier position of AspP. In order to get a sequence like “*Etroye payota sinehia*”, the verb moves up the tree, first being checked for aspect, then for tense and other features and it moves leftward to AgrSP, leaving its trace behind. The object “*payota*” also has to move leftward leaving its trace behind, in order to get the overt order. AspP is placed lower in the tree and before TP, to be consistent with the principle for “aspect before tense” hypothesis. This linguistic principle, according to Woisetschlaeger (1976) and Bybee (1985) (in Li 2000) specifies that grammatical aspect markers are generally positioned closer to the verb stem than are the tense markers in the world’s languages.

The question is how this tree-diagram relates to the children’s placement of the aspectual adverbial to a position immediately following the verb. If you look at the tree diagram, before any movement of the verb and the object takes place, the word order is: Adv-V-Obj. Now, I assume that the child can acquire V-to-I movement on the basis of the presence of rich agreement in Greek, (without recourse to word order). In the early stages of acquisition he or she will have V-Adv-O as the basic word order, with the aspectual adverbial in a position immediately following the verb. This is what occurred in my data. The adult stage is reached after object movement is acquired, yielding V-O-Adv order, as well as various focus-related movements which derive the observed word order freedom.

## 5 Conclusion

In conclusion, it has been shown that the way children combine aspectual adverbials with verbs marked for viewpoint aspect can provide insights into their acquisition of the semantics of aspect. This has been looked at in terms of the ways children employ to correct an ungrammatical input: a) the omission of the aspectual adverbial, b) the changing of the aspectual marking on the verb, or c) the substitution of one aspectual adverbial with another one in a clause. Regarding the positioning of aspectual adverbials in children’s grammars, it has been found that they place the aspectual adverbial to the position immediately after the verb.

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