

Bare Participles Are *Not* Root Infinitives: Evidence from Early Child Slovenian

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1. Introduction

In recent literature, children's knowledge of agreement has been reported to be perfect or near-perfect cross-linguistically (cf. Hyams 2003). However, child grammars seem to exhibit one property that diverges from their respective adult grammars. Several studies have shown that between the ages of 2 and 3 children produce matrix (root) clauses containing an *infinitive* verb rather than a *finite* one (marked for tense and/or agreement). The percentage of such *Root Infinitives* (RIs) varies, ranging from 3% to as much as 90% (see Guasti 2002 for a review). RIs are however almost nonexistent in morphologically rich, null subject languages like Italian, Spanish, Catalan (Guasti 1993/1994).

Although RIs do not seem to be attested in null subject languages, children acquiring these go through the so-called *bare participle* (BP) stage, produce utterances containing (*active*) *past participles* unsupported by auxiliaries and generally lacking overt subjects.¹ Based on the analysis of Child Greek, Varlokosta, Vainikka and Rohrbacher (1996, 1998) claim that RIs and BPs have the same distributional properties and are structurally and semantically similar; i.e. they are manifestations of the same, root non-finite stage in child grammars.

The aim of this paper is three-fold. First, we would like to provide a critical review of the analysis of BPs as RIs, showing that such an analysis cannot be maintained neither on conceptual nor empirical grounds. Second, we would like to present an interesting yet unexplored set of BPs from very early Child Slovenian. And third, we would like to build an alternative account of BPs in the language in question. By providing both conceptual and empirical arguments based on our data from Child Slovenian, we will argue that BPs are not analogous to RIs but are full clauses with a missing auxiliary BE (AUXBE).

The paper is organized as follows. We first discuss Varlokosta et al's "Bare Participles are RIs" hypothesis (section 2). Section 3 introduces the aspects of

* We would like to thank Maria Guasti, Hector Campos, Donna Lardiere, Rozz Thornton, and the attendees of the Brown Bag Lunch Meeting at Georgetown University, and of BUCLD 29, particularly Nina Hyams, for their comments. We also thank Simona Kranjc for providing us with the data.

1. Guasti (1993/94) points out (footnote 7) that the low rate of RIs in child Italian might be due to the omission of participles from her calculation.

Adult Slovenian verb morphology. Section 4 provides a detailed description and analysis of BPs from Child Slovenian, offering evidence for functional projections above VP/AspP, namely TP and CP. Section 5 touches on the semantics of BPs in Child Slovenian, providing more evidence for BPs being full-fledged clauses. Section 6 concludes the paper.

2. Bare Participles as Root Infinitives

Varlokosta et al's analyses center on the RI phenomenon in Child Greek, posing an interesting test case as its adult counterpart has no infinitive in the grammar. It is thus worthwhile to examine what grammatical form Greek children choose as an RI analogue (assuming all child grammars have RIs). They claim that such a form indeed exists and that it is "the *-i* form", which is morphologically (and phonologically) homophonous with a 3rd singular (3SG) non-past perfective form (either subjunctive or future) or the active past participle.²

According to Varlokosta et al, the *-i* form is the most common verb form in Child Greek and is overused (i.e., used inappropriately in various grammatical contexts). It is common in the contexts where adult Greek uses an active (perfective) past participle, as the example in (1) from the Spiros data shows:

- (1) Pio vavasi (Spiros, 1;9)
Spiros read
'Spiros has read.'

Greek children apparently make an extremely high number of agreement errors by using non-3SG subjects with the *-i* form, which later disappears when the children acquire INFL-related lexical items, such as the *-na* particle.³

Varlokosta et al further observe that the subjects in Child Greek are generally missing (or when they are present, they occur postverbally), that the earliest utterances with the *-i* form are not compatible with WH-questions, and that INFL-related elements (such as T/Agr, Auxiliaries, or Modals) are lacking in the earliest utterances. Based on these similarities with RIs in other languages

2. It is beyond the scope of this paper to question whether the *-i* form in Child Greek is truly a past participle form, particularly since it is homophonous with other finite forms, or whether the utterances with the *-i* form are really RIs (for controversy on this, see Hyams 2003). We take Varlokosta et al's claims more generally by leaving the issue aside of what the status of this form in Child and Adult Greek is. We take their thesis that bare participles in child grammars cross-linguistically contain no functional projections (i.e., they are non-finite) and that they are analogous (syntactically and semantically) to RIs as a starting point of our critical review and analysis.

3. However, see Hyams 2003 for a critique and her reanalysis of Greek children's knowledge of agreement.

and the frequency of such utterances, they conclude that the *-i* form is indeed an RI analogue.

To account for the emergence of functional material in later stages of language development, Varlokosta et al resort to the technology of ‘tree pruning’ (akin to Rizzi’s 1993/1994 ‘truncation’). However, unlike the latter, they adopt a ‘piecemeal structure building’ (that arises via maturation or “lexical learning”). As an explanation of why early grammatical systems would behave like this, they propose the Minimal Projection Principle stating that child grammar requires minimal structure for morphological well-formedness, i.e., “...young children initially prefer trees that use (or project) as little of the functional hierarchy as possible” (Varlokosta et al 1996: 15). This goes hand in hand with the Markedness Principle, according to which children will initially always opt for the most unmarked verb form that is available in their input – if the target grammar has infinitives, children acquiring such a language will opt for infinitives, but if the target grammar lacks infinitives (such as in Greek), children will choose a higher form on the hierarchy, namely a participle. In other words, children’s grammatical representation initially only includes VP (where infinitives are licensed) or AspP (where participles are licensed).⁴

We now turn to Child Slovenian, whose adult counterpart has both infinitives and (active) past participles. This provides an opportunity to re-evaluate the ‘BP as RI’ hypothesis discussed above.

3. Introducing Adult Slovenian

3.1 The Syntax of Verb Morphology

Slovenian exhibits extremely rich verb morphology with T and AGR expressed as a fused morpheme on the verb suffix and Asp as a morpheme either in the form of a prefix or lexically on the stem. Table 1 is a full paradigm for the verb *igrati* (to play) in the present tense, with the T/AGR morphemes in bold:

Table 1

| | Sg | Du | Pl |
|-----------------------|------------------|-----------|-----------|
| 1st | igram | igrava | igramo |
| 2nd | igras | igrata | igrate |
| 3rd | igra \emptyset | igrata | igrajo |

4. Varlokosta et al use the clause structure with the hierarchy AgrsP>TP>MoodP>AspP>VP.

Slovenian allows infinitives unlike Greek⁵. The following sentence shows an infinitival complement to the verb *hoteti* (to want) in the past tense:

- (2) Hoteli smo iti v Boston.
 wanted.pl.masc be.1pl.pres go-inf in Boston
 ‘We wanted to go to Boston.’

Moreover, Slovenian is a null subject language, as shown in the following example:

- (3) Pisala je Marku.
 written.sg.fem pro be.3sg.pres. Mark.dat.
 ‘She has written/wrote to Marc.’

It also distinguishes among three tenses, only one being synthetic (simple), namely the present tense. The past and future tenses are both periphrastic (compositional/complex), formed with AUXBE and the active past participle (the *-l* participle).

BE is the only auxiliary that is used in the formation of tenses. Both the present and the future forms of AUXBE are clitics and have no full counterparts, but may be stressed for emphasis or contrast. The subject agrees with it in person and number and with the participial in number and gender, as demonstrated below.

- (4) Peter je kupil nov avto.
 Peter.nom be.3sg.pres bought.sg.masc.perf new.acc car.acc
 ‘Peter has bought/bought a new car.’

3.2 Slovenian vis-à-vis Greek

Table 2 shows the comparison between Greek and Slovenian in terms of the properties relevant for our discussion. We see that both languages exhibit rich morphology and allow null subjects. The difference between the two is in the use of infinitives, which is allowed in Slovenian and lacking in Greek:

Table 2

| Property | Adult Greek | Adult Slovenian |
|-----------------|-------------|-----------------|
| Rich morphology | Yes | Yes |
| Null subjects | Yes | Yes |
| Infinitives | No | Yes |

5. Infinitival complementation is limited, though (cf. Rus 2003).

The prediction is that Slovenian children produce RIs instead of Bare Participles, given Varlokosta et al's analysis that languages that have infinitives allow their child counterparts to generate RIs. This hypothesis is contradicted by Child Slovenian bare participles, which we now turn to.

4. Bare Participles in Child Slovenian

4.1 Data & Subjects

The data from our study come from Kranjc (1999). It is naturalistic production data collected from 17 children over a period of 3 months. The sample includes 9 girls and 8 boys who were observed at play among each other and/or with the caretaker (a kindergarten teacher) and occasionally with the researcher. At the beginning of the recording, the youngest children were 1;3 and the oldest 2;0. At the end of the recording, the youngest were 1;6 and the oldest 2;3. The MLU was calculated for the purpose of the present study for each child on the basis of the child's first 20 utterances in the data. It ranged from 1;4 to 2;31 across all subjects, with a mean value of 1;94.⁶

Tables 3 and 4 show a breakdown of all verbal utterances:

Table 3 (including imperatives)

| C-Types | Imperatives | Participles | Other |
|-------------------|-------------|-------------|-------|
| Total (of 1205) # | 679 | 197 | 329 |
| % | 56.4 | 16.3 | 27.3 |

Table 4 (excluding imperatives)

| C-Types | Participles | Other |
|------------------|-------------|-------|
| Total (of 526) # | 197 | 329 |
| % | 37.4 | 62.5 |

As we can see from the tables, (active) past participles constitute 16.3 % of *all* verb utterances and as much as 37.4 % of verb utterances excluding imperatives. In other words, if we don't count imperatives (which are extremely common in child Slovenian), roughly every third utterance that a Slovenian child produce before age 2 contains an active past participle. The following section discusses bare participles in Child Slovenian in some more detail.

6. Two children, older than 24 months at the end of the recording, were excluded from the analysis, in order to have a sample of all children younger than 2 (which is the age when functional categories start emerging in the developing grammatical systems, as has been argued by Radford (1990, 1995, 1997) and others).

4.2 Properties of (Bare) Participles in Child Slovenian

Child Slovenian shows an extremely wide range of active past participles, some of which are given below.

- (5) Ha, ha, padu. (Tomaz, 1;7)
 ha ha fallen.sg.masc.perf
 ‘Ha, ha, I have fallen/fell / he has fallen/fell.’
- (6) Odletela. (Lenart, 1;9)
 flown.sg.fem.perf
 ‘It has flown/flew away.’ (e.g., the bird).

The active past participles in early Child Slovenian bear the correct adult participial *-l* morpheme⁷ (95.9% correct). AUXBE is generally missing; only 2.03% of the total child utterances involve an AUXBE. (6) is the child counterpart of the following:

- (7) Odletela je.
 flown.sg.fem.perf. be.3sg.pres
 ‘It’s flown/flew away.’

Moreover, as shown in Table 5, overt subjects are usually non-existent:

Table 5

| Utterance w/ Past Participles | w/ Overt Subjects | Agr correct |
|----------------------------------|-------------------|--------------------|
| Bare (n=193; 97.97%) | 13/193 (6.73%) | 185/193 (95.8%) |
| w/ AUX (n=4; 2.03%) | 0/4 | 4/4 (100%) |

Interestingly, just like in Child Greek, overt subjects in early Child Slovenian also occur post-verbally (30.8%).

- (8) Tukele sk(r)ila pikapolonica. (Lenart,1;9)
 here hidden.sg.fem.perf ladybug.nom
 ‘The ladybug has hidden/hid here.’

7. The *-l* morpheme is pronounced as [l] or [u] (masculine). Gender is marked as a separate morpheme, *-∅* for the masculine, *-a* for the feminine, and *-o* for the neuter.

Moreover, reflexive clitics in early Child Slovenian are generally absent, too. Compare (8) with (9), an adult structure with the reflexive clitic *se*.

- (9) Tukele se je sk(r)ila pikapolonica.
 here refl be.3sg.pres. hidden.sg.fem.perf. ladybug.nom.
 ‘The ladybug has hidden/hid here.’

Given these observations, Varlokosta et al’s analysis seems to hold for Child Slovenian BPs. This, however, predicts that this language necessarily lacks all elements related to higher functional projections. We provide some counter-evidence in the next section.

4.3 Evidence for Functional Projections

First, though overt subjects are rare, they occur pre-verbally almost 69.2% (of the total number of overt occurrences) in bare participle constructions.

- (10) Katka nardila avto (Katja, 1;10)
 Katka.nom made.sg.fem.perf car.acc
 ‘Katka has made/made a car.’

As shown in (10), the subject agrees with the participle in number and gender. Assuming that phi-feature agreement is established via a spec-head relation (as argued in Chomsky 1995), we argue that the subject moves through the specifier of the head hosting the participle, presumably an Aspect Phrase (AspP) or a TP.

Interestingly, these constructions also allow (dislocated) objects in a pre-participle position, as shown in the following example:

- (11) Zajcek kukuc naredu. (Vesna, 1;7)
 little rabbit.nom peek-a-boo.acc made.sg.masc.perf
 ‘The bunny has made/made a peek-a-boo.’

The structure in (11) has a dislocated object, placed in a position higher than AspP (presumably an AspP-adjoined position). This requires the subject to move to a higher position than AspP, that gives us the correct word order. We therefore argue that overt pre-verbal subjects in this language move to the specifier of TP, via the specifier of AspP, where it enters into local spec-head agreement with the participle.

Finally, unlike Greek *-i* forms, Slovenian BPs *are* compatible with WH-phrases, as shown below:

- (12) Kaj (na)redu? (Tomaz, 1;9)
 What.acc made.sg.masc.perf
 ‘What has he done/did he do?’

Assuming that wh-elements target the specifiers of CP, structures like (12) provide evidence for projections beyond VP/AspP.

Given these observations, the analysis that BPs are RIs seems dubious. We therefore claim, contrary to Varlokosta et al's hypothesis, that BPs are full (finite) clauses with a missing AUXBE in T head⁸. This is demonstrated in Figure 1.

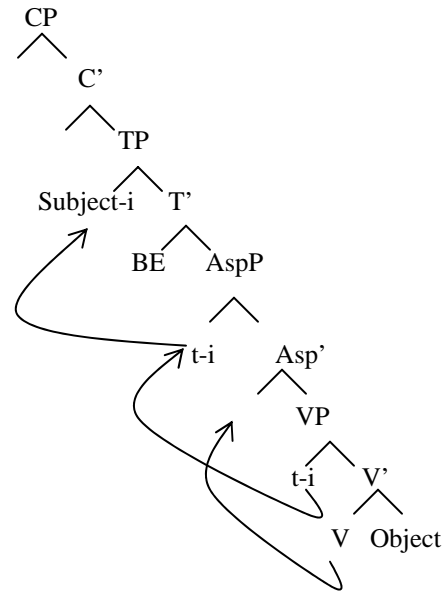


Figure 1: The Clause Structure of BPs

8. Children might lack BE (both AUX BE and copula BE, in fact) due to its semantic properties; in other words, BE is generally semantically vacuous and contributes very little to the overall meaning of the semantic interpretation. Becker (2000a, b) suggests children are sensitive to its aspectual properties and leave out BE from their grammatical representations when certain aspectual properties are salient elsewhere, but retain BE when it is necessary to anchor the aspectual properties not found elsewhere. She develops a model of COPBE omission in child English that is reminiscent of the pattern of COP use in adult African American English, based on the semantic distinction between individual-level and stage-level predicates, roughly corresponding to the distinction between permanent (inherent) properties and temporary properties, claiming that the previous type tends to be overt much more frequently than the latter type.

We now turn to the interpretations of RIs in child languages, and test these against Child Slovenian BPs. The semantics of bare participles in this language gives some more evidence for not analyzing them on a par with RIs.

5. The Semantics of Bare Participles in Child Slovenian

It has been noted in the child language acquisition literature that there is one typical semantic property associated with RIs, namely the Irrealis/Modal interpretation. Hence, an RI, as in (13) below from Child French, is interpreted as (14).

(13) Moi dessiner la mer (French: Daniel, 1;10)
 me draw-inf the sea

(14) ‘I want/would like to draw the sea.’

We investigated three properties of Slovenian BPs with respect to their semantic interpretation. First, we looked at the *time reference* of each of the 193 bare participles by dividing them into BPs with a past or future time reference. Second, we examined whether Slovenian BPs displayed the preference for the *Irrealis/Modal interpretation* or a split between *realis* and *irrealis* (as would be expected if BPs were not RIs). And third, we looked at the *aspectual* information of each participle.

We found that around 63 % of all BPs had a Past Tense reference. These would, of course, refer to “realis” (actions completed in the past). 38.8% of BPs referred to the “future/irrealis” interpretation, as shown in the table below:

Table 6

| Interpretation | Past | Future |
|-----------------|--------------------|-------------------|
| Realis | 122/193 (63.2%) | X |
| Irrealis | X | 75/193 (38.8%) |

Hyams (2003) agrees that BPs in Child Greek (“bare perfectives”, as she calls them) express the child’s wish, need and intention, but that the mismatch between the modal meaning of bare perfectives and a participle form is a very strong argument against analyzing the bare perfective as a participle. A similar counterargument comes from the tense and aspect semantics of bare participles vs. bare perfectives. Hyams further notes that bare participles in Child Italian typically refer to past and closed events or resulting states of the past events and that semantically, such forms do not have a modal interpretation, denoting intentions, wishes, and obligations. Hence, with respect to interpretation, the

bare perfective is said not to correspond to a participle at all. This extends aptly to Slovenian children's BPs in not having a modal interpretation.

However, Child Slovenian BPs are used for both past and future time references, so they do not solely refer to closed past events but also to future events with both perfective and imperfective aspect appearing on the verb. However, perfective is much more common. This may be due to the perfective being a default aspect with imperfective being acquired later, which is a more general property of early verbs (Kranjc 1999). Nonetheless, note that the low rate of imperfectives might imply that these are perfectives with missing perfective prefixes which are phonologically reduced, just like many word-initial consonant clusters cross-linguistically in child languages (e.g., kuhala (imperf) → skuhala (perf)).

The following example shows the semantic pattern generally observed in BPs with past tense reference:

- (15) Golopcki ... lej, lej, lej,... so vzleteli.
 little pigeons.nom look.imp are flown.masc.pl.perf
 'The pigeons...look! they have flown away.'

In (15) Lenart (1;9) observes to his playmate that some pigeons have already flown away. Here, the structure refers to a closed event, rather than an irrealis interpretation, as one would expect of RIs.

From the above discussion, it follows that bare participles in this language are not RI analogues, as they starkly contrast with RIs in favoring a realis interpretation.

6. Conclusion

The paper argues that BPs in Child Slovenian generally lack INFL-related elements, and co-occur with overt pre-verbal subjects, dislocated objects, and WH-phrases. Moreover, a semantic analysis suggests that the interpretation of BPs is not restricted to irrealis interpretation, but rather shows a split between realis and irrealis meanings.

Hence, Varlokosta et al's hypothesis that BPs are RIs cannot hold true. We presented overwhelming evidence suggesting that Slovenian child grammar projects higher than VP or AspP, contrary to Varlokosta et al's Markedness Hierarchy/Minimal Projection Principle. BPs in Child Slovenian are full clauses with a null auxiliary BE in T head.

Furthermore, Slovenian children's early grammatical systems are far from being pure instantiations of lexical categories, nor are their earliest clauses purely nonfinite clauses since these children simultaneously produce finite verbs and imperatives (with finite morphology) together with BPs.

Hence, we conclude that there is no pre-functional stage in child grammars and that early grammatical systems must allow full clausal structures with functional material. However, the omission of BE is still not clearly understood.

More empirical data and more comparative investigation are needed to account for its omission and to determine the interplay between syntax and semantics in early child grammars.

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