

## **Root infinitives in Modern Greek: new evidence and analysis from child Greek**

**Thomas Doukas**  
129669@soas.ac.uk

### **0 Introduction**

In this paper, we will try to assess some of the new evidence about Root Infinitives (RI henceforth) and RI analogues from the data in Modern Greek. The outline of the paper is roughly as follows: in the first part there is a brief literature review which will give the reader some basic information about the state of art of RI from the most recent research papers. In the second part there is the analysis, which consists of the following to analyse and look at through the Greek data:

- agreement distribution
- *-i* form 3sg and other 3sg; *-i* form. in non-3sg context
- overuse of the *-i* forms
- distribution of [+past] verbal forms across all 3sgs
- null subjects in *-i* forms
- use of perfective vs. imperfective form in *-i* forms
- use of non-finite forms and the omission of clitics
- correlation between determiner drop and use of RIs

From all the above, we will try to give some new information and evidence in what concerns the status of RIs in child Greek and consequently some of the implications of the same phenomenon in other languages.

Finally, in the last part of this paper, there are some of the conclusions of the analyses with some proposed solutions and consequences from this research and a brief outline of further research from this piece of work.

### **1 Root infinitives – the state of art**

A particular area of grammar where children seem not to converge immediately on the adult target concerns the requirement that matrix clauses are finite. Children acquiring various languages, including German, Dutch, French, and Swedish show a robust RI effect. The age at which the phenomenon occurs is roughly between **2;0 and 2;6**. During this time RIs constitute 30% - 70% of the children's verbal utterances. The remaining verbal utterances are adult-like finite clauses. Thus, RIs occur side-by-side with well-formed finite.

Interestingly, the RI phenomenon is not a universal property of child language. Children acquiring Italian, Spanish, Portuguese and Catalan do not show an RI stage; in other words we could say that RIs do not occur in languages with syntactically strong agreement. Although children acquiring the rich AGR/null subject languages do not exhibit an RI stage, they do produce bare participles (i.e. participles unsupported by an auxiliary).

On the other hand, English-speaking children also go through a stage, analogous to the RI stage, in which we find a very high percentage of bare forms, i.e., uninflected verbs.

However, the early English bare verb structure does not typically have a modal interpretation like the other RI/RI equivalents do. The English bare verb has either a present tense meaning or, less frequently, a past tense meaning.

There are two important properties regarding the RI stage. First, during this stage children produce both finite and non-finite verbs in root clause. In fact Wexler (1994) argues that children know the difference between finite and non-finite clauses, i.e. in terms of movement, children know that finite verbs raise and non-finite verbs do not. A second important property related to the RI stage is that when finite forms are used they are used correctly, i.e. despite the rather limited agreement paradigm, there are no agreement errors (Poeppel & Wexler, 1993). Both of these facts indicate knowledge of the adult grammar despite the unproductive use of agreement at this stage. The idea of early knowledge of inflectional morphology is formalised by Wexler (1998) as the hypothesis of *Very Early Knowledge of Inflection (VEKI)* and by Hoekstra & Hyams (1995) as the hypothesis of *Early Morphosyntactic Convergence (EMC)*.

One of the most important findings emerging from the investigation of RIs in early grammar is that the subjects of these sentences are typically null, while the subjects of finite clauses occurring during the same period are typically overt. The high rate of null subjects in RI contexts supports the claim that RIs are indeed non-finite. As non-finite clauses they provide a licensing context for the null subject, analogous to the situation in the respective adult languages, which license PRO in embedded infinitival clauses.

Moreover, various studies have dealt with the semantic properties and meaning of RIs across the different languages and their similarities. It has regularly been observed that there is a constraint on the aspectual nature of RIs in languages such as Dutch and French, which is that only eventive verbs show up as RIs, while stative verbs typically require finiteness. In Hoekstra & Hyams (1998) this is referred as the "eventivity constraint" on RIs. A second finding is that RIs typically receive a modal interpretation.

In what follows, we will look closer at the various studies related to RIs. Such papers and research give different aspects of the phenomenon and they will constitute the base of argumentation for this paper.

## 2 A prefunctional child grammar

Tsimpili's (1992) theory about the prefunctional stage in a child's language is very important for the present work, because it suggests the absence of functional projections in the child's grammar. Within this framework was embodied the first attempts to analyse the RI phenomenon in Greek and namely from Varlokosta, Vainikka and Rohrbacher (1996, 1998) (henceforth VVR), suggests that the IP layer and other connected functional projections are not present in the RI stage.

<sup>1</sup> Both the words "unproductive" and "limited" in what regards the distribution and use of agreement in child's language are controversial terms, as we can see in following parts, since not all researchers suggest the same. In our study, in fact, the results suggest the exact opposite of the above claim.

Tsimpili assumes that functional categories determine linguistic variation in terms of parameterisation. Within the grammatical model presented, the total of functional categories constitutes an independent module, independent in the language faculty. This is the Functional Module (FM), distinct from the lexical module, which includes lexical categories like noun, verb and adjective.

According to Tsimpili, UG principles are always available, but the functional module is subject to maturation and hence not available initially (18-24 months of age). The fact that the FM is subject to maturation explains why initially children omit functional categories, like articles, auxiliaries etc. This stage is referred as the prefunctional stage where the children do not use functional categories.

The notion of Maturation within the language acquisition theory has been supported by various researchers, namely Felix (1984), Borer & Wexler (1987), (1988), Guitiolye & Noonan (1988), Radford (1988), (1990). The hypothesis that there is a maturation process which effects the language development is plausible. The fact that certain properties of a biologically determined programme have to be available in specified timing conforms to the general idea that biologically determined development processes are restricted by maturation. The conclusion, in which the Maturation hypothesis about functional categories arrives, with respect to the structure of phrases during the prefunctional stage, is that the later one consists only of projections of the substantive categories.

Moreover, according to Tsimpili, children's phrases include only a VP. The subject is generated with the VP projection since the IP projection doesn't exist yet. Consequently, the elements associated to the IP projection, in particular modals, auxiliaries, are absent from the children's speech production. The absence of functional categories in the phrasal structures has a number of consequences regarding the linguistic availability of null subjects, the absence of movement as substitution processes, the absence of case assignment and the possibilities associated with the word order properties.

To summarise, the principal assumptions of the above-presented theory, are the availability of the UG principles via the language acquisition processes and the non-availability of functional categories, due to maturation relations. The notion of such prefunctional stage is important to this study since it has been proposed in various studies, as we show below, that the deficiency of agreement and null-subjects characteristic of the RIs, have as immediate consequence the lack of functional categories in the children's speech. Being more specific, in the first early attempt to explain RI the assumption was that RI is due to the lack of functional categories in the infantile grammar, which undergoes maturation in order to be adjusted according to the adult model. Such lack of functional categories was explained within the prefunctional grammar theory as well as other theories, e.g. small clauses theory. We will discuss in more detail the implications and consequences of such theories and debates.

## 3 The first approach in the analysis of RIs

One of the proposed views, made by Varlokosta, Vainikka & Rohrbacher (1996-1998), concerns the use of non-finite forms in infantile Greek. Modern Greek is a language without the infinitive option. According to VVR there are some verbal forms, which could

represent the Greek analogue of infinitive of the other child languages. Such candidates could be the following:

1. A verbal form combined with the "na" particle, which corresponds to the Greek subjunctive.
2. A verbal form con -i suffix, in both forms, namely, either with the perfective or the imperfective stem.

The first alternative has been immediately abandoned. VVR specifically argue against identifying the perfective as a child version of the subjunctive/future structure. On the other hand, the second option seems to hold the comparison with the infinitives of other languages, being (with the perfective stem) a participle<sup>2</sup> form, and hence less marked. VVR propose two stages of acquisition about -i forms:

1. Stage 1 (Spiros 1:9, Janna 1:11): where the -i form is used more than the half of the cases. A high rate is used in a non-3sg context. Verbal forms different from 3sg are rarely used and without over generalisation; this is a small evidence for AGR. There are no evidences for Tense or Modals.
2. Stage 2 (Janna 2:5, Mairi 1:9) (Maria 2:0 - 2:8): -i forms are used less than the first stage. Most of them are used in appropriate context of 3sg. The AGR paradigm is used productively. Modals and Future Tense are acquired.

(Varlokosta, Vainikka & Rothacher)

One of the major pieces of evidence in favour of the non-finiteness of the -i forms comes from the distribution of null and realised subjects across the corpora. Within Spiros' data (Varlokosta 1996) the over generalisation of the -i forms, occur mostly with null subject (without subject). The correct occurrences of the -i forms, 66% occur with null subject and 34% with realised subject, while in the incorrect occurrences the null subject rate arrives up to 86%. Realised subjects are predominantly used with correct agreement. Thus, a realised subject implies correct agreement, while incorrect agreement or non-agreement implies null subject use. The idea that Stage 1 is related with the absence of subject (and non agreement<sup>3</sup>) is confirmed from Janna's data, in which the percentage of null subjects is high up to 91%<sup>4</sup> of all cases, either correct or not.

At this point, it would be useful to quote the following citation from Hyams, according to which:

<sup>2</sup> Such "participial" analysis has been the theme of a debate between VVR and Hyams in what concerns the analysis of RIs.

<sup>3</sup> The question we address is: is there indeed evidence for two stages in the acquisition of Greek, in particular for an early stage during which children do not have agreement? We will deal with this question in the following section.

<sup>4</sup> The percentage presented here regards both correct and incorrect cases; VVR do not propose any distribution with separated instances in their study.

The analysis of VVR's data does not seem to support the breakdown into stages or the claim that there is an early stage without agreement. The low error rate in early Greek is consistent with the agreement facts of most of the languages that have been examined, and argues strongly that the early grammar contains AGR. The agreement data also fail to support the claim of two distinct stages.

(Hyams 2002)

Since the over generalisation of the -i forms, occur rarely with a realised subject, unlike the situation presented in the finite verbs, the immediate consequence is another argument, i.e. treat the -i form like an early non-finite form, equivalent to the infinitive of other languages.

As a conclusion we can note that VVR argue that Greek children (and by extension, children acquiring other languages) go through a prefunctional stage, namely a stage during which the grammar lacks INFL related elements (Radford 1990, Tsimpli 1992). During this stage children only project the lower "lexical" part of the tree (VP, NP) and this gives rise to RIs and BPs (bare perfectives), which they take to occupy VP and ASPP respectively (Hyams 2002). VVR thus conclude that during Stage 1 the early grammar does not project Inflectional categories, such as AGRP and TP, in other words, that the grammar is prefunctional.

#### 4 Bare perfectives

Children have essentially correct morpho-semantic mappings. The bare perfective (term due to Hyams 2002), like the RI, typically expresses the child's wish, need, and intention with respect to some eventuality. In other words, it has a modal or irrealis interpretation. Thus, the meaning is closest to what in adult Greek is expressed by the *na/itha* clause, i.e. the subjunctive mood except that it lacks the modal particle.

The obvious candidate for the bare perfective within this hypothesis is the adult's *na/itha* clause. In other words, the bare perfective is an irrealis clause that lacks a modal. The most valid argument against this hypothesis is firstly the fact that it obliterates the distinction between finite and non-finite clauses. Secondly, as proposed in all studies, there is the "trade-off" that occurs between bare perfectives in the child grammar and overt modals in the adult grammar. VVR note that during the bare perfective stage *na/itha* occurs very infrequently and they increase as the rate of bare perfectives decreases. Moreover, in the adult grammar, the verb embedded under *na/itha* can be either perfective or imperfective. In the child's grammar, in contrast, the irrealis form is overwhelmingly perfective as shown in VVR. Finally, in the adult language the verb inside a *na/itha* clause agrees with the subject, whereas in the child's grammar, the bare perfective is an invariant, i.e. non-agreeing form.

According to Hyams, the BP, like the RI, shares the following properties:

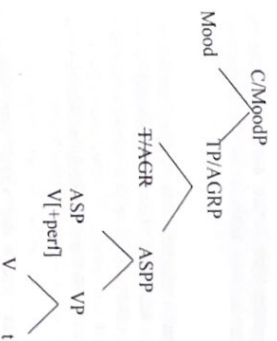
- It is arguably non-finite, as evidenced by the lack of productive agreement.
- It has a modal or irrealis meaning, that is, it is volitional, directive, or intentional.
- It is restricted to eventive predicates.
- It co-occurs with finite clauses.

(Hyams 2003)

The irrealis interpretation of the bare perfective is provided by an active MoodP. Hyams adopts Roussou's proposal (2000) who argues that *na* and *tha* are both generated in a lower C head that is specified for mood  $-C_{\text{Mood}}$ . MoodP may be licensed by a modal element merged in its head or through checking by "appropriate" features in the verb. In the adult phrase structure, MoodP is licensed through merge with the presence of the modal particle. The child's structure though, is different in that *na/tha* particles are not contained in the clause. What Hyams proposes for the child's structure is a phrase structure based on an aspect-mood feature connection, combined with the underspecification of T/Ag. Hyams proposes that aspectual features such as "perfective" (FPerf) "matches" both Aspect and Mood, and hence, may license either Asp or Mood heads. In other words, the child grammar of Greek has the same adult clause structure, as above, and it is the aspectual feature in the bare perfective (FPerf), that is responsible for the licensing of Mood in the child's grammar.

Returning to the suggested differences between adult's and child's structures now, the diversity in the two grammars reduces to whether Mood is licensed by the merging of a modal particle *na/tha* or through checking by the aspect feature in the verb. This explains at the same time the trade-off between bare perfective and use of the *na/tha* particles. Moreover, the productive use of modals correlates with the use of both perfective and imperfective verbs in modals contexts. Finally in what concerns the Agreement issues discussed above, the lack of agreement on the bare perfective follows as a direct structural consequence of the aspect-mood relation discussed above, namely that T/Ag layers need to be unspecified in order for the FPerf to license the MoodP, according to the locality condition (Chomsky 1995). The mechanism adopted in the following structural representation proposed in Hyams, is a checking mechanism, namely Attract F that incorporates this locality condition (the Minimal Link Condition). In the early grammar of Greek, Mood attracts the [+perfective] feature in the verb, and is in that way licensed.

Returning to the phrase structure it follows from the locality condition that there can be no features intervening between Mood and the perfective verb. In other words, T/AGR must be unspecified:



(Hyams, 2003)

Given the structural constraints on Attract/feature checking, the bare perfective is necessarily a non-agreeing form, with the unmarked  $-i$  affix emerging as the default where AGR is unspecified. Thus, the availability of bare perfectives and RIs in early grammar is thus plausibly related to the lack of modals and not to any specific differences between adult and child grammars.

##### 5 New evidence for the non-finite Greek forms

In Varlokosta (2003) there is some new evidence for the correlation between  $-i$  form and RIs. Such new evidence supports further the idea, proposed back in the 1960/1998, that  $-i$  forms in early Greek equals RIs in other languages, i.e. they are the Greek RI analogue.

First of these evidence, is the correlation between the use of infinitival forms and the omission of clitics; for Greek, the correlation holds between the use of verb forms with perfective aspect with the suffix  $-i$  and clitic object omission. Indeed, based on the coding in the Stephany corpus, Varlokosta found 31 cases of clitic object omission in the speech of Spiros (out of 33 contexts with an obligatory object or clitic) and only 6 in the speech of Janna (out of 7 contexts with an obligatory object or clitic).

The second set of evidence is the poor tense verbal paradigm in this stage. What is suggested is that children do not use [+past] verbs in their speech production during the RI stage, and their occurrences of [+past] verbs are very poor in examples.

Finally, the third evidence suggesting the similarity between  $-i$  forms and RIs, is the correlation between determiner drop and use of RIs. Based on Marinis (1997), Varlokosta suggests that all instances of determiner drop occur in this context, namely  $-i$  forms and no-agreement. We will analyse and discuss further this new evidence in the second part of the paper through the analysis of Maria's corpus.

##### 6 Semantic interpretation and modal properties of RIs and BPs

RIs, as a total, received often a modal interpretation, which entails reference to a likely future event. It has been suggested in previous studies that the temporal reference in these constructions is essentially free. The majority of RI constructions are eventive predicates, whereas finite constructions allow both eventive and stative predicates.

Hoekstra & Hyams (1998) draw upon the predominant future interpretation of RIs observed in the above studies and argue that the temporal reference of RIs is fixed to a modal irrealis interpretation.

Hyams (2001), as mentioned above, proposes that the children's use of non-finite forms is not an optional process in the early grammars but results from their attempt to map different meanings onto specific inflectional elements according to a semantic hierarchy: The Semantic Opposition Hierarchy, i.e. in which the category of Mood and in particular the realis-irrealis opposition is the most primitive one (RIs are irrealis forms whereas finite forms are realis).

Giannakidou (2002), as reported in Varlokosta, argues that Greek verb forms are unambiguously eventive or stative depending on whether they have perfective or imperfective aspect. Thus, perfective verb forms are always eventive. Based on Giannakidou's assumptions, Varlokosta reports that indeed, a proportion 87% of *-i* forms with no agreement involves eventive predicates, as expected.

Varlokosta reports that there is a future or modal interpretation involved in the majority of *-i* forms and hence she concludes that there is indeed a restriction regarding their temporal reference, namely the modal interpretation. The eventivity constraint as well as their modal/irrealis interpretation shows that these forms have parallel semantic interpretation to RIs in other child languages. As a result, this evidence provides further support for the non-finite status of these forms.

Finally, Hyams (2003) identifies the relations between perfectivity and modality with regard to the BPs. The relationship between modality, perfectivity and eventivity is as follows:

deontic modality > perfectivity > eventivity

(Hyams 2003)

Given the association between deontic modality and perfectivity and eventivity it follows that the bare perfective will be restricted to eventive predicates according to the eventivity constraint discussed above.

### 7 Strong continuity, maturation and RIs

According to the Strong Continuity or Full Competence Hypothesis (FCH), all functional categories are present from the beginning. There are two flavours of this hypothesis. According to one of them, functional projections are not only present from the beginning but also fully specified (Boser et al. 1992, Poeppel & Wexler 1993). Despite the absence of functional material, the presence of syntactic movement in early language is taken as an argument for the presence and full specification of functional categories.

A second variant of the FCH claims that functional categories are present but underspecified for their features (Hyams 1992, Hoekstra & Hyams 1995, Schutze & Wexler 1996). The underspecification approach explains thus the absence of the full range of a paradigm in the early language. Within this view, RIs are the result of the

underspecification of some functional category. Rizzi's (1994) view is also a version of the underspecification hypothesis. According to his analysis, RIs are the result of truncation of the syntactic tree below the TP.

According to the second view, the Maturation or Structure Building Hypothesis (SBH), functional categories are not available in the early grammar but mature according to a programme prescribed by UG (Radford 1990, Tsimpli 1992/1996).

What Tsimpli takes to be crucial evidence for her position (against the presence of functional projections), is precisely the cases where the agreement morpheme on the verb does not agree with the subject, i.e. *-i* forms. This shows, according to Tsimpli, that the two elements are not in the proper configurational relation of Spec-Head agreement. The apparent agreement errors observed in child Greek are not in fact agreement errors but instances of non-agreement. Children do not make agreement errors; they either use agreement correctly or avoid it altogether. However, the only agreement mistakes observed are in reference to the 3<sup>rd</sup> singular person. Thus, we conclude that *i*-forms are instances of non-agreement and not wrong-agreement.

Consequently, we take the fact that when agreement is used it is used mostly correctly as a strong indication that children project the full functional structure and thus as evidence for the FCH. The existence of the non-agreeing non-finite forms in early child Greek represents presumably a strategy on the part of the child to avoid agreement errors by using "that well-formed item of the verbal paradigm that allows them to use as little of the functional hierarchy as possible".

There are weaker versions of this hypothesis: Clahsen 1991, Clahsen & Penke 1992. The absence of morphological material associated with functional projections is taken as a strong argument for the Maturation or SBH. However, it is not the case that morphological material is totally absent from early language. Under the Maturation or SBH, RIs are taken as evidence for the lack of a functional category, namely the Inflection Phrase.

### 8 Analysis of the data

In what follows I am going to analyse the different types of evidence for the RI stage proposed in the various studies examined in the first part of this paper, in Maria's speech production. Through this thorough examination I will try to check how Maria's speech can be positioned in regard to these findings, how her speech behaves within the proposed theories of RI and in what stage Maria's speech development is found. Finally, I will try to give a new account for all the proposed theories of RI through the new findings from Maria's corpus and establish what the exact status of the RI stage is in child Greek.

As suggested in the first part of this paper, Greek has been proposed to have a RI equivalent, which is a verbal form *con -i* suffix corresponding to the 3sg person of the verbal paradigm. Greek has a modal construction consisting of a subjunctive particle "na" or a future particle "tha" preceding the verb, which occurs with the *-i* suffix in the 3 singular person. The verbal form of such construction (without the particles) corresponds to the proposed RI equivalent in child Greek. *Kathla* have been analysed as functional elements occupying a position within IP.

In the first attempts to analyse the RI phenomenon in child Greek it has been suggested that there is a severe omission of the particles during the RI stage a proposition that has been abandoned subsequently in favour of other hypotheses (VVR 1996, 1998). Later on in the literature (Hyams 2002, 2003) and within the framework of modal interpretation of the Greek equivalent of RI, it has been proposed that there is a trade off between the RI stage and the emergence of modal particle *na/tha* in children's speech.

To summarise, the three main arguments for the non-finite status of the *-i* form are as follows:

1. They occur with incorrect agreement i.e. in non-3sg contexts
2. Overuse of the *-i* form is more prominent with the perfective than with the imperfective stem.
3. They mostly occur with null subjects contrary to finite verbs, where both null and overt are observed.

I will examine the evidence for these generalizations starting with the agreement issue first.

### 9 Agreement

During the Root infinitive stage children produce both finite and non-finite verbs in root clauses. Wexler (1994) argues that children know the difference between finite and non-finite clauses, i.e. children know that finite verbs raise and non-finite verbs do not (German).

Evidence for the above claim comes first from finite and non-finite verb positioning in French, namely before the negation *pas* or after respectively and secondly from German where finite verbs are positioned in V2 position in main clauses, as opposed to final position in embedded clauses.

There are essentially no agreement errors in early child Greek, a pattern observed in other child languages too. This observation provides further support for the hypothesis that correct agreement features, on verbal inflectional morphology, are known to children very early in the course of acquisition.

In the following table, we can see the distribution of agreement in Maria's corpus. It is obvious that the agreement error is indeed very low in the various persons of the verbal paradigm, as suggested above for other languages, a fact that supports further the idea that children have knowledge of agreement features:

	1SG	2SG	3SG	1PL	2PL	3PL	Total	
Age	C	I	C	I	C	I	C	
2;0	9	-	3	16	4	6	-	39
2;2	32	-	25	12	1	7	-	83
2;3	44	2	17	59	4	9	-	140
2;5	38	-	18	63	1	13	-	148
2;5	32	-	12	64	-	5	-	122
2;7	28	1	10	42	1	3	-	93
2;8	28	1	20	14	2	1	-	70
2;8	41	-	9	64	1	-	-	119
Total	252	4	114	334 <sup>5</sup>	14	44	1	814
%	98	2	100	96	4	98	2	100

Table 1. Distribution of all persons' verb forms (C= correct, I= incorrect agreement)

The general conclusion is that, correct agreement features on verbal inflectional morphology are known to children very early in the course of acquisition (VEKI: Very Early Knowledge of Inflection, EMC: Early Morphosyntactic Convergence).

### 10 Overuse

There is an overuse of a verbal form that involves the suffix *-i*, referred to as the 3<sup>rd</sup> singular person. This form involves predominantly the perfective stem. The following are examples of 3sg with *-i*<sup>6</sup> suffix:

- |     |      |                                |                 |             |     |                         |                   |                  |             |          |
|-----|------|--------------------------------|-----------------|-------------|-----|-------------------------|-------------------|------------------|-------------|----------|
| (a) | na   | katharisi                      | ti              | miti        | tu  | (b)                     | ta                | petisi           | to          | matstari |
|     | SUBJ | clean                          | the             | nose        | his |                         | will              | fall             | the         | pillow   |
|     |      | <i>he/she is going to blow</i> | <i>her/his</i>  | <i>nose</i> |     |                         | <i>the pillow</i> | <i>will fall</i> | <i>down</i> |          |
| (c) | tha  | k(i)lisi                       | tin             | porta       | (d) | tora                    | tha               | diavasi          | ti          | kuala    |
|     | will | close                          | the             | door        |     | now                     | will              | read             | the         | koala    |
|     |      | <i>he/she will close</i>       | <i>the door</i> |             |     | <i>he/she will read</i> | <i>the koala</i>  | <i>(book)</i>    | <i>now</i>  |          |

Variokosta et al (1996, 1998) proposes two stages in the use of *-i* form:

1. First Stage (Spiros 1;9, Janna 1;11): the *-i* form is used over half the time and approximately 40% of the time incorrectly in non-3sg contexts.
2. Second Stage (Janna 2;5): the *-i* form is used much less and moreover appropriately in 3sg contexts.

<sup>5</sup> The total of 3sg persons in the distribution given in this table is 348, which contains copula "be" within the results. Note, however, that the same copula is excluded in the following distributions, namely tables 2, 3, 4.

<sup>6</sup> The other suffix of 3sg person is usually *-e*.

In order to check the suggested evidence above in Maria's corpus we need first to see the distribution of the 3sg *-i* form across her corpus. In Table 2, we can see the distribution of the *-i* forms from the entire 3sg person verbal paradigm. In Table 3, there is the distribution of the various stems across the *-i* forms form Maria's speech production.

	Maria(2;0-2;8)
<i>-i</i> form 3sg	173(66%)
other 3sg	91(34%)
TOTAL	264

Table 2. Distribution of the *-i* form in sentences with verbs

	Maria(2;0-2;8)
<i>-i</i> imperfective stem	51(29%)
<i>-i</i> perfective stem	52(30%)
<i>-i</i> both (ambiguous)	70(41%)
TOTAL	173

Table 3. Distribution of the various stems across the *-i* forms

From the above tables the following are observed:

- 91 out of 264<sup>7</sup> concerns 3sg with another suffix, namely *-e* and not *-i*
- From the 173 3sgs with *-i* suffix 70 involves verbal forms in which there is no difference between the perfective and the imperfective form<sup>8</sup>. Thus, these verbs present exactly the same form in both cases and hence it's impossible to disambiguate the form, unless used with one of the particles *na/tha* in which case they are perfectives.
- Then from the 103 remaining 51 are imperfective forms while 52 are verbs with the perfective form.

The conclusion so far is that there is indeed an overuse of the *-i* form 3sg, namely 66% of the total 3<sup>rd</sup> persons of the entire verbal paradigm. On the other hand, as a result of our analysis, such overuse is not really prominent with the perfective form, as we can see in Table 3 (29% vs. 30%).

<sup>7</sup> Copula "be" is excluded.

<sup>8</sup> In Modern Greek there exist some verbs which lack perfective root, in other words they are used in both contexts with the same form (kano/exo).

Though what is vital in the Greek equivalent of the RI phenomenon, is that such 3sg *-i* form, overused during stage 1, it has been suggested to be without agreement (or with incorrect agreement). To sum up so far, the RI equivalent for child Greek is the 3sg *-i* suffix form, used without the modal particles *na/tha*, predominantly with the perfective stem, and finally without agreement. Such RI analogue with these characteristics altogether, is referred as the Bare Perfective form (BP henceforth). Bearing this in mind then, a further step in the examination of RI evidence in Maria's corpus would be to check which of the *-i* form 3sg, with perfective form, lacks agreement and most importantly lacks the modals. We can see this in the following tables:

Maria(2;0-2;8)	
<i>-i</i> form perfective stem	Total
Correct	Incorrect/BPs
47(90%)	5(10%)
	52

Table 4. Distribution of correct and incorrect use of *-i* form with perfective stem (agreement errors)

Maria(2;0-2;8)	
<i>-i</i> form (all cases)	Total
Correct	Incorrect/BPs
168(97%)	5(3%)
	173

Table 5. Distribution of incorrect *-i* forms out of all the *-i* form 3sg paradigm of the corpus

From Tables 4 and 5 the following facts can be observed:

- From the 52 cases of *-i* 3sg forms with perfective stem, only 5 have no agreement and lack the adult-like modal construction. These cases are the BP forms. The rest of them all have the particles *na/tha* according to the adult grammar model, or when no particles are presented (one case) something else indicates the grammaticality of the sentence (conditional sentence).
- The same number of incorrect cases compared to the entire range of *-i* forms from the corpus, gives a percentage of 3%, which is indicative for this study, as we will see below.
- In what concerns BPs in Maria's corpus, this small number of BPs, namely the 5 cases found above, are all with the perfective form and hence the percentage of such distribution would be 100%. In brief, we could say that there is indeed a prominence with the perfective stem as opposed to the imperfective one, in BPs,

but because the available data is only few cases the entire issue becomes quite irrelevant. The distribution of perfective and imperfective forms across all the *-i* forms in the rate of use of the two different stems, namely 50% for each of the stems.

- Finally, a balance in the rate of use of the two different stems, namely 50% for each of the stems.

Agreement is calculated in all the forms, according to the ungrammaticality of the sentence, since Greek is a null subject language, which means that verbs can stay without each of the stems.

11 **Null subjects**  
 Finally the third point to examine in what concerns the RI equivalent in Greek is the Null subject distribution across the RIs. It has been suggested that such non-finite forms occur with null subjects contrary to finite verbs where both null and overt are observed.

In relation to the results presented above in what concerns the incorrect use of *-i* forms and in what concerns the distribution of null and realised subjects across Maria's corpus, we can say that the above mentioned 5 cases of non-finite occurrence in which analysed the only 5 cases in which a null subject is predicted from the theories of the examination of the BPs, are all with a null subject in the corpus and are irrelevant for the examination of the phenomena. Thus, the percentage of null subjects in the corpus altogether.

12 **New evidence for RIs**  
 In the following part we will be examining some of the new evidence suggested for the Greek equivalent of RI from more recent studies about RI such as Varlokosta 2002, Hyams 2002, 2003 and others.

12.1 **Tense**  
 A further observation regarding early child Greek is that during Stage 1, which is characterised by the absence of the *-i* forms (the proposed RI stage), tense distinction tends to be absent (Table 7, Varlokosta). The relevance of the *+*past feature across the 3sg forms has to do with the eventive vs. non-eventive interpretation of RIs. However, the connection of this evidence with the eventive interpretation and RIs is not fully clear, but for the sake of research, we are going to analyse this piece of evidence through Maria's corpus as well.

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The distribution of [+PAST] in Maria's corpus is 81 (10% of the total verbs in the corpus) cases of all persons (of which 34 cases of 3sg and hence 41% of the total +PAST verbal forms). The examples of the variation of past tense follow below:

- (a) *lihike, epese, vrachike, irthe, eplase, evale, exise, megulose, potise, dhovase, peiakse, skupise, efpje, telose, amevike, jelase.*
- Maria is clearly positioned in a more advanced stage (II) following the distribution made by Varlokosta, since the +past forms represent 10% out of the total of the verb production.

12.2 **Clitic object omission**  
 In other languages with RI phenomena a correlation has been observed between the use of non-finite forms and the omission of clitics during this stage. A correlation might be expected of verb forms with perfective aspect and the suffix *-i* and clitic omission might be expected in Greek too.

Below are examples of clitic objects in sentences from Maria's corpus:

tora t' agapai  
 now it he/she loves  
*now she/he is loving it*

ala den ti theli  
 but not her he/she want  
*but she/he doesn't want her*

tora ato tha ti (V)gali ti bala  
 now, this will her put out, the ball  
*and now this will put it out, the ball*

mu ta patai i jaja  
 pronoun/me on them she is stepping the granny  
*the granny is stepping on them (of mine)*

ta perni to koritsi ke ta pai sto saloni  
 them takes the girl and them brings to the living room  
*the girl takes them and brings them to the living room*

na ta vali i mama  
 SUBJ them should put in the mum  
*and mum should put them in*

	3sg-all	All persons-rest	Total
Maria (whole)	98 (28%)	184 (39%)	
Obligatory contexts	12 (4%)	12 (4%)	
Omitted	238 (68%)	268 (57%)	814
Non obligatory context		466	
Total			

Table 6. The proportion of clitic object omission in 3sg vs. other persons



From table 6, we can see the distribution of clitics across the entire corpus of Maria. In regards to the 3sg persons as well as the rest of the verbal paradigm, an initial observation would be that the rate of omission in obligatory contexts (i.e. where the clitic needs to be present compulsory) is very small, namely 4%. Nevertheless, the correlation has been proposed to hold for verbal forms with perfective aspect and the suffix *-i* (BPs), and hence we need to examine this distribution as well which is presented in the following table:

	Perfective Stem		Total
	3sg -i form	BPs	
Maria (whole)			
Obligatory contexts	Present 14 (30%)	3 (60%)	
	Omitted 2 (4%)	2 (40%)	
Non obligatory context	31 (66%)	0	
Total	47	5	52

Table 7. Distribution of clitic objects in 3sg -i forms vs. BPs all with perfective stem

From the above distribution we can see that what concerns the 3sg -i forms things are much the same as those presented in the table 6, namely in only 4% of the cases where a clitic object is obligatory it is omitted while in the rest it is placed properly. On the other hand in the BPs distribution, we can see that 40% of the cases show clitic object omission indicating that the suggested evidence for clitic object omission in BPs can apparently hold in Maria's data. Nevertheless, the amount of data presented here is too small and this gives rise to serious doubts about the distribution and as such cannot give firm support for the questioned piece of evidence.

Vartokosta, in her study reports Marini's (1999) results for the clitic object omission which are different from her results, explaining in a footnote that the divergence is due to "calculation differences". On the other hand, Tsakali & Wexler (forthcoming) share the view that there is no high rate of clitic omission in Maria's data. Their results for the entire corpus (all files, all verbs and clitic omission in obligatory contexts) add up to roughly 4%, which is in absolute conformity with the results presented here. What Tsakali & Wexler propose for this piece of evidence is that there is a correlation in between RI stage and the clitic object omission stage is that practically the two stages overlap. So far, Maria (as stated above) appears to be in a more advanced stage of language acquisition in which no RI phenomena are observed and no clitic object omission as well.

### 12.3 Determiner drop

Another suggestion for the RI stage is that there is a correlation between determiner drop and use of RIs. Vartokosta, based on Marinis (1997), suggests that there is a proportion of definite articles missing in obligatory contexts in child Greek. All instances of determiner drop occur in contexts with -i forms and no agreement rather than in other contexts, and hence with BPs.

Marinis' distribution refers only to definite articles missing in obligatory contexts during both Stage 1 and Stage 2. The results given for the determiner drop are the following: 77%-83% for Stage 1 (Spiros and Janna) and 7% for Stage 2 (Janna). Let's see how things are for Maria's speech production in the following table:

Age	"Isolated" NPs	IN PHRASE		Omission In obligatory context (def+indefinite)	Total
		+article (def+indefinite)	-article <sup>9</sup>		
2;0.24	6	12	0	7	25
2;2.8	5	9	5	8	27
2;3.18	5	25	12	9	51
2;5.4	6	57	11	6	80
2;5.24	13	59	24	4	100
2;7.1	14	23	15	0	52
2;8.3	8	20	10	0	38
2;8.27	7	46	16	0	69
Total	64(14%)	251(57%)	93(21%)	34(8%)	442

Table 8. Distribution of DPs and NPs in Maria's speech production

In the above table all DPs and NPs in Maria's speech have been calculated. Unfortunately, for reasons of time, it was impossible to calculate separately definite from indefinite articles. In any case the percentage of determiner omission is indicative even if it contains indefinite articles also within the distribution. From the results of the table seems that there is no obvious DPs omission in Maria's speech production. In fact, Maria as claimed before seems to be in Stage 2 presenting nearly the same percentage as the equivalent Stage 2 in Vartokosta's data, namely 8% vs. 7% (Janna, Stage 2).

Vartokosta observes that the proportion of determiner drop is lower in contexts with -i form and no-agreement (BPs) than in other contexts. In our study on the other hand, a part of the fact that that already Maria is classified in the second stage, as proposed above, the BP forms presented in her corpus (as already mentioned) are only in 5 cases. The determiner

<sup>9</sup> The column under the title "-article" regards NPs without the presence of an article. Note that these cases are not incorrect and neither can we talk about determiner drop, since Greek allows to some NPs to stand without a Determiner. The following column under the title "omission" concerns indeed the omission of determiner in obligatory contexts.

drop evidence becomes irrelevant in this case then since there is not any DP drop in these 5 cases of BIs and finally since Maria is already classified in the second stage.

To sum up, the evidence for a correlation between the use of *-i* forms with no agreement and clitic or determiner omission in child Greek is not very firm.

### 13 Conclusion

In the above analysis, we examined old and new pieces of evidences for the status of RI analogue in child Greek. What is important to remember is that all the studies which we have considered in this paper as well as the analysis of the present paper have examined only small pieces of data in order to arrive at these conclusions. As a consequence, the analysed data is not really sufficient for any firm conclusions both in the literature and in the current research paper regarding the RI stage in Modern Greek.

From Maria's database we do not have evidence that there is an RI stage at this age of language acquisition. This could mean either that Maria is in a more advanced stage of language development compared to other children's data or that the RI stage is indeed optional as proposed for other languages as well.

Some general remarks and conclusions from the above research are as follows:

- Children go through a RI stage in their language development.
- The proposed age of such stage is from 2 years old until 2;6 – 3 years old
- Maria being taped recorded within the same range of age presents the following results:

- (a) no agreement errors in her relatively rich verbal paradigm
- (b) no overuse of such forms proposed to be the equivalent of RIs
- (c) consequently, null subjects are not excessive in these forms
- (d) perfective forms equally presented with imperfective ones
- (e) tense features and paradigm in place and richly represented
- (f) no clitic object omission with the above forms
- (g) no determiner drop with the above forms

Finally, the questions we need to raise at this point are:

- Is there indeed an equivalent of RIs in Modern Greek, and if there is, at what range of age do children go through it and what are the characteristics?
- Does the patterning observed with Maria support the idea of Optionality proposed by Wexler (1994) for German?

The arguments so far for an equivalent of the RI in Greek are not very firm nevertheless there is good evidence in the recent studies that does support this idea leaving the ground open for further research and investigation into this issue.

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