'Living with Optionality': Root Infinitives, Bare Forms and Inflected Forms in Child Null Subject Languages

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1. Introduction

The systematic presence of child utterances such as those listed in (1), taken from Hyams (1998), has led researchers to propose that there is a grammatical stage in child language development characterized by the optional presence of Root Infinitives (Hyams 1994, Rizzi 1994; Wexler 1994; Hoekstra and Hyams 1995).

(1)a. Papa   schoenen wassen   [Child Dutch]
        Daddy   shoes   wash-INF

(1)b.   Thorsten das haben   [Child German]
        Thorstn   that have-INF

(1)c.   Michel dormir   [Child French]
        Michel sleep-INF

(1)d.   Eve sit(Ø) floor   [Child English]

In languages such as Dutch, German or French the non-finite forms are actual infinitives, as evidenced by the presence of the infinitival morpheme on the verb, as in (1a), (1b) and (1c). However, in languages that lack infinitival morphology, like English, the RI phenomenon is manifested by the presence of bare forms (with no tense or agreement morphology) as shown in (1d).

Another typological difference that has been reported is that in null subject languages like Italian, Spanish or Catalan, the percentage of non-finite forms in root contexts is not as high as the one in non-null subject languages like Dutch or German, as shown in Table 1.

Table 1
Percentage of RIs in null subject and non-null subject languages

Null subject	Child	% RIs	Non null subject	Child	% RIs
Basque	Mikel	0.13	Dutch	Laura	0.36
Catalan	Júlia	0.07		Tobias	0.36
Italian	Paola	0.07	French	Natalie	0.49
	Daniel	0.08	Swedish	Freja	0.38
Spanish	María	0.08		Tor	0.56

The data from Dutch, French, Swedish and Italian have been taken from Hoekstra and Hyams (1998).

The low percentage of RIs produced by children acquiring null subject languages led some authors to claim that these children did not go through a RI stage (Guasti 1994) and, in accordance with this, several proposals were advanced that attempted to provide a principled account of this crosslinguistic difference (see Rizzi 1993/1994, 1994; Wexler 1994, 1998).

However, in line with the assumption that the RI stage represents a universal phenomenon, some authors have attempted to define an RI stage for null subject languages. For instance, Hoekstra and Hyams (1995) proposed that Tense is a means of connecting the structural temporal meaning into the discourse and that the relation between discourse (CP) and Tense is encoded by different elements across languages: Number morphology for Dutch and English, Person morphology in Spanish and Italian, and Tense morphology in languages like Japanese. They propose that the RI stage derives from the underspecification of the corresponding feature for each language. Thus, in Dutch and English, the underspecification of the feature [N(umber)] brings about the presence of RIs in child language. For null subject languages, these authors claim that the underspecification of the feature [P(erson)] triggers the *Avoid Plural Phenomenon*, which alludes to the fact that in null subject languages children do not produce plural verbal forms during the RI stage.

A different approach to the definition of an RI stage for null subject languages was taken, for instance, by Tsimpli (1992) and Ezeizabarrena (1997) who suggested that the third person singular (a form that lacks inflection but for the thematic vowel of the verb and that is homophonous with the second person singular imperative) instantiates the form unspecified for agreement features and that this verbal form, as RIs, lacks functional content. Similarly, Grinstead (1998) notes that the Catalan and Spanish third person singular indicative is a default form that can be considered the equivalent of RIs in null subject languages[1]. More recently, Salustri and Hyams (2003, in press) have claimed that it is the Italian imperative that should be taken as the RI analogue. Thus, according to these proposals, a "default or unmarked form" would realize the RI stage in these languages (Perales, Liceras and Bel 2005).

There are still two problems that these proposals do not overcome: one is accounting for the optional nature of RIs (be it bare forms or infinitival forms) and the other is to account for the fact that only certain types of verbs appear in the nonfinite form. In other words, they do not explain why RIs, with the exception of English bare forms, are subject to the *Modal Reference Effect* (with overwhelming frequency, RIs have *modal* interpretations), and its derivative, the *Eventivity Constraint* (RIs are restricted to verbs referring to *events*) (Hoekstra and Hyams 1998).

Hyams's (2001) addresses both the issue of optionality and the issue of the semantic interpretation of RIs. She argues that 'true' RIs (the ones with actual infinitival markers which characterize child Dutch, French or German) are not optional because they are not in complementary distribution with inflected forms. According to Hyams' *Semantic Opposition Hypothesis*, children map meanings onto I(nflection) elements on the basis of a semantic hierarchy in which Mood represents the most primitive opposition: *Irrealis* Mood (desire or necessity or futurity of some event) versus *Realis* Mood (actual occurrence, whether past or ongoing, of some event). The R (infinitival markers) of the RI languages (Dutch, French, German) realize the *Irrealis* Mood and the finite forms realize the *Realis* Mood. In English, the bare verb realizes the *Realis* Mood while the semi-auxiliaries *hafta*, *gonna*, *gotta*, *wanna*, realize the *Irrealis* Mood. As for Greek, a null subject language without a distinct infinitival marker, the bare subjunctive form (or the bare perfective) realizes the *irrealis* mood. In the case of Italian, Salustri and Hyams (2003; in press) argue that it is the imperative that realizes the *Irrealis* Mood.[2] We summarize these proposals in table 2.

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[1] Serrat and Aparici (1999) and Aguado-Orea (2004), among others, have also pointed at the relevance of these bare forms in the development of verbal morphology in child Spanish.

[2] Gavruseva (2003, 2004, in press) provides a different account of the presence of RIs in child grammars. She attributes the presence of RIs in child L1 and child L2 grammars to the underspecification of the aspectual head (her 'underspecification of the AspP hipothesis'). According to this author, the fact that the telic/atelic distinction is predicate-based in English (it resides not only in the syntax of aspectual semantics but also in the syntax/semantics of DPs as in *he drunk beer* versus *he drunk a glass of beer*) has implications for the acquisition of finiteness. The rationale is as follows: since in English, and in English-like languages, the specification of Q in

Table 2
Cross-linguistic expression of the *Realis/Irrealis* opposition during the RI stage

	Null subject	[+/-R]	Realis	Irrealis
Dutch, German	-	+	Inflected	Infinitives
English	-	-	Bare and inflected	Semi-auxiliaries
Greek	+	-	Inflected	Bare subjunctive
Italian	+	+	Inflected	Imperatives

The problem with this proposal is that it does not take into consideration the systematic, even if small, percentage of actual RIs that occur in null subject languages (Table 1). In this paper, we explore the consequences of this typological categorization of the RI phenomena as a point of departure for the definition of an RI developmental stage in null subject languages in order to show that in null subject languages with 'distinct' infinitival markers, the RI-type effects (and consequently the realization of Hyams' (2001) *Semantic opposition hypothesis*) is actually tied to RIs. We propose that the typological distribution of the [+/-P(erson)] and [+/-R(infinitival marker)] features determines the way in which the universal semantic opposition is going to be realized in the morphology of a given language. We specifically argue that [+P] languages with 'distinct' infinitival, gerund and participle markers such as Catalan and Spanish, have an RI developmental stage, even though it is shorter than that of [+N(umber)] languages (German, Dutch, French), which also have an infinitival marker (as Hoekstra and Hyams (1995) indicate) but it is not 'distinct'. In fact, we claim that it is the combination of [+R] and [+P] in null subject languages that triggers the early disappearance of infinitival forms reported for Hebrew (and also for Russian) in Schaeffer and Bar Shalom (2004). In the case of Basque, a [+P] language which does not have a 'distinct' infinitival marker, the RI developmental stage is closer to that of the [+N(number)] languages (the non-null subject languages). We further argue, contrary to Salustri and Hyams' (2003, in press), that even though imperatives realize *Irrealis* because of their directive feature, the imperative does not constitute the RI analogue in Romance languages. In fact, while RIs are progressively displaced by modal verbs in child Catalan and child Spanish, the imperative forms continue to have the same value in the more advanced stages of language acquisition and it happens to always coincide with the value they have in the adult language.

Our argumentation is based on two main assumptions. First, we assume that the typological characterization of the features [P] and [R] in the various languages determines which forms will be particularly accessible for the realization of the *Realis/Irrealis* opposition. Second, we will assume that the 'visibility' (distinct phonological realization) of the [P] feature plays a leading role in determining the length of the RI stage in null subject languages.

This paper is organized as follows. In Section 2 we provide an overview of the RI stage in child language, including null subject languages. Section 3 is dedicated to the syntax of RIs in null subject languages. In Section 4 we revise the various proposals concerning which forms would qualify as RI analogues in the case of null subject languages and conclude that neither the third person bare form nor the second person affirmative imperative have that status. In section 5 we show how the morphological realization of the [+P] and [+R] features in the various languages paves the way for the selection of forms which will realize the *Realis/Irrealis* semantic opposition in the early child grammars. Section 6 contains the conclusions.

2. The RI Stage in Child Language
2.1. RI languages

The apparently optional production of non-finite forms in contexts where the adult grammar requires an inflected verb poses a challenge for any theoretical account of the language acquisition process grounded on the Universal Grammar (UG) framework, given its axiom that I-grammars do not allow

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the DP is linked to the telic value of the predicate and Q and Asp have a comparable value in the DP and the CP respectively, it follows that the acquisition of Det and Finiteness should be related.

optionality of any kind.[3] Thus, researchers have sought to explain why children make use of non-finite forms that are unattested in adult grammars and, also, why these forms often coexist with their grammatical counterparts, in which the verb is appropriately inflected. Among the first of such accounts is Radford's (1990) proposal. According to this author, whose research was primarily concerned with the production of English bare forms, sentences like (1d) above are found in child language because functional categories are subject to maturation and therefore, they are not available in the earliest stages of the acquisition process. This being so, the child starts out with simply a VP layer, which explains why verbs may appear non-inflected during the early stages, as shown in (2).

(2)   [VP ...V...]]]]]

Nevertheless, evidence of maturation of functional categories is hardly found in morphologically rich languages (e.g. Italian, Spanish, Catalan), and therefore this raises the undesirable question of why functional categories appear gradually in some languages but not in others.

     Rizzi's (1993/1994) *Truncation Hypothesis* deals with that issue providing a universal account of RIs in child language. The presence of RIs is explained by the lack of maturation of a principle of UG that states that all sentences (finite and non-finite) have a CP, even if this CP is not always filled with lexical material. This principle, which is fully operative in the adult grammar, is subject to maturation in the case of the child, which implies that children may truncate the structure of the clause at any node below the CP layer, resulting in utterances in which one or some functional categories are missing. In languages where infinitives check their features within the VP, i.e., German, Dutch or English, whenever the child truncates the structure of the tree below the T(ense) (TP) node, as shown in (3), a RI appears (the arrow indicates the place where the structure is truncated).

(3)   [CP [AgrP   [NegP   [TP ⬈ [VP ...V...]]]]]

When this happens, the verb remains in the VP position and the temporal interpretation of the action denoted by the verb depends on the context. However, in languages like Spanish, Catalan or Italian, infinitive verbs must raise to TP and AgrP in order to check features and therefore, these projections must be present in the structure of the clause. Thus, the existence or not of a RI period in child language is explained in terms of a parametric property of infinitives, namely, whether these raise or not to higher functional projections to check features. Since children are sensitive from very early to the parametric properties of the language they are learning, they accordingly rise infinitives to AgrP, in which case the option of truncating the tree below AgrP is not available.

     On a similar vein, Wexler (1994, 1998) and Harris and Wexler (1996) also advance an analysis whereby the appearance of RIs in child data is couched within the parametric properties of infinitives across languages. Wexler (1998) claims that Agr and T have a D-feature that must be checked by the D-feature of a DP subject. This checking operation is realized by the subject DP rising to [Spec,TP] and [Spec, AgrP], as shown in (4).

(4)   [CP [AgrP   [NegP   [TP   [VP ...V...]]]]]

     However, the child's grammar includes a constraint that the subject can check the D-feature of either Agr or T, but not both. This is called the *Unique Checking Constraint* (UCC), which competes with the requirement that both D-features are eliminated. In order to comply with the UCC, children occasionally omit T from the representation, and this gives rise to the appearance of non-finite clauses. Other times, children disregard the UCC and check both D-features on T and Agr, giving rise to a finite verb. In languages like Spanish, Italian or Catalan, Agr is the head that licenses null subjects, and

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[3] A reviewer indicates that "one can easily imagine UG-based approaches in which optionality is allowed (and there have been many such approaches in the history of generative grammar)." While it is a fact that free variation has been predicated of a number of constructions, optionality within the computational system does not seem to be allowed except as a possibility for instantiating two grammars. In this respect, we agree with Hyams (2001) that optionality is desirable neither on theoretical nor on empirical grounds.

therefore, Agr in these languages does not have an uninterpretable D-feature that must be eliminated. Therefore, the DP subject only has to rise overtly to [Spec,TP], and the UCC, which is responsible for the appearance of RIs in non-null subject languages, does not apply.

What the two latter proposals have in common is that they both explain the presence of non-finite forms in child acquisition data by resorting to parametric properties of the functional categories T and Agr. Rizzi's and Wexler's analyses are also similar in that they both claim that children become aware of these parametric properties very soon, suggesting, on the one hand, that children set parameters to the correct value very early and, on the other, that functional categories are available from the very beginning of the acquisition process, contra Radford (1990).

2.2. The 'Cinderella' languages

As we saw in Table 1 above, the percentage of non-finite forms in root contexts (the RIs) produced by children acquiring null subject languages is not as high as the one in non-null subject languages like Dutch or German. However, a close scrutiny of the production of RIs in null subject languages reveals that, as we will show below, RIs are consistent across children and across languages.[4] This implies that there is in fact an RI stage in null subject languages though it is shorter. If this is the case, and in accordance with Hoekstra and Hyams' (1998) *Modal Reference Effect*, the infinitival morphology should be linked to a modal reading, which is the reason why Dutch RIs are modal while English bare forms are non-modal. Consequently, RIs in null subject languages with infinitival morphology will have modal (tenseless) interpretation and therefore an *Irrealis* value in this child grammar.

2.2.1. Catalan

Bel (1998, 2001) isolates a RI stage in three monolingual Catalan children. In her data, RIs represent 6% of the total sentences produced during the period which has been agreed upon as representing the RI stage. However, at the age of 1;10, the percentage of RIs found in these children's data resembles the percentages found in RI languages. In table 4 we represent the percentages obtained for one of the children during the period between 1;10 and 2;5.

Table 3
RIs in child Catalan

Júlia	
Age	RIs
1;10	21%
2;0	3.2%
2;1	3.9%
2;2	9.8%
2;5	5.6%

Adapted from Bel (2001)

With respect to the interpretation of RIs, Bel's analysis of the infinitival forms shows that they convey modal as well as temporal meanings in different proportions depending on the child, as shown in the examples in (5). In Júlia's corpus the proportion is 75% *realis* and 25% modals.

(5)a.　Sortir　　　　　　　　　(Júlia, 1;10)　　　　(*irrealis* value)
　　　come out-INF

(5)b.　Això recollir,　　mama　(Júlia, 2;1)　　　　(*realis* value)
　　　this　pick up-INF, mummy

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[4] We have coined the term 'Cinderella languages' to refer to the way in which null subject languages have been dealt with in relation to RIs. Because it was first argued that they did not display an RI stage, careful investigation of a possible RI stage in these languages was not carried out for almost a decade. In other words, as in the case of Cinderella, they were 'ignored'.

2.2.2. Spanish

It has also been shown that children learning Spanish also produce RIs at the very early stages of development. For instance, Liceras, Valenzuela and Díaz (1999) show that in child L1 Spanish RIs occur mainly between 1;7 and 1;8, as shown in table 4.

Table 4
RIs in child Spanish (adapted from Liceras, Valenzuela and Díaz 1999)

	Inflected				Infinitives			
	Stage I		Stage II		Stage I		Stage II	
Magín	173	91.05%	672	99.7%	17	9.8%	2	0.3%
María	147	67.7%	418	97.4%	70	32.2%	11	2.6%

Stage I: from 1;0 to 1;9 Stage II: from 2;5 to 2;7

Liceras et al. (1999) also indicate that these infinitives can have intentional (modal) value sometimes whereas at other times they have an extensional (descriptive or ongoing activity) value, as shown in (6).

(6)a.   El otro buscar   (María, 1;8)   (*realis* present value)
        the other look for-INF

(6)b.   Este   tapar   (María, 1;7)   (*realis* past value)
        this one cover-INF

(6)c.   Sentar   (María, 1;8)   (*irrealis* value)
        sit down-INF

Perales, Spradlin and Liceras (2004) also isolate non-finite temporal infinitives, that is, RIs with a *Realis* value, produced by María in the López-Ornat's (1994) corpus.

Bel (1998, 2001) also analyzed the data from three monolingual Spanish-speaking children. The data from María show, in line with the data reviewed so far, that the percentage of RIs reaches significant percentages in the first recordings, more specifically in the period ending at age 1;9, as shown in Table 5. As for the distinction between modal and temporal readings (and contrary to Hoekstra and Hyams's prediction), data show that the proportion of RIs with *realis* and *irrealis* value is 49% and 51%, respectively.

Table 5
RIs in child Spanish

	1;7	20.2
	1;8	11.4
	1;9	8.6
María (Spanish)	1;10	8.3
	1;11	2
	2;0	5.4
	2;1	2.2

Adapted from Bel (2001)

Maria's data on table 5 show that as she approaches the two years of age, RIs decrease. This contrasts with children learning non-null subject languages in that the latter often produce RIs well past the three years. Thus, it appears that children learning null subject languages do produce a fair amount of RIs, but they cease to do so earlier than children speaking non-null subject languages.

2.2.3. Basque

Ezeizabarrena (2002) analyzed the production of non-finite forms by three children learning Basque and Spanish. This author collapses the number of RIs into four stages, as represented in table 6, where it is shown that Basque-speaking children produce RIs beyond the two years of age, but not further than three. In fact, the highest percentages of use of RIs are found around the age of 2 (see the first and second row of data for Mikel and Oitz). From then on, the percentage of RIs decreases considerably (see the third row of data for Mikel and Oitz, and the second row for Jurgi).

Table 6
RIs in child Basque

Mikel		Jurgi		Oitz	
Age	%RIs	Age	%RIs	Age	%RIs
1;07-1;11	31.6	1;11-2;07	20.5	1;06-2;02	38.6
2;00-2;03	15.2	2;08-3;00	10	2;03	22.5
2;04-2;09	2.6	3;01-3;03	3.1	2;04-2;06	13.1
2;10-4;0	3.2	3;04-4;01	1.9	2;07-3;00	0.5

Adapted from Ezeizabarrena (2002)

As was the case with the Catalan data, RIs in child Basque also have a *realis* and *irrealis* interpretation, as shown in (7).

(7)a.   Ho(r)i amatau   (Mikel, 2;1)   (*irrealis* value)
        that   turn off-INF

(7)b.   Hartu   Ana!   (Mikel, 1;9)   (*irrealis* value)
        Take-INF Ana

(7)c.   Hemendik pasa   (Jurgi, 2;7)   (*realis* value)
        here   pass-INF

In a recent article, Schaeffer and Bar-Shalom (2004) have also shown that the production of RIs in Hebrew-speaking children exhibits a timed pattern. More specifically, they claim that "Hebrew-speaking children younger than age 2;0 produce a fair amount of RIs. After age 2;0, the proportion of RIs is negligible" (Shaeffer and Bar-Shalom 2004: 92). The same is the case for child Russian, where data from Snyder and Bar-Shalom (1998) and Brun et al. (1999) show that there is a significant amount of RIs around age 1;8-1;9, but they drop dramatically after that age. In order to explain why children learning these languages recover earlier from the RI stage, they propose that it has to do with the fact that verbs in Hebrew and Russian are marked for Person and Tense, and not only for Number. As said by Brun *et al* (1999) RIs in Russian frequently show a temporal meaning; in their data 74% of RIs have a temporal meaning (ongoing or past).

What this overview of the production of RIs in null subject languages shows is that (i) the number of RIs is scarce but consistent across children and across languages and (ii) that the RIs of null subject languages, unlike those of non-null subject languages, may encode both *Realis* and *Irrealis* value. Therefore, any proposal intended to define a universal RI-stage in child language must account for the fact that the production of RIs by children learning null subject languages is shorter and also explain why these languages differ from [+N] languages in how the *Semantic Opposition Hypothesis* is realized.

3. The Syntax of RIs in Null Subject Languages

In order to account for children's RIs in Spanish and Catalan, Bel (1998, 2003) adopted Rizzi's (1993/1994; 1994) *Truncation Hypothesis* and extended this hypothesis to all non-finite verb forms

(infinitives, gerunds and participles). Rizzi's analysis establishes that a given structure with a non-finite verb root is a truncated structure at the level of the TP, as shown in (3) above. This analysis implies that, if AgrP and TP are not projected, we will not expect to find subjects with a non-finite root form. In fact, in Bel's corpus only eight infinitives with subjects are attested (out of a total of 119 RIs) and no cases of gerunds or participles with an overt subject are found. Table 7 displays the contingency between the presence or absence of an overt subject and finiteness of verb forms (infinitive, gerunds and participles) in root constructions, which happens to be significant (p < 0.001).

Table 7
Overt vs. null subjects in finite and non-finite root constructions
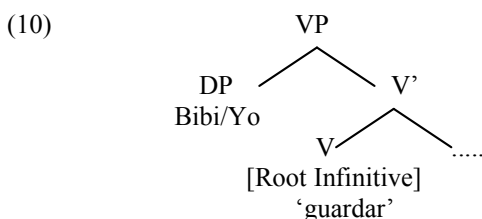of child Spanish and Catalan (from Bel 2003)

	Null Subjects	Overt subjects
Finite Constructions	1317	512
Non-finite root constructions	181	8

Chi-square = 50.5588; $p \leq 0.001$

Lacking tense, RI clauses display certain restrictions while finite clauses do not. For instance, auxiliaries and copular verbs cannot appear with RIs because they need to be licensed by Tense: they are generated in T or need to rise to T, and, what is more important to our analysis, subjects cannot appear in non–finite clauses. Consequently, agreement errors in these constructions would consist of the presence of an overt subject with a Root Infinitive. As shown in Table 6, the three Spanish and the three Catalan children only produced the eight errors of this kind listed in (8) and (9), respectively.
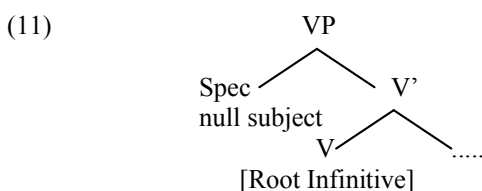
(8)a. <u>Bibi</u> [muñeco]   dormi(r).   (María, 1;8)
        Baby (toy)   sleep-inf

(8)b. *Bibi aná (?), bibi dormi(r) no.*   (María, 1;8)
        Baby go-inf, baby sleep-inf no

(8)c. *Yo gu(ard)a(r).*   (María, 1;10)
        I   keep-inf

(8)d. *Yo senta(r), ¿vale?*   (María, 2;0)
        I   sit-inf

(8)e. *Yo senta(r); tú   tam(bi)én.*   (María, 2;0)
        I   sit-inf,   you too

(8)f. *Yo ab(r)i(r) la puelta.*   (María, 2;1)
        I   open-inf the door

(9)a. *A   mama   colar. [% corria]*   (Júlia, 2;2)
        (The) mommy run-inf

(9)b. *A Júlia   se(u)re aquí.*   (Júlia, 2;2)
        (the) Júlia sit-inf   here

Following Bel (2001), (8) and (9) can be analyzed as follows: first, in line with the *Truncation Hypothesis*, we assume that RIs are VPs; second, and according to the *VP–Internal Subject Hypothesis*, we assume that DP subjects are generated in the VP. Thus, instances of a RI with an overt DP would have the structure in (10).

(10)

```
                    VP
          ┌─────────┴─────────┐
         DP                  V'
        Bibi/Yo         ┌─────┴─────┐
                        V          .....
                  [Root Infinitive]
                     'guardar'
```

In order to determine how Case is assigned to the subject DP in (10), given that the structure lacks T, we would have to assume that DP subjects have 'default' nominative case. Evidence for this seems to come from the examples (8c–f) since 'yo' (=I) is a nominative subject pronoun.
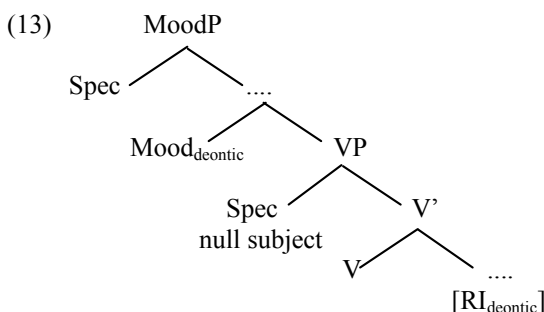
As for the analysis of null subjects in RI constructions, lack of T (and, consequently, phi-features) paves the way for the occurrence of null subjects in RI constructions. We can assume that null subjects remain in [Spec, VP] as shown in (11), since there is not a [Spec, TP] where the null subject could move to[5].

(11)

```
                    VP
          ┌─────────┴─────────┐
         Spec                 V'
      null subject      ┌──────┴──────┐
                        V            .....
                  [Root Infinitive]
```

The structure in (11) can account for the *Realis* value of RIs. In this structure nothing prevents the utterance from acquiring a Tense value *via* discourse, in a deictic way, because V occupies the highest position of the tree. In order to account for the *Irrealis* value that the child RIs have in the various null subject languages discussed in the previous section, Bel (1998, 2001) proposes a structure which involves a Mood projection. Adopting a simplified version of Cinque's (1999) proposal, Bel assumes that epistemic modality is the highest projection in the structure and deontic modality (volitional, obligation, permission) appears below TP as shown in (12).

(12)   MoodPepistemic > TP(past) > TP(Future) > MoodPirrealis > (…) AspPhabitual > (…) >
        MoodPvolitional > (…) TP(Anterior) > (…) > AspPdurative > AspPgeneric/progressive >
        AspProspective > MoodPobligation > MoodPpermission/ability > (…) > VP

Epistemic modality occurs late in child language development. However, the modal values of RIs comprise volitional readings, obligation readings, etc., i.e., they have a deontic interpretation. This fact allows Bel to formulate the truncated structure in (13), which makes it possible to accommodate these readings.

(13)

```
        MoodP
    ┌─────┴─────┐
   Spec        ....
          ┌─────┴─────┐
      Mood_deontic    VP
                ┌──────┴──────┐
               Spec          V'
            null subject  ┌────┴────┐
                          V        ....
                     [RI_deontic]
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[5] As for the nature of the null subject category occupying this position, two different types of empty categories could be postulated, a null constant (*nc*), *à la Rizzi* (1994) or PRO (*à la Hyams* 1996). We will not explore this here. For an account of the advantages and disadvantages of both constructions see Bel (2003).

In (13), Mood attracts the deontic feature of the RI and enters into a checking relation with V because in a truncated structure, without a TP, there are no features intervening between Mood and V. As a consequence, the modal reading arises (Bel 1998, 2001).

4. RI Analogues

In this section we discuss two proposals concerning possible RI analogues for null subject languages in order to show that, at least for Spanish and Catalan, neither the 'bare' form nor the imperative second person singular qualify as RI analogues.[6]

4.1. Default forms

Spanish and Catalan 'bare' forms do not qualify as an RI analogue because besides overwhelmingly having a 3rd. person referent (the third person has the exact same phonetic realization as a 'bare' form) they always have temporal reference (*Realis* value). Bel's (1998) analysis of María's (one of her Spanish speaking subjects) and Julia's (one of her Catalan speaking subjects) third person singular forms (see tables 8 and 9 respectively) provides clear evidence that this 'bare' form takes, significantly, with present value.

Table 8 (Adapted from Bel 1998)
Time values of the 3rd present tense and the RI. María (1;7-2;1)

Verb forms	Present	Not present
3rd present	420	0
Infinitive (RI)	22	28

Chi-square = 250.0995; $p \leq 0.001$

Table 9 (Adapted from Bel 1998)
Time values of the 3rd present tense and the RI. Júlia (1;10.24-2;5.8)

Verb forms	Present	Not present
3rd present	232	0
Infinitive (RI)	14	10

Chi-square = 100.5962; $p \leq 0.001$

4.2. The imperative analogue

It has been argued that children learning null subject languages do go through a RI stage that is characterized by the overwhelming presence of imperative forms (Salustri and Hyams 2003, in press). These authors argue that imperatives are the RI analogue in null subject languages because: (i) they share with imperatives "the mapping of irrealis mood onto a tenseless clausal structure" (Salustri and Hyams, in press); (ii) imperatives occur more often in child data than in adult data; and (iii) imperatives occur more often in the data of children learning null subject languages than in children learning non-null subject languages. However, there are several arguments against this claim.

Bel (1998) counted the number of imperative forms in the data of three Catalan-speaking and three Spanish-speaking children.[7] She found that 29.4% of the Catalan verbs and 29.6% of the Spanish verbs

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[6] For reasons of space we cannot discuss here Hyams' (2001) proposal according to which English semi-auxiliaries are the RI-analogue for this language. However, we would like to suggest that while these forms may be the precursors of actual modals, it is far from obvious that they would qualify as RI analogues.

[7] The countings refer to the data analyzed by Bel (2001: 90-91).

Child	L1	Age	Recording Sessions
Julia	Catalan	1;7,19 – 2;6.25	17
Pep	Catalan	1;6.23 – 3;0.27	18
Gisela	Catalan	1;7.14 – 3;0.29	14
María	Spanish	1;7– 2;6	12
Emilio	Spanish	1;8.13 – 2;11.24	18
Juan	Spanish	1;7.2– 2;10.21	11

are imperatives as can be seen in table 10:

Table 10

Imperatives in child Catalan and Spanish

	Total imperatives	Total verbs	% Imperatives
Catalan	550	1618	29.4%
Spanish	1149	3400	29.6%

Even though the percentages found in child Catalan and Spanish are in accordance with the Salustri and Hyams' (in press) findings, the conclusion that these forms are the equivalent of RIs deserves further scrutiny. To begin with, grouping the number of imperatives across files in a single percentage is misleading because what the data show is that children continue to produce imperatives well beyond they have acquired tensed forms (past, present and future). Furthermore, there is not a decrease, contrary to what happens in the case of RIs in [+N] languages.

Secondly, RIs and these imperative forms do not share the same referential properties because imperative forms in these children's data are only second person singular, whereas RIs, as non-personal forms, may refer to any person and, as a matter of fact, Bel (2001) reports that most of the RIs she found in her data referred to the first or third persons.

Thirdly, imperative forms are tenseless and invariably refer to the speech time whereas RIs, despite being also tenseless forms, may refer to various times. In this respect, let us recall that 13% of Dutch RIs had a temporal interpretation while, according to Bel (1998, 2001), the percentage of RIs with temporal value reached 50% in some cases. Thus, its seems to us that there are important considerations against considering the imperative an analogue of RIs in null subject languages.

Furthermore, Salustri and Hyams (in press) point out that imperatives are restricted to eventive predicates and suggest this is in accordance with the *Eventivity Constraint* stated by Hoekstra and Hyams (1998). Nonetheless, the unavailability of stative imperatives is an intrinsic and fundamental property of states themselves, which is manifested in the ungrammaticality of sentences like (14):

(14) *know the lesson!

Bel (1998, 2001) noted this and also that RIs in child Catalan and Spanish were restricted to eventive predicates like activities and accomplishments, but that another type of events, namely achievements, were incompatible with RIs. From this, Bel concluded that the infinitive marker carried a [+durative] feature that is incompatible with achievements.

Finally, imperatives, in contrast to RIs, are fully grammatical both in child and adult grammars. The fact that children produce more imperatives than adults is not an argument for the analogy with RIs. In fact, children also use the 3[rd] person singular form more often than adults (as also noted by Salustri and Hyams, and also by Grinstead 1998, Aguado-Orea 2004, among others) but this does not mean that it is an analogue for the RI.

5. Person and Infinitive Features and the *Realis/Irrealis* Opposition

In order to account for the scarce but nonetheless systematic occurrence of 'real' RIs in null-subject languages as well as the fact that, in these languages, more so than in the non-null subject languages, these RIs realized the two values (*realis* and *irrealis*) of the Mood primitive (two facts pointed out in Perales et al. (2005)), we would like to articulate a tentative proposal based on the typological accessibility of the [+/-P] and the [+/-R] markers in the different languages. Specifically, we would like to suggest that there is a *continuum* of languages depending on the morphological realization of the two features and the formal status of the [+P] feature. As shown in table 11, in languages such as Catalan, Italian and Spanish, [+P], following Speas (1994) and Alexiadou and Anagnostopoulou (1998), has pronominal value (constitutes a vocabulary entry in the numeration). These languages also have a distinct (unique) infinitival marker. This implies that the RI stage will be short and less obvious than in the case of languages such as Dutch, French and German, that can be characterized as [-P] or as

[+N] and whose infinitival marker is not distinct. In English, which does not even realize an infinitival marker, the RI stage will be even longer. As for Basque, it differs from the Romance null-subject languages in two respects: first, the [+P] morpheme is only phonetically realized in the auxiliary verb ([+P/AV] languages), while in Romance, and also in Greek, it is marked in both auxiliary and lexical verbs ([+P/ALV] languages). This accounts for the in-between length RI stage which characterizes Basque child language. As for Greek, a language whose [P] shares the pronominal status with the Romance languages, the available bare form realizes the *irrealis* value but for a short period of time, as in the case of Romance.

Table 11
Towards a typology of a RI universal stage in child language

[P]	[R]	RI stage	Languages
+ [ALV]	+ Distinct marker comeR "to eat"	° Short	Catalan, Italian, Spanish: Null subject languages [+P] •RIs with temporal value (50% aprox.) •'salient' imperatives: less irrealis RIs
+ [AV]	+ Non-distinct marker etorri "to come" apurtu "to break"	°° Longer	Basque: Null Subject Language [+P] • RIs with realis and irrealis value • Bare imperatives
—	+ Non-distinct marker habeN "to have/they have" mangER "to eat" mangÉ "eaten"	°°° Very long	Dutch, German, French: Non-null subject languages [+N] • High % of irrealis RIs • Low % realis RIs (13%) • Bare imperative
+ [ALV]	— No infinitive	° Short	Greek: Null subject language [+P] • Lacks infinitive • Irrealis value realized via available bare form (bare subjunctive) • Inflected forms realize realis value
—	— No infinitival marker	°°°° Longest	English: Non-null subject languages [+N] • Bare forms realize realis and irrealis • Bare imperative

This proposal allows us to provide an explanation for the short, but evident, RI stage which characterizes [+P] languages, something that the feature [+N], which in Hoekstra and Hyams' (1995) analysis differentiates [RI] and [-RI] languages, could not account for. In fact, we would like to argue that it is not the feature [+N] but the feature [+P] that determines the length of the RI stage. In this respect, we agree with Schaeffer and Bar-Shalom (1995). However, unlike these authors who suggest that the deictic properties of P and T serve as bridges between syntax and pragmatics facilitating the acquisition of obligatory finiteness (the obligatory anchoring of the event in the discourse), we would like to suggest that the reasons for the protagonism of the feature [+P] are, first, the fact that its morphological realization is both salient and pervasive—which leads children to differentiate between finite and non-finite forms very early—and, second, its pronominal (interpretable) nature, which implies that children have to analyze it as one of the vocabulary entries in the numeration or lexical array. Furthermore, we would also like to suggest that the availability of a distinct [+R] marker, accelerates the process of abandoning of the RI stage with respect to languages such as Basque. Thus, in principle, we could propose that the combination of the features [P] and [R] determines the length of the RI stage according to the *continuum* which is illustrated in Figure 1.

Figure 1
The RI stage length *continuum*

Type of language:

[+P] [+R] ——————— [+P] [-R] ——————— [-P] [+R] ————— [-P] [-R]
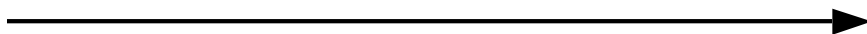
However, in order to accommodate the fact that Greek seems to pair up with Romance languages rather than with Basque or English (each of which have a [-] value, we would like to argue that, given the short length of the RI stage which characterizes Greek, a [-R] language, it is the 'visibility' and semantic quality of the [+P] feature that is mostly responsible for how children activate the values which lead them to identify finiteness and, consequently, abandon the RI stage.

References

Aguado-Orea, José Javier. 2004. *The Acquisition of Morpho-syntax in Spanish: Implications for Current Theories of Development.* PhD dissertation, University of Nottingham.

Bel, Aurora. 1998. *Teoria lingüística i adquisició del llenguatge. Anàlisi comparada dels trets morfològics emcatalà i en castellà.* PhD dissertation, Universitat Autònoma de Barcelona.

Bel, Aurora. 2001. The projection of aspect: A key in the acquisition of finiteness? In M.Almgren *et al.* (eds.), *Reseach on Child Language Acquisition. Proceedings of the 8th Conference of the International Association for the Study of Child Language.* Somerville, MA: Cascadilla Press. 1297-1313.

Bel, Aurora. 2003. The syntax of subjects in the acquisition of Spanish and Catalan *Probus*, 15:1, 1–26

Boser, Katharina, Barbara Lust, Lynn Santelmann and John Whitman. 1992. The syntax of V2 in early German Grammar: the strong continuity hypothesis. *Proceedings of NELS 1992*. Amherst, Mass.: Graduate Linguistic Student Organization, Department of Linguistics, University of Massachusetts, Amherst.

Brun, Dina, Sergey Avrutin and Maria Babyonyshev. 1999. Aspect and its temporal Interpretation during the optional infinitive stage in Russian. *Proceedings of BUCLD 23* 1:120–131. Sommerville: Cascadilla Press.

Cinque, Giuglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective.* Oxford: Oxford University Press

Ezeizabarrena, María José. 1997. Infinitivos verbales en el lenguaje de niños bilingües. Lourdes Díaz and Carmen Pérez (eds.), *Views on the acquisition and use of a second language.* Proceedings of EUROSLA'97. Barcelona: University Pompeu Fabra, 177-190.

Ezeizabarrena, María José. 2002. Root infinitives in two pro-drop languages. In A. T. Pérez-Leroux and J. M. Liceras (eds.), *The Acquisition of Spanish Morphosyntax: the L1/L2 connection.* Dordrecht: Kluwer.

Ferdinand, Astrid. 1996. *The development of functional categories: the acquisition of the subject in French.* The Hague: Holland Academic Graphics.

Grinstead, John. 1998. *Subjects, sentential negation and imperatives in child Spanish and Catalan.* Ph.D dissertation, Los Angeles: UCLA.

Guasti, Maria Teresa. 1994. Verb syntax in Italian child grammar: Finite and nonfinite verbs. *Language Acquisition* 3: 1-40.

Harris, Toni and Kennetth Wexler 1996. The optional infinitive stage in child English: Evidence from negation. In H. Clahsen (ed.) *Generative Perspectives in Language Acquisition*. Amsterdam: John Benjamins.

Hyams, Nina. 1996. The Underspecification of Functional Categories in Early Grammars. In *Generative Perspectives on Language Acquisition. Empirical Findings, Theoretical Considerations and Crosslinguistic Comparisons*, H. Clahsen Ed. Amsterdam: John Benjamins. 91-127

Hyams, Nina. 2001. Now you hear it, now you don't: the nature of optionality in child grammars. *Proceedings of the 25 BUCLD*. Somerville, MA: Cascadilla Press.

Hyams, Nina. In press. Aspect matters. En Deen, K. U. J. Nomura, B. Schulz and Bonnie D. Schwartz (eds.) *Proceedings to the Inaugural Conference on Generative Approaches to Language Acquisition – North America (GALANA)*. Cambridge MA; UCONN/MIT Working Papers in Linguistics.

Hoekstra, Teun and Nina Hyams.1995. Missing heads in child language. In C. Koster and F. Wijnen (eds.), *Proceedings of the Groningen Assembly on Language Acquisition held at the University of Groningen, 7-9 September 1995*, Groningen: Centre for Language and Cognition, 251-260.

Hoekstra, Teun and Nina Hyams .1998. Aspects of root infinitives. *Lingua [Special issue on Language acquisition: Knowledge representation and processing, Antonella Sorace (ed.)]* 106: 81-112.

Ingram, David and William Thompson. 1996. Early syntactic acquisition in German: evidence for the Modal Hypothesis. *Language*, 72(1): 97-120.

Liceras, Juana. M., Elena Valenzuela and Lourdes. Díaz. 1999. L1/L2 Spanish grammars and the pragmatic deficit hypothesis. *Second Language Research* 15(2): 161-190.

Perales, Susana, Juana. M. Liceras and Aurora Bel. 2006. Some remarks on the realization of the *realis/irrealis* opposition in child language: Towards a universal characterization of the Root Infinitive stage across languages. *Cahiers Linguistiques d'Ottawa* 34: 87-98.

Perales, Susana, Kenton Todd Spradlin and Juana M. Liceras. 2004. More on the issue of optionality: Evidence from finiteness in child L1 and child L2 Spanish. In E. González-Alvarez and A. Rollings (eds.) *Studies in Contrastive Linguistics. Proceedings of the 3rd International Contrastive Linguistics Conference.* Universidad de Santiago de Compostela Publicaciones.

Radford, Andrew. 1990. *Syntactic Theory and the Acquisition of English syntax*. Oxford: Blackwell.

Rizzi, Luigi. 1993/1994. Some notes on linguistic theory and language development: The case of root infinitives. *Language Acquisition* 3: 371-393.

Rizzi, Luigi. 1994. Early null subjects and root null subjects. In T. Hoekstra and B. D. Schwartz (eds.), *Language Acquisition Studies in Generative Grammar*. Amsterdam: John Benjamins.

Schaeffer, Jeannette and Dorit Ben Shalom. 2004. On root infinitives in child Hebrew. *Language Acquisition* 12 (1): 81-96.

Salustri, Manola and Nina Hyams. 2003. Is there a RI analogue in Romance languages? In B. Beachley, A. Brown and F. Conlin (Eds.) *Proceedings of the BUCLD 27,* Sommerville, MA: Cascadilla Press.

Salustri, Manola and Nina Hyams. In press. Looking for the universal core of the RI stage. In V. Torrens and L. Escobar (eds.) *The Acquisition of Syntax in Romance Languages*. Amsterdam: John Benjamins.

Serrat, Miquel and Melina Aparici. 1999. Morphological errors in early language acquisition: Evidence from Catalan and Spanish. Paper presented at the 8th Conference of the International Association for the Study of Child Language. Donostia-San Sebastián.

Snyder, William and Eva Bar-Shalom. 1998. Word order, finiteness, and negation in early child Russian. In A. Greenhill, M. Hughes, H. Littlefield and H. Walsh (eds.) *Proceedings of the 22nd Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press.

Speas, Margaret. (1994) Null arguments in a theory of economy of projection. *University of Massachusetts Occasional Papers in Linguistics* 17, 179-208.

Tsimpli, Ianthi-Maria. 1992. *Functional Categories and Maturation: The Prefunctional Stage of Language Acquisition*. PhD dissertation, University College London.

Ud Deen, Kamil. 1997. The interpretation of root infinitves in English: is eventivity a factor? Unpublished manuscript UCLA.

Wexler, Kenneth. 1994. Optional infinitives, head movement and the economy of derivations. In D. Lightfoot and N. Hornstein (eds.), *Verb Movement*. Cambridge: Cambridge University Press.

Wexler, Kenneth. 1998. Very early parameter setting and the unique checking constraint: A new explanation of the optional infinitive stage. *Lingua* 106: 23-79.

Wijnen, Frank. 1997. The temporal interpretation of Dutch children's root infinitivals: the effect of eventivity. *First Language* 18: 379-402.

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