

# The imperfective past in child Greek\*

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## Abstract

In this paper we present results from a comprehension task regarding Greek children's understanding of the completion entailments of the Past Perfective (Aoristos) and the Past Imperfective (Paratatikos) with creation and change-of-state predicates. Children are found to perform better in the past perfective than the past imperfective. In accordance with previous research in Russian (Kazanina & Philips 2003), the main problem lies in associating the past imperfective with incomplete events. In addition, although the children's overall performance remains almost the same between the two types of predicates, there is a slight improvement in the past imperfective with creation predicates.

**Keywords:** telic, perfective, imperfective, past, acquisition, Greek

## 1. Introduction

In this paper we present results from a comprehension task regarding Greek children's understanding of the past perfective and the past imperfective. First we need to refer briefly to the notions of tense, lexical and grammatical aspect. According to Comrie (1985), tense is the "grammaticalisation of a location somewhere in time line, in relation to some other specific point" and aspect is the "grammaticalisation of the expression of internal temporal constituency". Aspect is further divided in lexical and grammatical aspect. Lexical aspect (or 'situation types', according to Smith (1990)) is expressed by the verb and its arguments and refers to the semantic characteristics inherent in the lexical content of words. It is subdivided into telic predicates, which refer to an event with an inherent endpoint (e.g. *build a house*) and atelic predicates, which refer to an event without an inherent endpoint (e.g. *love*). Grammatical (or 'viewpoint' according to Smith (1990)) aspect is usually expressed by a grammatical morpheme attached to the verb and refers to the speaker's perspective of a situation. It comprises two components<sup>1</sup>, perfective and imperfective morphology, with their main difference lying in their completion entailments. Perfective morphology (e.g. *I built a house*) refers to complete events only, while imperfective morphology (e.g. *I was building a house*) can refer to complete, incomplete or events in progress.

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<sup>1</sup> Smith (1990) suggests that there are three types of grammatical aspect: perfective, imperfective and neutral aspect, where neutral aspect refers to aspectually vague sentences (e.g. the Future in French).

In Greek, the acquisition of tense and aspect has been tested so far only with studies that examined developmental data. In the data, both the perfective and imperfective verb stems appeared in child Greek almost simultaneously from a very young age, but there was a delay in the emergence of the past imperfective in comparison to the past perfective tense (Stephany 1981; Kati 1984). More specifically, Stephany (1981) mentions that the present tense (imperfective stem) and the past perfective (perfective stem) were the first tenses to appear already by 1;10, while the past imperfective began to be used at 2;4.

The past imperfective is associated with what is known in the literature as the ‘Imperfective Paradox’ (Dowty 1979). The ‘Imperfective paradox’ refers to the completion entailments of telic predicates when they appear with imperfective aspect. Let us consider the two sentences below, which differ only regarding their lexical aspect (an atelic predicate in sentence (1) and a telic predicate in sentence (2)):

- (1) John was playing with a friend.
- (2) John was building a house.

Sentence (1), with imperfective aspect and an atelic predicate, entails the sentence in the simple past (i.e. John played with a friend), while sentence (2) with imperfective aspect and a telic predicate cannot entail that ‘John built a house’. While even some playing with a friend is sufficient to say that John actually played with a friend, John’s involvement into building a house is not enough to say that John built a house (Landman 1992). This is due to the fact that an interruption might happen, which can stop the building of the house. We already mentioned that while atelic predicates can denote complete, incomplete or events in progress, telic predicates can only refer to complete events. Consequently, when a telic predicate is combined with imperfective aspect, its completion entailments are eliminated.

## 2. Tense and aspect in Greek

In Greek tense and aspect are closely related in the verbal morphology, remaining though independent. Tense is marked in the inflectional ending (e.g. present *pez-o* and past *epez-a*), while grammatical aspect is marked through the verb stem (e.g. imperfective *epe-z-a* and perfective *epe-ks-a*). The present tense appears only in the imperfective and the past has both perfective and imperfective stems. Lexical aspect is an independent factor as well, with telic and atelic predicates being able to appear with both types of grammatical aspect and in all tenses. This interplay of grammatical and lexical aspect in the past, with which we will be concerned in this task, can be seen in Table 1:

**Table 1.** The interplay of past tense, grammatical and lexical aspect in Greek

	<i>Perfective (Aoristos)</i>	<i>Imperfective (Paratatikos)</i>
<i>Telic</i>	extis-a (I built)	extiz-a (I was building)
<i>Atelic</i>	epeks-a (I played)	epez-a (I was playing)

### 3. The task

We will present a modified truth-value judgment task with the methodology based on Kazanina & Philips (2003). The primary aim is to test children's understanding of the completion entailments of the two past tenses in Greek (perfective and imperfective).

#### 3.1 Subjects

Subjects of this task were thirty-six monolingual Greek-speaking children and ten adult native speakers of Greek. The children were tested individually in a quiet room of their kindergarten and the adults at their homes in Athens, Greece. Each child, but none of the adults, participated in a pre-test, examining his/her ability to indicate items on a road setting. Six children in total were excluded from the final calculations: two children did not demonstrate the ability to indicate more than one location in the control question, a third child failed to complete half of the actual test and the remaining three children were inconsistent in the responses they provided to the test questions and their truth-value judgments. The children's age ranged from 3;0 to 6;4 with a general mean age of 4;6. They were further divided into two smaller age groups: the younger group consisted of fifteen children aged 3;0 to 4;7 (mean age 3;9) and the older group consisted of fifteen children aged 4;10 to 6;4 (mean age 5;2). Children saw a total of eight experimental stories presented in two sessions (four experimental stories in each session) lasting 10 to 15 minutes each and with a time interval of no longer than one week between the sessions, while all the stories were presented in a single session to the adults.

#### 3.2 Design

There were eight events examined that were acted out in front of the children with the help of toys. Lexical aspect was held constant throughout the task with only telic events tested, so that we could perform incomplete events in the past. Four of the events examined were creation (CR) predicates and the other four were change of state (COS) predicates. The difference between the two types of verbs lies in the direct object, which in the COS verbs exists irrespectively of the event's completeness, while for the CR verbs it does not exist at the beginning of the event but comes into existence as the event progresses. More specifically, with CR predicates the event is measured through "the physical extent of object" (Smollett 2004), while with COS verbs the event is measured through "a changing property" of the object (Smollett 2004).

The CR predicates were: *xtizo ena spiti* 'build a house', *zografizo ena prosopo* 'draw a face', *ftiaxno ena pazl* 'do a puzzle', *enono ena pexnidi* 'assemble a toy'. The COS predicates were: *yemizo ena potiri* 'fill in a glass', *ksetiliyo ena doru* 'unwrap a present', *βαφο ena luludi* 'paint a flower', *adiazo mia kupa* 'empty out a cup'. In order to examine both past tenses, we asked two test questions for each event: one question was formed with the past perfective and the other one with the past imperfective.

#### 3.3. Procedure

Each subject was presented with an illustration of a road drawn on a piece of paper for each event. The toys involved in each event appeared three times on the road, in the three distinct locations defined by a tree, a house and some flowers (Wagner 2001). The children were introduced to the agent of the actions (a toy-rabbit) and to a puppet that

was sitting with them during the acting out of the stories. The rabbit was performing each event completely in one location (*complete* location hereafter), incompletely due to an interruption in another location (*incomplete* location) and it did not perform it at all in the remaining location (*null* location). The three event types were randomly presented within and across trials to the subject and the interruption happened twice in each story, in the *incomplete* and in another location.

The agent (rabbit) was leaving the road setting when each story ended and the subject could see what had happened in the story through the layout of the toys in the three locations. When the rabbit had left, the subject was asked the test and control questions. The test questions referred to the past imperfective and perfective tenses and the control question was about the location of the interruption<sup>2</sup>. Since the interruption happened in two locations on the road, the control question provided us with the chance to evaluate the children's ability to hold multiple locations of an event in mind and to indicate them in a single question.

The correct answer to the past perfective question required the indication of the *complete* location and the correct one to the past imperfective required the indication of both the *complete* and the *incomplete* locations. In order to help the children indicate two of the locations, after each of the test and control questions, there was a follow-up question about whether the event happened anywhere else, in case the children have indicated only one location as an answer to the test question. The grammatical aspect that was used initially in the test question was also the one used in the follow-up question.

After the child finished answering the questions, the puppet provided a judgment of what happened during each story, by indicating the location(s) that he considered to be correct for the past perfective or imperfective. The child's task was to judge the puppet's indications. The puppet was rewarded with a banana when the children agreed with his judgments and it was given a rock when children considered him to be wrong. If children disagreed with the puppet's judgment, they were asked to correct him and provide a reason for their negative answers; consequently, we had the chance to follow the children's way of thinking in the task. In addition, we had the possibility to evaluate the consistency of the children's answers, by comparing their original answers with their judgments about the puppet's indications.

The test questions and the events within each session were randomly presented across and within subjects. Children answered either by pointing to the location they considered correct or by uttering the distinctive characteristic of the chosen location (the tree, the house or the flowers). The children were uniformly praised for their responses. Below the scenario and the relevant questions for the event *yemizo ena potiri* ('fill in a glass') can be seen:

Scenario for the event *yemizo ena potiri* ('fill in a glass'):

The rabbit starts walking on the road and reaches the first location.

Rabbit: *What a nice house! And what is that? A glass? I suppose it is here for the animals to drink from it. But there is nothing in it. Let me pour some of the juice I have with me.*

The rabbit fills in the transparent glass with his juice.

Rabbit: *I am very glad now. I will continue my walk.*

The rabbit walks and reaches the second location.

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<sup>2</sup> The control question was always uttered between the two test questions.

Rabbit: *Look at that tree and all the birds! Oh! There is another glass here. And this is empty as well. This is strange. Let me put some juice here too.*

The rabbit puts some juice and then a snake appears (1<sup>st</sup> interruption).

Rabbit: *Aah, a snake! I am so afraid of snakes. I should better leave before it bites me.*

The rabbit leaves and reaches the third location.

Rabbit: *A third glass is here! I can't believe it. I will put some juice in here then.*

A snake appears again (2<sup>nd</sup> interruption).

Rabbit: *Aah! There is another snake here. I am leaving immediately and going home.*

The rabbit leaves the road scenery and the experimenter asks the subject the questions illustrated in Table 2:

**Table 2.** Test and Control questions for the event *γemizo ena potiri* ('fill in a glass')

Past Perfective	<i>Pu γemise ena potiri o layos?</i> 'Where did the rabbit fill in a glass?'
Follow-up	<i>Γemise ena potiri kapu alu o layos?</i> 'Did the rabbit fill in a glass anywhere else?'
Past Imperfective	<i>Pu γemize ena potiri o layos?</i> 'Where was the rabbit filling in a glass?'
Follow-up	<i>Γemize ena potiri kapu alu o layos?</i> 'Was the rabbit filling in a glass anywhere else?'
Control question	<i>Pu ide ena fidi o layos?</i> 'Where did the rabbit see a snake?'
Follow-up	<i>Ide ena fidi kapu alu o layos?</i> 'Did the rabbit see a rabbit anywhere else?'

### 3.4 Results

Before proceeding to the results of the task, there are three issues that need to be addressed. First, we need to explain how we calculated the result proportions. As has already been said, children were asked two questions for each of the past tenses; a test and a follow-up question<sup>3</sup>. It is reported in the literature that when children encounter an ambiguous sentence (Crain & Thornton 1998) or when they are asked whether a sentence that an adult has uttered is acceptable (Grimshaw & Rosen 1990), they tend to provide a 'yes' answer. In addition Guasti (2004) suggests that when children are asked the same question twice and "since a normal grown-up does not pose the same question a second time if she has already received a satisfactory answer" (Guasti 2004: 477), they tend to think that in the second occasion the adult's question must have a different interpretation.

According to the above, the follow-up question asked in our task could be influenced by a 'yes' bias; it requires a 'yes/no' answer and it essentially has the same meaning as the test question, expressed in a somewhat different form. If we accept that children have a general tendency to answer 'yes' in contexts like the one presented in this task, then a large number of our subjects is expected to indicate one location in the test question and answer 'yes' (and then indicate another location) in the follow-up question, as a result of this bias. In order to eliminate the bias from the results, we

<sup>3</sup> The follow-up question was uttered by the experimenter only if the children had provided only one location as an answer to the test question.

employed the following procedure. Children could be assigned to three behavioral categories depending on the way they answer the test and the follow-up questions:

- a) Children indicating both locations (*complete* and *incomplete*) in the test question, in which case no follow-up question is asked.
- b) Children indicating one of the locations (*complete* or *incomplete*) in the test question and answering ‘no’ in the follow-up question.
- c) Children indicating one of the locations (*complete* or *incomplete*) in the test question and answering ‘yes’ in the follow-up, indicating their choice of the second location.

The children that might be influenced by a ‘yes’ bias would belong to category (c) above. These children have two options in the test question: to indicate the *complete* or the *incomplete* location. For the past perfective test question only the *complete* location is a correct answer. Consequently, if a child’s first indication in the test question is the *incomplete* location, then this child answers incorrectly. What we are interested in, are the children that indicated the correct (*complete*) location first (in the test question) and answer ‘yes’ in the follow-up question. These children’s answers were excluded from the final calculations<sup>4</sup>.

In order for a balance to exist in the analysis of the task, the same procedure was followed in the past imperfective question as well. The problem arising here is that both locations are the correct answer to this type of question. Consequently, we are again concerned with the children in category (c) presented above, disregarding their first indication of location (*complete* or *incomplete*) in the test question. Within this category, the proportion of answers excluded from the analysis of the past imperfective was the same as that excluded from the analysis of the past perfective.

The second issue that arose from the children’s answers, has been observed also in Kazanina & Philips’ (2003) task, but at a much smaller frequency than it appeared here. More than half of the children participating in our task used an adverbial like ‘halfway’, at least once in their answers, in order to express that the event was only partially performed in the *incomplete* location. So, when they were asked one of the test questions, they answered with a sentence like (3) indicating the *complete* and the *incomplete* location respectively:

- (3) *edo olo ke.edo miso*  
 here whole and here half  
 ‘here (*complete* location) the whole and here (*incomplete* location) halfway’

The problem that emerged was how to categorize these answers and in doing so we decided to examine the adult grammar. Thirty adult native speakers of Greek were asked to provide judgments as to whether they would accept a ‘halfway’ adverbial with verbs in the past perfective and the past imperfective. Each adult judged ten sentences twice (in the past perfective and the past imperfective) and half of the sentences were formed with a creation and the other half with a change-of-state verb. Adults appeared to accept a ‘halfway’ adverbial with a verb in the past perfective but not in the past imperfective. What is particularly troubling is that children in the task provided ‘halfway’ answers (like (3)) not only for the perfective but also for the imperfective test questions. Consequently, if a child provided a ‘halfway’ response in both the past perfective and the past imperfective test questions, we took it that s/he does not understand the difference between the two and these were both categorized as a separate

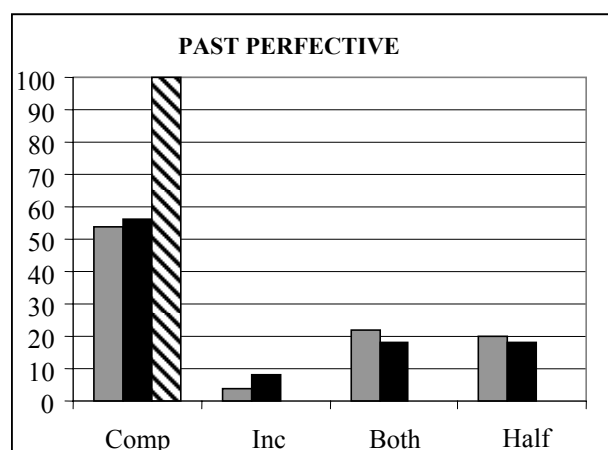
<sup>4</sup> The amount of answers that were excluded regarding the Past Perfective consist of 12% of the children’s overall answers to creation predicates and 14.4% of their overall answers to change-of-state predicates.

answer in the results (named ‘Half’). On the other hand, if a child used the ‘halfway’ adverbial only with the past perfective, it was categorized as a correct answer for the perfective test question (as an indication of the *complete* location). The third possibility of a ‘halfway’ answer to exist for the past imperfective only, did not appear at all in the results.

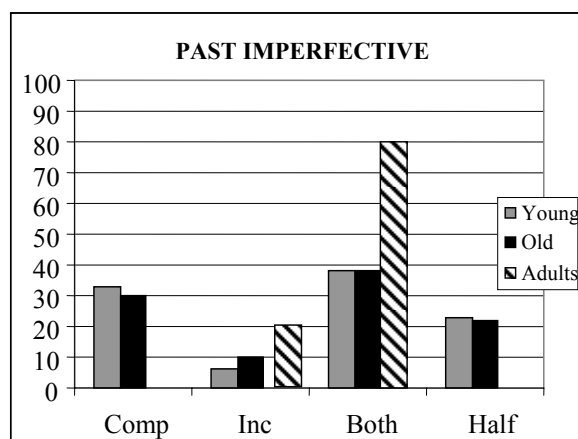
Finally, the issue of the chance level performance needs to be addressed. Originally, children were given the possibility to indicate either one of the three locations or any combination of them; so, there were seven possible options. Since children were only selecting three of the seven options (the *complete*, the *incomplete* or ‘both’ locations) and the ‘halfway’ answers were also inserted as a separate category in the results, we recalculate the chance level; there were four options for the children (*complete*, *incomplete*, ‘both’, ‘half’) and consequently the chance level performance was set at 25%.

### 3.4.1 Change-of-state predicates

In Figure 1(a&b) it can be seen that adults accept only the *complete* location as an indication for the past perfective question, while in the past imperfective, they mainly select ‘both’ locations (*complete* and *incomplete*). Interestingly enough, there are two adults that select only the *incomplete* location for the past imperfective, which suggests that the past perfective and imperfective are considered by a small amount of adults as counter-exclusive. Regarding the children’s performance, quite a clear picture develops for the past perfective, while the past imperfective seems more problematic. The *complete* location (i.e. the correct one) is indicated around 55% for the past perfective, which is very significantly above chance ( $p < 0.01$ ). On the other hand, children’s answers in the past imperfective are almost equally divided between the indications of the *complete* and ‘both’ locations and none of them can be distinguished from chance performance. What seems to be the main difficulty for children with the past imperfective is to associate it with incomplete events.



**Figure 1a.** Past perfective with change-of-state predicates



**Figure 1b.** Past imperfective with change-of-state predicates

Although the children's answers for the past imperfective are at chance level, there are some important differences in the way they answer the two test questions. They select significantly more times 'both' locations as an answer for the past imperfective ( $p < 0.01$ ) than the past perfective and significantly more times the *complete* location as an answer for the past perfective ( $p < 0.01$ ) than the past imperfective. Consequently, they do understand that there is a difference between the two, even though they cannot yet produce it in a large proportion. Regarding the two age groups, no important difference in their performance is observed, while both age groups perform significantly worse than adults do ( $p < 0.001$ ) in the past perfective as well as the past imperfective.

### 3.4.2 Creation predicates

The adults' answers with CR predicates (see Figure 1a, b for performance of all groups) are the same as for the COS ones; the *complete* location is indicated for the past perfective and 'both' locations for the past imperfective. The children perform significantly worse than adults ( $p < 0.001$ ) in both tenses, but their primary answers in each tense follow the adult grammar. In the past perfective the *complete* location is the main answer, significantly above chance, by both age groups indicating a very good grasp of the past perfective. On the other hand, 'both' locations are indicated correctly for the past imperfective question, in a proportion significantly above chance only by the older group of children. The younger children remain at chance between the indication of 'both' and 'halfway' answers. What is important, though, is that the *complete* location is no longer for either age group the second choice for the past imperfective; children appear to accept the *incomplete* location more easily in the past imperfective with CR predicates. There is also a very significant difference ( $p < 0.01$ ) between the two age groups, with the older children indicating the *complete* location as an answer for the past imperfective significantly less times than the younger ones.



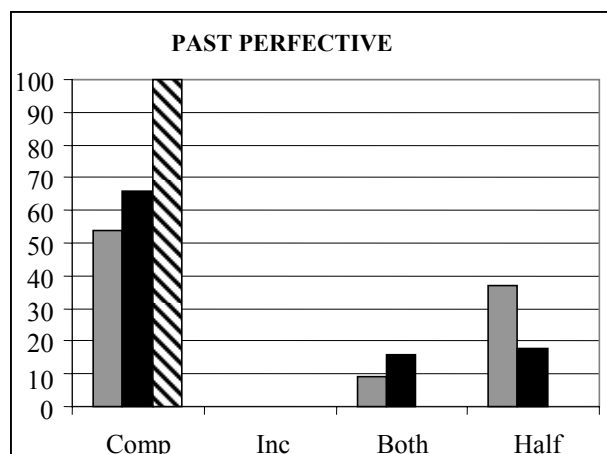


Figure 2a. Past perfective with creation predicates

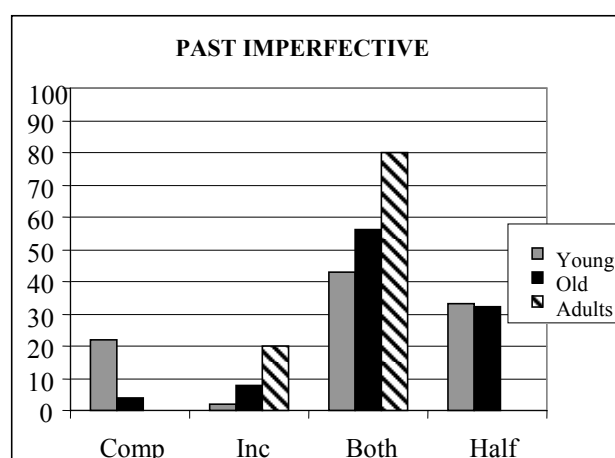


Figure 2b. Past imperfective with creation predicates

When comparing the children's performance in the past imperfective with CR and COS predicates, the only statistically important differences emerging concern the older children; their indication of 'both' locations is weakly significant ( $p = .072$ ) and there is a very significant fall of the indications of the *complete* location ( $p < 0.001$ ) from 30% with COS to 4% with CR predicates. The relevant proportions for the younger children are not significant.

### 3.4.3 Individual children's answers

In order to have a more complete picture of the results, we also examined each child's answering strategies and there were five patterns emerging from their performance (Table 3). In the most frequent pattern for both COS and CR predicates, children answered correctly in the past perfective and incorrectly in the past imperfective (Pattern 2). With COS predicates the pattern that follows includes the children who answered perfectly in both past tenses (correct perfective and imperfective, Pattern 1), while with CR predicates more children seemed to understand only the past imperfective correctly (Pattern 3). The rest of the children were almost equally divided between perfect and 'halfway' answers for CR predicates and between correct answers in the past imperfective only and incorrect ones in both past tenses with a COS predicate. Only two of the children that belong in Pattern 1 were the same for the two

types of predicates, seven children belong in Pattern 2 for CR and COS predicates, and three children in Pattern 3.

**Table 3.** The patterns of the children's answers

	<i>PATTERN 1</i> <i>Perfect</i> <i>answers</i>	<i>PATTERN 2</i> <i>PERF Correct</i> <i>IMP Incorrect</i>	<i>PATTERN 3</i> <i>PERF Incorrect</i> <i>IMP Correct</i>	<i>PATTERN 4</i> <i>'Halfway'</i>	<i>PATTERN 5</i> <i>Incorrect</i> <i>answers</i>
COS	7 children (23%)	12 children (40%)	4 children (13%)	2 children (7%)	5 children (17%)
CR	4 children (13%)	11 children (37%)	9 children (30%)	4 children (13%)	2 children (7%)

In the design of the task it was mentioned that, after the children had answered the two test questions (past perfective and past imperfective), a truth value judgment task was administered to them. Overall, the children were consistent in their responses to the test questions and their truth value judgments. The children's explanations when rejecting the incomplete location as an answer for the Past Imperfective referred to the event's incompleteness in the specific location. These responses, similar to the 'halfway' responses, are inconsistent with the Past Imperfective for the Greek adult native speakers. This finding suggests that some children could mistakenly equate the semantics of the Past Imperfective to that of the Past Perfective.

#### 4. Discussion

We investigated the understanding of the completion entailments of the past perfective and imperfective by thirty 3;0 to 6;4 year-old Greek-speaking children. There are four major findings. First of all, the children understand the past perfective better than the past imperfective; this is in accordance with previous findings in Greek spontaneous data where the past perfective emerges earlier than the past imperfective (Stephany 1981; Kati 1985). Children here associate the past perfective with completeness, but they perform at chance with the past imperfective, indicating 'both' as well as *complete* locations. As far as the past imperfective is concerned the children's main difficulty appears to be to associate it with incomplete events. This could suggest that children mistakenly consider the semantics of the imperfective to be the same as the semantics of the perfective. This is an assumption, however, that needs to be further examined.

In addition, the children seem to be influenced by the type of predicate in their past imperfective performance: they provide slightly more correct answers with a CR than a COS predicate. This finding suggests that the difference in the status of the direct object between these two types of predicates, concerning its role in the past tense acquisition, needs to be further investigated. Finally, the children use 'halfway' adverbials in order to differentiate between complete and incomplete events. This is in accordance with results from an elicited production task (Delidaki 2006), where both Greek adults and children primarily used adverbials like 'halfway' in order to distinguish complete from incomplete actions.

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