Root Infinitives: A Comparative View[1]

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Abstract
Investigating Root Infinitive constructions (RIs) in the adult grammar, we concentrate on a comparative view between English and Spanish. Through a careful study of the syntactic and semantic properties of RIs, and their cross-linguistic differences, we present strong arguments for the internal structure of RIs that we propose: English RIs are deficient TPs, while Spanish RIs have an additional Comp-related functional projection FP on top. This structural difference accounts for the syntactic similarities and differences in RIs in the two languages. On the semantic side, we propose that RIs are indefinite descriptions of events. RIs crucially involve two related terms, the RI itself (*John read this book?!*) and the Coda (*That's impossible!*), where the relating predicate is an exclamative operator with scalar properties akin to the focus particle *even*. We show that the RI, the exclamative operator and the Coda form a tripartite structure both syntactically and semantically, in the sense of other standard analyses of quantificational constructions. Differences in temporal interpretation are shown to derive from the existence of the tripartite structure and the (un)availability of infinitival verb movement.

1   Introduction

In both Romance and Germanic languages, matrix sentences can show up with no overt marking of finiteness:[2]

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[2]   In the glosses, CL stands for clitic, INF for infinitive, NEG for negation, and REFL for reflexive.

(1) a. John kiss Mary?! Never!
     b. Pedro comprar vino?!   No   me lo   creo!
         Peter buy-INF   wine   NEG I   CL   believe
         'Peter buy wine?! I don't believe that!'

As the type of construction illustrated in (1) is a root phenomenon involving only infinitival verb forms, we will refer it as "Root Infinitive" (RI).[3] We think that RI-constructions provide an excellent opportunity to explore two different avenues of linguistic research at once: (i) on the one hand, they allow us to explore the effects of a given (morpho)syntactic deficiency on semantic interpretation, and thereby establish an interesting correlation between the two areas; (ii) on the other hand, they provide an unusual testing ground for the well-established hypothesis that linguistic variation is a function of morphosyntactic variation (cf. Borer 1984). In these constructions, as in others involving only non-finite verb forms in matrix contexts, morphosyntax is kept to a minimum. If comparative studies reveal interesting parameters of variation, these can be directly associated to the few bits of morphology that these constructions realize.

RIs occur in adult grammars across many languages. We concentrate on a comparison between the properties of RIs in Spanish and those in English; for a wider comparison along the lines suggested here, see Etxepare and Grohmann (in progress).[4] In order to set RIs apart from other constructions, and following to some extent Akmajian (1984), we will mark punctuation for RIs as done in (1) throughout this paper, indicating not only the rising intonation associated with these constructions (expressed by the question mark), but also the exclamative character they bear (as indicated by the exclamation mark). It also seems that RIs used by adults express something like the denial of an hypothetical event; we indicate this not only by punctuation, but also by the specifying expression following the RI, which we refer to as the "Coda" (always uttered as an exclamation).

The paper is structured as follows. Section 2 contains an overview of the syntactic characteristics common to RIs across languages, exemplified by Spanish and English. Section 3 points out some important differences between English and Spanish RIs concerning the position of the infinitive in the clause structure and the temporal interpretation of these constructions. In section 4, we provide a semantic characterization of RI-constructions. In section 5, we present our syntactic proposal for RI-constructions. In section 6, we derive the parametrical differences between English and Spanish. Section 7 revisits some unsettled cases. Section 8 briefly summarizes.

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[3] This term comes from Rizzi's (1993/4) study on a child language phenomenon that seems to resemble our construction to a large extent. While we limit our discussion to RIs in adult grammars, much recent literature deals with the phenomenon in early child language; see for example Boser et al. (1992), Wexler (1994), Schütze (1997), Hoekstra and Hyams (1998), among many others. As precursors for RIs from an adult perspective, Akmajian's (1984) "Mad Magazine" sentences come closest to an extensive overview of the syntactic and semantic properties of these constructions.

[4] For a wider implementation of this approach, see Etxepare and Grohmann (in progress); see Grohmann (1999, 2000c) for discussion of RIs in German, and Etxepare and Grohmann (2000) for conjoined RIs.

2   Properties of Root Infinitives

RIs as an adult phenomenon have been discussed in considerable depth first as "Mad Magazine" sentences by Akmajian (1984) and more recently by Lasser (1997a, 1997b), Grohmann (1999, 2000c), Avrutin (2000), Etxepare and Grohmann (2000), to name but a few. RIs occurring in child language have been the topic of much research over the past decade (see note 3). The following shall serve as an overview of the most salient properties of these constructions, as they apply to RIs in both (adult) English and Spanish; at the end, we will have good arguments for the structure(s) we assign to RIs.

2.1   Adverbial modification in RIs

In order to get a grasp on the structure of RIs and the functional projections that must be present, we investigate the behaviour of adverbs and possibility of adverbial modification.
Adverbs that imply a propositional argument are impossible in RIs:

(2)   a. * Edmund luckily win the elections?! That would be something!
       b. * The Germans then riot?! Not those people!
       c. * George perhaps choke on another pretzel?! Not during this term!

(3)   a. * El   Athletic afortunadamente ganar   la   liga?!   Imposible!
            the Athletic luckily   win-INF the league impossible
            'Athletic [Bilbao] luckily win the league ?! Impossible!'

       b. * Los bilbainos   entonces apiñarse   en la   ría?! Qué locura!
            the hooligans   then   meet-INF-REFL in   the river how foolish
            'The hooligans then meet along the river?! How foolish!'

       c. * Su   presidente quizás   arengar   a   la   afición?! Ni   hablar!
            their   president perhaps cheer-up-INF to the fans   NEG way
            'Their president perhaps cheer up the fans?! No way!'

Adverbs compatible with a root modal interpretation are possible in RIs:[5]

(4)   a.   Pedro comprar eso necesariamente?!
             Peter buy-INF that necessarily
       b.   Peter necessarily buy that?!

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[5]   The English translations of the Spanish examples serve to reflect the corresponding RI-construction; we will thus illustrate the grammaticality status of a given datum in both languages by providing the Spanish structure and its gloss in the a- and the English structure qua translation in the b-examples. Commencing (4), we leave out the Coda where it is not crucial for the discussion, simply for expository convenience, but for an appropriate parsing of these constructions, it is always necessary (see section 5).

(5) a. María terminar   el   artículo eventualmente?!
         Mary finish-INF that paper   eventually
     b. Mary eventually finish the paper?!

(6) a. Juan besar   inevitablemente a María   otra vez?!
         John kiss-INF inevitably   to Mary   again
     b. John inevitably kiss Mary again?!

Subject-oriented adverbs are also acceptable:

(7) a. Comprar yo eso a   propósito?!
         buy-INF I   that on purpose
     b. Me willingly buy that?!

Epistemic modal adverbs, on the other hand, are generally bad, illustrated in (8):

(8) a. * María probablemente ir   allí?!
         Mary   probably   go-INF there
     b. * Mary probably go there?!

As expected, other adverbials, which tend to occur much lower in the structure, are perfectly acceptable in RIs, such as aspect-related ones:

(9) a. María levantarse   habitualmente a las seis?!
         Mary rise-INF-REFL usually   at the six
         'Mary usually get up at 6am?!'

     b. Pedro estudiar   detalladamente este tema?!
         Peter study-INF thoroughly   that topic
         'Peter study this topic thoroughly?!'

     c. Pedro casarse   con Ana otra vez?!
         Peter marry-INF-REFL   with Anna again
         'Peter marry Anna again?!'

Adverb placement may tell us something about the structural composition of a given construction and has been a testing tool for clause structure since the early days of generative grammar (cf. Jackendoff 1972). Syntactically, the adverbs above spread widely across the clause structure in RIs. If we adopt some linear ordering among adverbs — whether argued for with functional projections, such as Alexiadou (1997), Laenzlinger (1998), Cinque (1999), among others or without, like Ernst (2001), for example — the positions we have to assume for these adverbs vary from structurally low (in the VP-vicinity), to mid (AspP- and ModP-related) and high (close to TP, maybe even CP).

The following illustrates this point for English:[6]

(10) a.   Edmund [$_{VP}$ win the elections smoothly]?!
      b.   The Germans [$_{AspP}$ often riot]?!
      c.   George [$_{ModP}$ inevitably choke on another pretzel]?!

Finally, temporal adverbs are admissible, too:[7]

(11) a.   Juan leer   esas   cosas   en aquellos tiempos?! Lo   dudo!
            John read-INF   those things in old   times   CL   doubt-I
      b.   John read that sort of thing back in those days?! I doubt it!

Following the standard assumption that this class of adverbs adjoins rather low in the clause structure (certainly below TP and presumably just above VP), the data in (10) suggest that the infinitive in English remains in VP, while it raises to a higher position in Spanish. Concerning the data in (4) to (7), we already have some evidence that the higher projections, around TP and above, are deficient in some sense. We address this in more detail below, but for expository purposes, present a rough draft of what projections we assume to be generally available in the clause, leaving out a more detailed discussion of CP for the time being. (VP stands for the complex thematic structure that contains the base-generated subject, whether via VP shells or a light verb phrase.)

(12)   CP > TP > ModP > AspP > VP

The adverbs in (4) to (7), as a first pass, can be adjoined to the subject position (TP) and ModP, respectively, while epistemic modal adverbs are arguably licensed in the Comp-layer. Given that these are ruled out in RI-structures (cf. (8)), it suggests that CP is not present in RIs or at least deficient in a sense we will specify below.

We will be concerned with a more exact position of the raised infinitive in section 3; we thus postpone a discussion of the clausal structure of RIs, but it becomes clear already that such a structure has to incorporate a raised subject in English (cf. (4)-(7), (9)-(10)). Following standard assumptions, the specifier of TP is the obvious candidate. However, the subject cannot have raised there in the usual manner (such as case-driven movement), as it does not show nominative case. In a minimalist framework (Chomsky 1995) this means that whatever the motivation of the subject is to raise out of its base-generated VP-internal position, it does not check Case. Consider (12):

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[6]   We are not concerned with a more exact identification of the particular projections, and neither do we care much whether adverbs are adjoined to projections (as assumed here, for simplicity) or form specifiers of separate projections (as assumed by some of the scholars mentioned). The current discussion basically shows that we need to assume more structure than a bare VP with the proviso that TP is deficient in (at least) being tenseless. Assume then that adverbs are adjoined, and that there is room for several types of aspectual adverbs (call them collectively AspP), root modals (ModP) and certain temporal modifiers (TP).

[7]   But see section 3.1 and related portions of the paper for important cross-linguistic differences.

(13) a.   Mary can usually get up at 6am. (She's pretty good at that.)
      b.   She/*Her can usually get up at 6am. (She's pretty good at that.)
      c.   *She/Her usually get up at 6am?! (She's too lazy to do that!)

In regular, finite declaratives, the subject is obligatorily marked for nominative, while it bears accusative case in RIs. For the purposes of the current investigation it suffices to note that accusative is the "unmarked case" in English, also known as the "citation form," and the subject shows up in nominative case in other languages such as Icelandic or German, and also Spanish.[8]

The adverbial evidence in this section shows that syntactically, RIs seem to have an upper bound in a (deficient) tense phrase. In section 3 we will show that the left periphery of Spanish and English is actually different. This difference will prove to be instrumental in deriving other parametric differences between the two languages. Following Ormazabal (1995), we assume that complementizerless clauses denote eventualities, not propositions, an assumption we pick up in our discussion of the semantics of RIs.[9]

2.2   (Non-)Perfectivity and RIs

Neither in Spanish nor in English can RI-constructions adopt the form of a perfect:

(14) a. * Helmut   haber   ganado   las   elecciones en 1994?!
           Helmut   have-INF   won   the   elections   in 1994
     b. * Helmut have won the elections in 1994?!

The eventuality denoted by RIs cannot have the interpretation of deictic, perfective aspect. At this point, mentioning of such a non-perfectivity constraint on RIs should suffice. We will provide a semantic explanation of this general constraint in section 6 and return to a syntactic account in section 7.

Lasser (1997a:64) proposes a "Non-Completedness Constraint," a ban on the reference of an RI to a completed event, which she then extends into a "Non-Perfectivity

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[8]   Again, this is nothing new: Akmajian (1984) makes the same observation. As a matter of fact, and here we acknowledge advice from David Lightfoot (personal communication), the status of the citation form may also vary diachronically: in earlier stages of English, the nominative was employed (see Visser 1963: 237ff.). We take the default subject Case, whatever its exact nature, to be something comparable to the citation form made available in a language. Schütze (2001) provides a formal account for an implementation of the notion "default case" under which, crudely put, nominal expressions in positions where they cannot check Case are assigned a default marker.

[9]   What we have in mind, for RIs, is the type of semantic entity that one finds in bare infinitival complements to verbs of perception and causation, in the analysis provided by Higginbotham (1983), Vlach (1983) and Parsons (1990: 15-17). Propositional objects are introduced by complementizers, and they are tensed. We assume that complementizers denote some further relation, such as Davidson's "samesaying" relation (Davidson 1984: 93-108). We elaborate on this idea in section 4.

Constraint" (Lasser 1997b:43), a term we adopt here. Lasser claims that the only acceptable past interpretations in RIs are those in which the event denoted by the infinitive takes place in the future with regard to a reference time R (in the Reichenbachian sense). As an example, consider the Russian datum in (15) (Lasser 1997b:441, from Avrutin 1997):

(15) Carevna xoxotat.
      princess laugh-INF
      'The princess started to laugh.'

In this example, the infinitive is located in the past, but interpreted as a future relative to R, so that it takes an inceptive meaning. This is clearly not the case in Spanish, where RIs of the following sort are possible (in contrast to English):

(16) a.   Juan beber   cerveza ayer?!
           John drink-INF beer   yesterday
      b. * John drink beer yesterday?!

We explain these cases in section 7. However, our view is that there is more to this property than meets the eye. In Etxepare and Grohmann (in progress), we develop a more detailed account of perfective events and RIs, where we contrast the function of the past perfect in more languages.

2.3   Interrogatives and RIs

Along the way of discussing the structure of RIs, we must determine which other parts of phrase structure, if any, are deficient or even absent in these constructions. The adverbial evidence above already suggests that the Comp-layer is deficient, at least in the sense that epistemic modality is not allowed in RIs. The following confirms the conclusion about a deficient, or even absent, Comp/CP: Wh-interrogatives are not permitted in RIs.
    Concentrating on information questions, (17) exemplifies their deviance in RIs:

(17) a. * Quién comprar   un Volkswagen?!
           who   buy-INF   a   Volkswagen
           *'Who buy a Volkswagen?!'
      b. * Who impeach the president?!

Syntactically, this suggests a structural deficiency of the Comp-layer; we will return to this issue momentarily. But the unavailability of Wh-questions in RIs may also have a semantic reason: if RIs denote eventualities, they are not predicted to occur as questions, whose standard semantics involves propositions (Karttunen 1977), an idea pursued by Hoekstra and Hyams (1998).

The Spanish (18) should not be confused with the type of infinitival construction we are interested in:

(18) a. Qué comprar en navidades?
         what buy-INF in Christmas
         'What to buy for Christmas?'

      b. A quién regalar un peluche?
         to whom give-INF a doll
         'Whom to give a doll?'

These are control structures, as is evident from the fact that they do not admit overt subjects:

(19) a. * Qué comprar yo en navidades?
         what buy-INF I in Christmas
         *'What I/me to buy for Christmas?'

      b. * A quién regalar Pedro un peluche?
         to whom give-INF Peter a doll
         *'Whom Peter to give a doll?'

In fact, they are equivalent to English Wh-questions which contain the overt infinitival marker *to* (as already indicated in the translations for (18) and (19) above):

(20) a. What to do in those cases?
      b. When to buy a Volkswagen?

These cases, on the other hand, are analogous to the embedded ones in (21):

(21) a. I don't know [what to do].
      b. I know [when to buy those].

We can thus safely assume that Wh-interrogatives are not permitted in RI-constructions. Without drawing the parallels any tighter, this supports cross-linguistic data gathered from RIs as they occur in child language (see, for instance, Crisma 1992, Haegeman 1995, Guasti and Rizzi 1996).[10]

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[10]   However, Phillips (1998) claims that children's RIs can contain information questions if these do not involve Wh-movement. He finds the existence of subject Wh-questions in children's speech. This could be related to the fact that in some cases, children's RIs can also be factual statements (claims of existence) and even commands (cf. Boser et al. 1992, Lasser 1997a). If this is the case, children's RIs embrace all the range of possible illocutionary modalities and are in this sense different from adult ones (see also Roeper and Rohrbacher 1994).

2.4   The left periphery of RIs

On the non-interrogative side of CP, left-dislocated elements give us a further clue as to what parts are deficient, and how the two languages under consideration might differ.

In (22) we show that Spanish RIs may involve a fronted, topicalized argument; this fronted element, however, may not be base-generated in this position, as in the case of hanging topics.[11] Left dislocation of the base-generated sort is not a possible phenomenon in RIs.

(22) a.   De   Juan   reirse   Pedro?!
            about John   laugh-INF   Peter
            *'John, Peter laugh at?!'

      b. ??Juan, reirse   Pedro   de   él?!
            John   laugh-INF Peter   about   him
            *'John, Peter laugh at him?!'

A related case is that of epithets (cf. Hirschbühler 1975). In these instances it is even more obvious that the fronted element cannot have moved to its position, but must be base-generated in the left periphery (see note 11 for follow-up references):

(23) a. * Juan, el tio   comprarse   un Ferrari?!
            John the guy   buy-INF   a   Ferrari
      b. * John, the guy buy a Ferrari?!

So-called *as for*-topics, another "hanging" category, are also bad in RIs:

(24)   * En cuanto al   baloncesto, ese deporte gustarme   a mí?!
            in regard   to-the basketball that sport   like-INF-CL   to me
            *'As for basketball, me like that sport?!'

Left dislocation constructions of this type are independently known to be root phenomena; (25-26) show that in Spanish this construction may not appear embedded in subjunctive complements, although it can in indicative dependents of verbs of saying and epistemic verbs that select "Double Comp" structures (see Plann 1982, Uriagereka 1988, Suñer 1991, 1993, among others), as do other root elements, such as speech act adverbs (*frankly, sincerely* etc.):

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[11]   Since Cinque (1977) one line of approach to left dislocation constructions is that hanging topics are base-generated in their left-peripheral surface position, while clitic left dislocation involves movement. the issue is anything but solved, though there are good arguments for two different underlying derivations. See for example the collection of papers in Anagnostopoulou et al. (1997) as well as Cinque (1990), Aoun and Benmamoun (1998), Grohmann (2000a, 2000b), and others for more discussion.

(25) a. * Pedro quiere   que el baloncesto, ese   deporte me guste.
         Peter wishes that the basketball that sport   me like
         *'Peter wishes that basketball, that sport I like.'

     b.   Pedro dice que el baloncesto, que ese   deporte le gusta.
         Peter says that the basketball that that sport   CL likes
         *'Peter says that basketball that that sport he likes.'

(26) a.   Pedro quiere   que (*francamente,) te   vayas.
         Peter wants   that frankly   CL you-leave
         'Peter wants that (*frankly,) you leave.'

     b.   Pedro dice que francamente que no   esta tranquilo.
         Peter says that frankly   that NEG he-is at-ease
         'Peter says that (?frankly,) he is not at ease.'

The facts in (22-26) constitute further evidence for a deficient structure in the Comp-layer: while Spanish RIs allow one constituent to be fronted by a movement operation (namely, when it is topicalized), this constituent may not be base-generated (and relate to a resumptive element or an epithet).

We also have reasons to believe that an Infl-external focus position (e.g. Brody 1990, Campos and Zampini 1990, Laka 1994, Uriagereka 1995b, Rizzi 1997) is absent. Consider in this regard (27), where focus (FOC) is indicated by capitals:

(27) a. * BROCCOLI   comprar él?!
        broccoli-FOC buy-INF he
     b. * BROCCOLI him buy?!

These are rather high Comp-projections; below we will show that a low Comp-projection is likely to be present in Spanish RIs, but not in English ones. We will further show how this structural difference reflects on the position of the infinitive. Before going on, though, let us point out that nothing inherent to the semantic interpretation or other status of RIs rules out occurrences of focus, as focus expressed in situ is acceptable:

(28) a.   Comprar él   BROCCOLI?!
        buy-INF   he broccoli-FOC
     b.   Him buy BROCCOLI?!

2.5   Clausal structure of RIs

This section provided a first investigation of the clausal structure of RIs. We know that it is somewhat impoverished in that it lacks a positions for base-generated topics, moved

Wh-elements and displaced foci. The fact that the Comp-layer is lacking structure in RIs can also account for the impossibility of modification by epistemic modals, if epistemic modals must raise at LF to a scope position (McDowell 1987, Progovac 1994: 78-79), and this position is Comp or some further projection higher than Comp (within a more articulated Comp-layer). The Spanish left periphery does, however, make a position for topics available in RIs, something which we will capitalize on next.

   While we can easily maintain that RIs contain a regular VP, we must note that the structure between VP and Comp (the Infl-layer) has certain properties. Among these we find that movement out of VP to check grammatical functions (such as Case) is limited, but the Infl-layer has at least aspectual and (root) modal positions as well as a VP-external subject-position (in both languages). This fails to assign nominative case, where it is realized with a "default" Case (see note 8). Whether we must conclude that it is a position below a deficient T is not clear. For the sake of presentation, we take the VP-external subject position to be the regular subject position SpecTP.

   Let us thus assume the following rough maximal structure for RIs, that we will elaborate further below, with the proviso that in Spanish there is an impoverished Comp-layer on top, which we will address in the next section:

(29) $[_{TP}$ subject$_i$ T^0 $[_{ModP}$ adverb $[_{Asp1P}$ adverb $[_{Asp2P}$ adverb $[_{VP}$ t$_i$ verb object $]]]]]$

   The fact that the subject in English RIs may precede some adverbs but not others accounts for the structure (29); see also the discussion around (12) above. (27) is the structure that both English and Spanish share, given the adverbial evidence thus far. Next, we will support this structure on the basis of cross-linguistic differences.

3   Cross-linguistic differences

Beyond the common properties discussed so far, RIs in English and Spanish show a number of differences, both semantic and syntactic. In the following, we will address some of these differences in detail.

3.1   Temporal interpretation

In section 2.2, we have already seen that non-perfectivity is a general condition on RIs. We noted an important difference in the interpretation of RIs in English and Spanish as illustrated by the following contrast (cf. (16)):

(30) a.   The Germans demonstrate tomorrow/next year?! No way!
      b. * The Germans demonstrate yesterday/last year?! They did not!

(31) a. Los   aficionados juntarse   hoy/mañana/el año que viene en la   ria?!
          the   fans   meet-INF   today/tomorrow/nextyear   in   the river
          'The fans meet today/tomorrow/next year along the river?!'

      b. Los   aficionados juntarse   ayer/el año pasado   en la   ria?!
          the   fans   meet-INF   yesterday/last year   in   the river
          *'The fans meet yesterday/last year along the river?!'

We can see that RIs are impossible with deictic past temporal adverbs in English, but possible in Spanish. We will discuss the importance of this difference and an account for it in sections 6 and 7.

3.2   Topicalization

As discussed in section 2.4, English does not admit topicalization, while Spanish does:

(32) a. Las elecciones ganarlas   Edmund?!
          the elecciones   win-INF-CL   Edmund
      b. * The elections, Edmund win?!

We propose that Spanish possesses an extra functional projection FP between IP and CP that English lacks (see Uriagereka 1988, 1994, 1995a, 1995b,[12] also Laka 1994, Martin 1996). This position hosts, among other things, clitic left-dislocated topics.

3.3   The interpretation of the subject

In this section, we provide initial evidence that the infinitive raises above T^0 in Spanish, but it does not raise in English. In Spanish, the position to the left of the infinitive can only be occupied by those elements that otherwise can be topicalized in a finite sentence. In English we can find expressions in subject position that may not constitute topics.
     Consider first possible topic expressions in Spanish finite clauses. Non-restricted and negative quantifiers as well as purely indefinite and non-specific expressions make bad topics (see Cinque 1990 or Uriagereka 1995b, for example). This means that neither can be topicalized:

(33) a. * Toda clase de instrumento, Pedro (lo) maneja.
          every type of instrument   Peter CL plays
          *'Every type of instrument, Peter plays (it).'

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[12]   While we adopt Uriagereka's label "FP," it cannot host focussed elements, contrary to Uriagereka's claims (cf. (27)). We will address FP in more detail next, particularly in section 3.4.

b. * A   nadie,   Juan no   ha   invitado.
   to   nobody John NEG   has   invited
   *'Nobody, John invited.'

c. * Uno   cualquiera, yo no   (lo) he   visto pasar.
   Just   anyone   I NEG CL have seen   pass
   *'Just anyone, I have not seen him pass by.'

If these elements may not be topics, and if the first position in Spanish RIs is necessarily a topic position, we expect that the fronted elements in finite structures such as (33) would also be ungrammatical as subjects of non-finite RI-constructions. Indeed, this prediction is borne out: these non-topicalizable elements are also degraded when they occur as subjects of RIs:

(34) a. * Toda clase de gente   comprar   un Volkswagen?!
      every type of people buy-INF   a Volkswagen
      'Every kind of person buy a Volkswagen?!'

b. * Nadie   comprar   un Volkswagen?!
   nobody buy-INF   a Volkswagen
   'Nobody buy a Volkswagen?!'

c. ??Uno cualquiera comprar   un Volkswagen?!
   just   anyone   buy-INF   a Volkswagen
   'Just anyone buy a Volkswagen?!'

On the other hand, they may appear in RIs, namely when they follow the infinitive:

(35) a.   Comprar   toda   clase de gente   un Volkswagen?!
      buy-INF   every type of people   a Volkswagen
      'Every kind of person buy a Volkswagen?!'

b.   No   comprar   nadie   un Volkswagen?!
   NEG buy-INF   nobody   a Volkswagen
   'Nobody buy a Volkswagen?!'

c.   Comprar uno cualquiera un Volkswagen?!
   buy-INF just anyone   a Volkswagen
   'Just anyone buy a Volkswagen?!'

In addition (35) shows that the infinitival is higher than TP: quantified subjects such as *toda clase de gente* may not stay in situ but must necessarily raise out of VP:

(36) a. * Compró toda clase de gente un Volkswagen.
　　 b. * Compró un Volkswagen toda clase de gente.
　　 c. 　 Toda clase de gente 　 compró un Volkswagen.
　　　　　 every type of people 　 buys 　 a 　 Volkswagen
　　　　　 'Every kind of person buys a Volkswagen.'

Assuming their final position is SpecTP, the difference between (35) and (36) clearly shows that the infinitival must be higher than TP.

The English equivalents of the grammatical structures in (35) are shown in (37): while in Spanish they must follow the infinitive, in English these elements must precede it (but compare the data provided by Akmajian 1984 with those from Hyams 1996 for conflicting judgements).

(37) a. 　 Nobody buy a Volkswagen?!
　　 b. 　 Everyone buy a Volkswagen?!
　　 c. 　 Just anyone buy a Volkswagen?!

This, in turn, leads us to conclude that English RIs feature a low infinitive (inside VP) and little structure above certain adverbs. For Spanish we have evidence that the subject may appear post-verbally (inside VP) or pre-verbally, in which case it may occupy the same position as topics, but not necessarily so (viz. quantified subjects). Also, frequency and duration adverbs cannot precede the infinitive in Spanish, but they can follow it:

(38) a. * Pedro 　 a menudo 　 comprar 　 manzanas?!
　　　　　 Peter 　 often 　　　 buy-INF 　 apples
　　　　　 'Peter often buy apples?!'

　　 b. * Pedro 　 a veces 　　 comprar 　 manzanas?!
　　　　　 Peter 　 sometimes buy-INF 　 apples
　　　　　 'Peter sometimes buy apples?!'

(39) a. 　 Pedro comprar a menudo manzanas?!
　　 b. 　 Pedro comprar a veces manzanas?!

In English, these adverbs must precede the infinitive, but not the subject:

(40) a. 　 John often buy books?! Impossible!
　　 b. 　 John sometimes buy books?! Impossible!

(41) a. * Often John buy books?! Impossible!
　　 b. * Sometimes John buy books?! Impossible!

Mutatis mutandi, this supports the assumption that the infinitive does not raise in English RIs; it also suggests that the subject moves out of its VP-internal base-generated position. In Spanish, we have evidence to say that the verb raises higher than T^0, even in RIs. Consider, for instance, the relative order of the constituents in (38), (39) and (42):

(42)　a.　Juan　a menudo　come　manzanas.
　　　　　　John　often　　　eats　apples
　　　　　　'John often eats apples.'

　　　b.　Juan　a veces　　come　manzanas.
　　　　　　John　sometimes　eats　apples
　　　　　　'John often eats apples.'

(42) features finite verbs in their normal tense position. In that position, they may be preceded by frequency and duration adverbs. However, in the RI-cases, the infinitive must precede those adverbs. The conclusion is clear: in RIs, the infinitival raises even higher than the finite verb, into a position above T^0, which we will pin down to be F^0 in the next section. The subject of English RIs is outside VP, in a position we take to be SpecTP, while the Spanish subject may remain in situ (unless of a certain quantified nature), raise to SpecTP or topicalize to a position we identify as SpecFP

3.4　Infinitival raising

Kayne (1991) presents three arguments in favour of a high landing site for the infinitival verb in several Romance languages, among them Spanish. Firstly, Kayne's interpretation of the order infinitive-clitic, as we can observe in (43) below and many examples we have seen so far, is the following: this order can only mean that the infinitive has raised beyond T^0. Kayne's actual technical proposal (that the infinitive is adjoined to T') is incompatible with minimalist assumptions regarding phrase structure (Chomsky 1995 and much current work). We will therefore follow Uriagereka's reinterpretation of Kayne's facts as showing raising to a position that Uriagereka (1995a, 1995b) identifies with a projection immediately below C^0 and higher than I^0, that he calls F^0.[13]

Secondly, infinitival movement vs. absence thereof derives the different orders of Italian and Spanish, on the one hand, and French, on the other (see Kayne 1991 for a broader comparative perspective):

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[13]　Uriagereka (1995a) investigates the placement of clitics in Western Iberian dialects. He concludes that clitics are deficient in the interpretation of their phi-features, in particular the person-feature. Elements which are deictically deficient are raised to a clause-peripheral position, where they are anchored to the discourse or to a c-commanding argument if they are embedded. As such, "FP" can be seen as a projection that fixes the deictic interpretation of context-dependent expressions. Uriagereka (1995b) shows how a functional projection FP of this sort serves as a host to a range of context dependent elements, such as clitics, topics and foci (but see note 12).

(43) a. Hablarle   sería   un error.   (Spanish)
    talk-INF-CL would-be a mistake
    'Talking to him would be a mistake.'

   b. Parlargli   sarebbe   un errore.   (Italian)
    talk-INF-CL would-be a mistake
    'Talking to him would be a mistake.'

   c. Lui parler/*parler-lui   serait   une erreur.   (French)
    CL talk-inf/talk-INF-CL would-be a   mistake
    'Talking to him would be a mistake.'

On the assumption that F^0 is not "active" in French (in the sense suggested and supported in Uriagereka 1995a), there is no motivation for raising the infinitive. If the French infinitive moves, it moves to a lower position, presumably to a functional head in the Infl-layer.

Thirdly, the high position of the infinitive prevents PRO from being governed by the lexical complementizer in Spanish and Italian, but not in French:[14]

(44) a. Juan no sabe si ir   PRO al   cine.   (Spanish)
    John NEG knows if go-INF   to-the movies
    'John doesn't know whether to go to the movies.'

   b. Gianni non sa   se andare PRO al   cinema.   (Italian)
    John   NEG knows if go-INF   to-the movies
    'John doesn't know whether to go to the movies.'

   c. * John ne   sait   pas si PRO aller   au   cinema.   (French)
    John NEG know   NEG if   go-INF to-the movies
    'John doesn't know whether to go to the movies.'

If the position of the infinitive blocks government of PRO by the lexical complementizer, then the infinitive must c-command the pronominal, therefore it must be higher than PRO. The equivalent construction is ungrammatical in French and this points to a lower position of the infinitive.

Assuming Uriagereka's interpretation of Kayne's generalization, we conclude that the infinitive in Spanish raises to a position external to TP, that we will also call F: this is shown in (45). The subject may stay in situ, move to TP or raise even higher, and so may other topicalized elements (indicated by XP). English, (46), lacks this further projection:

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[14] We are aware that some alternative explanation is required for this phenomenon, and for Control generally. Kayne's intuition that the contrasts have to do with the position of the infinitive, however, still keeps its typological soundness and is the most relevant fact for the purposes of this paper, as the reader will see in section 5.

(45)   [$_{FP}$ (XP) [V-T]$_i$-F^0 [$_{TP}$ (subj) t$_i$ (…modal/aspectual adverbs…) [$_{VP}$ (subj) t$_{V\text{-}INF}$ …]]]

(46)   [$_{TP}$ subj$_i$ T^0 (…modal/aspectual adverbs…) [$_{VP}$ t$_i$ V-INF…]]

This conclusion is at least compatible with the facts concerning RIs. This difference between Spanish and English will be instrumental in deriving the different temporal properties of RIs in the Romance and Germanic area.

4   On the semantic characterization of Root Infinitives

Akmajian's intuition concerning these constructions with an overt infinitive was that they represented an hypothetical event. That is, in no construction of this sort is there a claim to truth or a claim to existence regarding the event involved. All the speaker does is raise a consideration towards that event, the assertoric force being conveyed by the next clause. This is what Akmajian (1984) and Grohmann (1999) call the "irrealis condition" on the interpretation of those constructions.
In the following, we want to further elaborate on that intuition, and work out a precise semantic representation of that condition. We want to claim that RIs are indefinite descriptions of events that function as restrictors of an exclamative operator (this section), whose main predicate will be shown to be the Coda (section 5).

4.1   Root Infinitives as indefinite descriptions

If we look at the part that is lexically realized in these constructions, we can note that it is formally identical to the bare infinitival complements of verbs of perception and causation:

(47)   a.   I saw him leave.
       b.   Him leave?!

Bare infinitives show the same absence of overt inflection and the same Case properties as RIs, and both constructions share a constraint on perfective aspect:

(48)   a. * I saw him have left.
       b. * Him have left?!

Higginbotham (1983) provides a semantic analysis of bare infinitives in which those constructions are indefinite descriptions of events. That is to say, (47a) may be expressed semantically along the lines of (49):

(49) $\exists(e)$ [leave(him,e)]$_i$ I saw t$_i$
      'For some event of him leaving, I saw it.'

Let us provide a similar analysis for the RI:

(50) $\exists(e)$ [leave(him,e)]

The absence of assertive force in RIs is thus parallel to the absence of assertive force in indefinites. Indefinites are, furthermore, unsaturated expressions (Higginbotham 1987). If the function of Comp is that of saturating an event variable (Hegarty 1992), therefore making a clause "definite", then the absence of such projections in RIs (see section 2.5) is an indication that the event variable is not saturated and that the whole clause is interpreted as "indefinite."

4.2   Root Infinitives in the exclamative context

A closer look at RIs reveals that this cannot be the whole story. Consider (51):

(51) John read a book?! I don't believe it!

What (51) conveys is something more than just an implicit negation of an event ("John's reading of a book"). What it says is that any event of that sort, given our knowledge of John's character, is out of the question as far as John is concerned. Observe that RIs are not easily followed by material expressing a punctual or occasional negation of the event:

(52) a.   Juan   leer   un libro?! *Yo   no   lo   vi!
           John   read-INF   a   book   I   NEG CL   saw
      b.   John read a book?! *I didn't see it!

What we have in (52) is an interpretation of the sort "any event of John reading a book (is impossible)." What contributes to the exhaustive interpretation of RIs?
      One possibility, as defended in Grohmann (1999, 2000c), Etxepare and Grohmann (2000), is that the exhaustive interpretation belongs to the modal domain. In other words, the claim would be that RIs have a hidden or "null" modal (cf. Boser et al. 1992 for a similar proposal for children's RIs).
      Such an approach, however, raises the following, serious problem from a syntactic point of view. At the modal dimension we are considering, which is that of circumstantial or root modality (cf. section 2.1, in particular the ungrammaticality of (7) with epistemic adverbs), Spanish only has lexical modal verbs. These lexical modals can overtly occur in RIs:

(53) a.   Juan   poder   leer   un libro?!
          John   can-INF   read-INF   a   book
          'John *can/be able to read a book?!'

    b.   Yo tener   que   leerme   eso?!
          I   have-INF   that   read-CL   that
          'Me *must/have to read that?!'

This means that when we don't have an explicit lexical modal (or a "null" modal), this null modal is the silent counterpart of the lexical one. We would then expect both cases to have the same interpretation. But this is not the case.

(54) a. * Juan   poder   leer   un libro   ayer?!
          John   can-INF   read-INF   a   book   yesterday
          *'John be able to read a book yesterday?!'

    b.   Juan   leer   un libro   ayer?!
          John   read-INF   a   book   yesterday
          *'John read a book yesterday?!'

(55) a. * Yo tener   que   leerme   eso   ayer?!
          I   have-INF   that   read-CL   that   yesterday
          *'Me have to read that yesterday?!'

    b.   Yo   leerme   eso   ayer?!
          I   read-CL   that   yesterday
          *'Me read that yesterday?!'

Arguably, RIs cannot be produced without some modal statement. But this modal statement is contributed not by the RI itself, but by the Coda (see section 5).

(56) a.   El Athletic ganar   la liga?!   Imposible/Probablemente/Quizás!
          the Athletic win   the league   impossible/probably/perhaps
    b.   Athletic win the league?! Impossible/Probably/Perhaps!

Observe that the indefinite description is itself under the scope of an exclamative operator, realized as the rising intonation associated with Root Infinitives. This operator licenses negative polarity items in the RI:

(57) a.   Yo comprar   nada?!   Tu   sueñas!
          I   buy-INF   anything   you   dream
    b.   Me buy anything?! You're dreaming!

If our hypothesis regarding the lexically realized portion of RI-constructions is correct, the additional exhaustive meaning must be provided by the exclamative mood. Portner and Zanuttini (2000) suggest that the meaning of exclamative mood can be compared to the meaning of the focus particle *even*. Consider, for instance, (58):

(58)   Yesterday, John bought a Toyota!

In uttering (58) with exclamative intonation, we not only assert that John bought a Toyota, but we imply that John's buying a Toyota is the less likely of the possible alternative actions that John could have entertained yesterday. The surprisal component of exclamatives implies the existence of other alternatives that are viewed as the normal or unsurprising cases and with regard to which (58) stands in contrast.[15] It is in this sense that exclamative mood can be interpreted as analogous to *even*.

As argued by Rooth (1985) and Krifka (1994), among others, an utterance of (59)…

(59)   Even John bought a new car.

(59') a.   …asserts that John bought a new car;
       b.   …implies that some other people did the same,
            and that given a set of possible buyers, John was the less likely to do so.

Even typically associates with the focus in the sentence, in (59) the intonationally marked *John*. Exclamatives are also focus sensitive: uttering (60) implies that a Toyota is less likely to be bought than any other car.

(60)   (Wow,) John bought A TOYOTA!

If exclamative mood is to be viewed as a function picking up the less likely of a set of given alternatives, and in that sense analogous to *even*, then we have found the additional meaning component involved in the exhaustive interpretation of RIs: this additional meaning component is contributed by the exclamative mood of RIs, realized as an exclamative operator. That is, an RI such as (61), uttered with exclamative intonation,

(61)   [Excl [John read a book]]

not only implies a set of alternative situations that contrast with John's reading of a book, but also that John's reading of the book is the least plausible alternative in that contrastive set. (We will revisit (61) in the next section, where we consider the role of the Coda and propose a more accurate structure representing the entire RI-construction.)

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[15]   It should be pointed out that the connection between exclamatives and surprisal is often marked grammatically. Palmer (1986: 80) cites data from Ngiyambaa where an exclamative can be interpreted as either surprise or ignorance (Donaldson 1980). Sadock and Zwicky (1985: 163) list other languages that employ special surprisal markers for exclamatives such as Chrau, Kapampangan or Menomini.

5   The relation between the RI and the Coda

5.1   Root Infinitives as restrictions

If the exclamative mood is to be considered as analogous to a focus-sensitive particle like *even*, and focus-sensitive particles like *even* and *only* give rise to tripartite structures in cases of focus, we can account for another intriguing property of RIs, namely the fact that they must have a Coda. Coda-less cases of RIs are felt to be incomplete sentences, instances where the speaker is, so to speak, speechless:

(62) a.   Juan leer   algo?!
            John read-INF   something
      b.   John read something?!

If I don't continue the sentence in (62) by providing a Coda, the impression is that the purported event is too unexpected for me to utter anything. A following silence is interpreted as showing that I don't know what to say. In fact, it is not different from the effect one gets by uttering a quantified expression with a restriction but without a nuclear scope or by uttering a bare conditional:

(63) a.   Every student…
      b.   If a student buys a book…

Rooth (1985) and Partee (1991) analyse focus particles such as *even* or *only* as quantifiers introducing a tripartite structure. This tripartite structure gets affected by the focus assignment of the sentence (the main manifestation of their focus-sensitivity). For instance, a sentence such as (64) is interpreted as presupposing that John bought something and as asserting that oranges are the only thing that John bought:

(64) John only bought ORANGES.

Partee (1991) suggests that the focus-presupposition structure of the sentence is directly encoded in the tripartite quantificational structure: the presupposition makes up the restriction of the quantifier (and therefore sets up the discourse frame for the assertion), whereas the focus of the sentence is mapped as the nuclear scope of the quantifier. We can represent this as in (65):

(65) $Only_x$ [$_{Restriction}$ John bought x] [$_{Nuclear\ Scope}$ x=oranges]

We propose that the relation between the RI and the Coda also reflects a tripartite structure, with the RI (an indefinite expression) making up the restriction of the exclamative mood (that we take to be analogous to *even*), and the Coda being mapped into the nuclear scope (the focus). A sentence such as (66a) is thus represented as here:

(66) a. John read that?! Impossible!
  b. Excl$_e$ [one(e) & read(John,that,e)] [Impossible(e)]
    'Even one event of John reading that is impossible.'

Further evidence for this proposal is provided by the fact that RIs can occur as topics in more complex constructions, such as "Double Comp" structures (see e.g. Plann 1982, Uriagereka 1988, Suñer 1991, 1993):

(67) Juan dice que él fregar   los platos que   ni por el forro.
  John says that he wash-INF the dishes   that   no way
  'John says: "Me wash the dishes?! No way!"'

The position in between the two complementizers is restricted to topics (see e.g. Uriagereka 1988). The second complementizer always introduces a sentence that has independent illocutionary force: in the above case, that force is exclamative.

5.2 Connectivity effects in NPI-licensing

Certain connectivity effects can only be understood if we assume that there is some sort of structural connection between the RI and the Coda. Here we will focus on the licensing of negative polarity items (NPIs).
  Consider the following contrast:

(68) a. Juan comprar algo/nada?!   Lo   dudo!
    John buy-INF something/anything   CL   doubt-I
    'John buy something/anything?! I doubt it!'

  b. Juan comprar algo/*nada?!   Será   a su primo!
    John buy-INF something/anything   will-be   to his cousin
    'John buy something/*anything?! It must be for his cousin!'

As is well known, modals typically license universal readings of NPIs. They are not downward entailing. Under the c-commanding presence of a modal, an *any*-phrase is interpreted as universal:

(69) I will do anything to get that job.

Spanish NPIs cannot express a universal reading (for which there is *cualquier*):

(70) Hare   cualquier cosa/*nada   por obtener ese empleo.
  do-will-I just anything/anything   for get-INF this job
  'I will do anything to get this job.'

Interestingly, the presence of an NPI in the RI is blocked if the Coda is not downward entailing, as in (68b). The sentence is good if we have the Spanish equivalent of a universal *any*:

(71) Juan comprar cualquier cosa?! Será   a su primo!
     John buy-INF just anything   will-be to his cousin
     'John buy just anything?! It must be for his cousin!'

The forced alternation of the existential and the universal counterparts of English *any* in Spanish requires the triggering presence of an operator. Given that NPI-licensing derives from certain structural relations, we now have additional evidence that the RI itself, the exclamative head and the Coda stand in close structural relation.

5.3   A structure for Root Infinitive-constructions

To sum up, we have seen evidence for an exclamative head that mediates between the RI and its Coda. Given the evidence for a tight structural relation between the three elements, we propose the following structure for complex RI-constructions, that is the Root Infinitive itself plus its concomitant Coda:

(72)   ExclP
          З
     [RI]   Excl'
                 З
         Excl^0 [Coda]

There are at least two reasons that suggest a structure such as that in (72). First, the selection relation between the exclamative head and the exclamation itself, which is the Coda (section 5.1), that we express configurationally as a head-complement relation. Second, (72) is the simplest structure that allows for connectivity effects, namely an X'-configuration. One would need more evidence for a more complex architecture.

What (72) does is connect the two constructs we have investigated in this paper, a root infinitival clause and its Coda, into a single X'-phrase. This allows us to establish the tight (and necessary) relation between the two. This connection is accomplished by an exclamative head, further deriving the exclamative character witnessed in RIs.

6   Deriving the syntactic differences

Recent Davidsonian theories of argument structure suggest that the argument structure of a predicate (whether a verb or a derived nominal) includes an event argument that must be

discharged in a higher projection (Higginbotham 1985, 1989, Zagona 1988, Hegarty 1992, Stowell 1996). In most of these views, it is Tense which discharges it, resulting in the interpretation of the sentence as an eventuality-denoting TP (Ormazabal 1995).

However, the presence or absence of Tense projections, and consequently the possibility of having or not having temporal modifiers seems to be subject to parametric variation. The issue is interesting from a learnability point of view, since the relevant parameter is not, in this case, related to any variance in overt inflectional morphology. Deictic temporal modification is possible in Spanish and impossible in English, but in both languages, RIs lack any morphologically realized functional projection for Tense:

(73) a. Yo ir   ayer?!   Tu   sueñas!
          I   go-INF yesterday you   dream
      b. * Me go yesterday?! You're dreaming!

We want to argue that our analysis of RI-constructions as tripartite quantificational structures, coupled with a syntactic parameter involving verb movement, accounts for the differences between English and Spanish.

6.1   The syntactic realization of indefiniteness

Baker and Travis (1997) note than in a language like Mohawk, the verbal particles that convey temporal distinctions are organized in a system that is akin to the determiner system of English. They distinguish three particles: *-wa* is a particle that conveys the temporal meaning of past as a default, but one can also find it in non-past environments, such as performative verbs in their present interpretation, or in interrogatives, in cases where the event seems to be somehow backgrounded. Baker and Travis convincingly show that the particle *-wa* says that an event of the type in question has definitely taken place in the real world. Mohawk makes use of this general morpheme to convey past also.

The particle that conveys the meaning of "future" (*v-*) is also shown to change its temporal contribution according to the context: it is shown to operate in the past under certain temporal topics (in a sentence type that they call "reminiscence texts"), and they also occur in conditionals, where no future meaning is intended.

As an example, consider the following two sentences from Mohawk, one conveying simple future (Baker and Travis 1997: 214) and the other one a conditional (Baker and Travis 1997: 220):[16]

(74) a. v-ha-rast-e'
          PTC-MSS-draw-PUNC
          'He will draw it.'

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[16]   Notation: PTC = particle, MSS = masculine singular (subject), PUNCT = punctual marker, 1SS = 1st person singular (subject), FSS = feminine singular (subject), 1SO = 1st person singular (object).

b. toka v-ke-nvsko-akaret,   v-yuk-hrewaht-e'
    if   *PTC-1SS-steal-PUNCT-cookie* *PTC-FSS/1SO-punish-PUNCT*
    ake-nistvha
    my-mother
    'If I steal a cookie, my mother will punish me.'
or 'If I steal a cookie, my mother punishes me.'
or 'If I stole a cookie, my mother punished (would punish) me.'

The conditional sentence in (74) receives different interpretations: it can be interpreted as a future prediction, but also as a timeless, law-like conditional that takes the present Tense in English. More strikingly, it can also receive a past interpretation if it is understood imperfectively. Verbs containing factual ("past") morphemes cannot be interpreted that way. They can only convey the meaning of an ad hoc, punctual relation of the sort of English (75):

(75) If Mary left, then John left too.

The contrast between *v-* and *-wa* has nothing to do with time, or sequencing of events, but rather depends on whether the sentence is a general statement about a certain kind of event or a statement about a particular event. Baker and Travis show that the same pattern is found in Mohawk equivalents of *when* and *whenever* clauses. They also show that the future is not exactly a modal either: sentences that are translated with *will*, *may*, or *must* in English all contain (obligatorily) the same "future" prefix *v-* (Baker and Travis 1997: 222-223). Thus, the "future" itself does not have any fixed modal force; rather the modal force of the clause is picked up from preverbal particles that convey the specific modal meanings.

Baker and Travis observe that this "chameleon-like" behavior of the future recalls the behavior of indefinite NPs in English: indefinite NPs and "future" verbs both pick up a generic meaning when they occur in a suitable generic context, whereas definite NPs and factual verbs refer to unique individuals or events in any context. Baker and Travis propose that the so-called future marker *v-* in Mohawk is actually an indefinite marker, the verbal equivalent of an indefinite article. Similarly, factual *-wa* is a definite marker, the verbal equivalent of a definite article.

We still have to find an explanation for why the default temporal value of *v-* is "future." Baker and Travis point out that there is typological evidence relating the future tense and indefinite, irrealis moods (Chung and Timberlake 1985). Kamp and Reyle (1993: 534) express the basic intuition as follows:

It is part of our conception of ourselves and of our role in the world in which we live that the future is "open" while the past is "closed." What the future will be like is to a significant degree undetermined, and we ourselves are among those who can help to shape it. As to the past, nothing we do can make any difference.

Under this conception, Baker and Travis observe, it is generally impossible to refer directly to a future event, simply because there is more than one future with respect to any given point in time. The closest one could come to would be to say that in each of the relevant futures associated to a point in time there is an event of a certain type. As Baker and Travis (1997: 261) argue, the logical form of (76) is thus (76'a) and not (76'b):

(76)   Mary will buy a basket.

(76') a.   In all worlds w such that w is a future of n(ow),
            there exists an event e such that e is a buying of a basket by Mary.
       b.   There is an event e such that e is a buying of a basket by Mary,
            and e is in all the worlds w which are futures of n.

Thus, (76) can be true in a situation in which Mary has determined to buy a basket, but depending on her travel plans, she might be in Montreal or Toronto tomorrow. (76'a) allows for this straightforwardly; (76'b) does not. Events have spatial locations, so if one event takes place in Montreal, then the same event cannot take place in Toronto.

Since talking about the future inherently involves quantification, it follows that one must use indefinite verbal expressions to speak about it.

6.2   Perfective and imperfective past

We saw that an RI-construction is best represented as a complex expression containing the RI and its Coda which is mediated by the exclamative operator in a tripartite structure of the sort one finds in unselective quantification (Lewis 1975). In fact, these cases are formally identical to Geach's *donkey*-sentences. In this case, the variable over which the exclamative operator quantifies is an event variable in a clausal indefinite expression.

Chierchia (1995) observes that unselective quantification over indefinites in donkey-structures is subject to a strict locality condition. In an informal way, this condition states that the scope of an indefinite is restricted to the first quantifier c-commanding it. To see the effect of this condition, consider the contrast in (77):

(77) a.   Usually, if a farmer$_i$ has a donkey$_j$, he$_i$ cherishes it$_j$.
      b. * Usually, if every farmer has a donkey$_j$, he$_i$ cherishes it$_j$.
      c. * Usually, if a farmer doesn't have a donkey$_i$, he$_i$ cherishes it$_j$.
      d. * Usually, if no farmer has a donkey$_i$, he$_i$ cherishes it$_j$.

The intuition that Chierchia's condition is built on is that somehow the quantifiers close off the domain of interpretation of the indefinites.

Going back to the verbal domain, consider the following contrast:

(78) a.   If back in the old days a farmer$_i$ had a donkey$_j$, he$_i$ cherished it$_j$.
      b. * If last year/yesterday a farmer$_i$ bought a donkey$_j$, he$_i$ gave it$_j$ fresh sprouts.

     The difference between (78a) and (78b) is that the former is an imperfective past and involves a quantification over events of a given type, whereas (78b) is a perfective past that involves quantification over a single, punctual event. Interestingly, the difference correlates with a difference in grammaticality.

     The conclusion, vis-à-vis the contrast in (78) and Chierchia's observation on the blocking effect of quantifiers and operators such as negation, is that in this case we also have some blocking effect. The blocking effect cannot be performed by the Tense head itself, since we have past in both cases. Rather, the distinction correlates to the opposition between perfective and imperfective forms, two aspectual categories.

     Observe that the difference between imperfective and perfective past in donkey-constructions is the same we find in Mohawk between the factual and the "future" verbal particles. Quantifying over events seems to be blocked in the presence of the factual verbal particle, that Baker and Travis (1997) — following their idea that there is an analogy between these verbal particles and the determiner system of other languages — call definite. But definite and specific determiners also block quantifier binding. Consider for instance the following contrasts with a relative clause and a conditional clause:
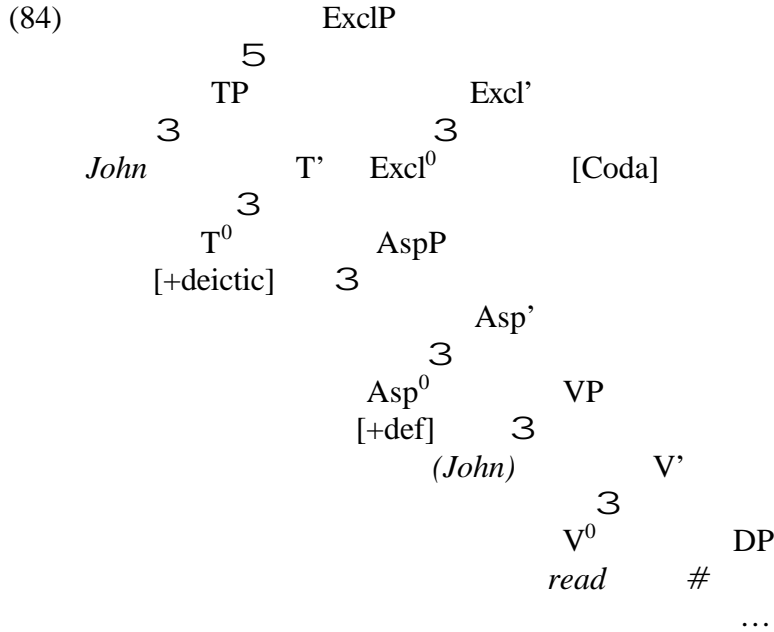
(79) a.   [Todo dios que ve [a un tipo que pinta un cuadro$_i$]] lo$_i$ compra.
      b. * [Todo dios que ve [al tipo que pinta un cuadro$_i$]] lo$_i$ compra.
      c. * [Todo dios que ve [a uno en particular que pinta un cuadro$_i$] lo$_i$ compra.

(80) a.   [Everyone who sees [a guy who is painting a picture$_i$]] buys it$_i$.
      b. * [Everyone who sees [the guy who is painting a picture$_i$]] buys it$_i$.
      c. * [Everyone who sees [a particular guy who is painting a picture$_i$]] buys it$_i$.

(81) a.   [Si un coleccionista ve [a uno que pinta un cuadro$_i$]] lo$_i$ compra.
      b. ??[Si un coleccionista ve [a uno en particular que pinta un cuadro$_i$], lo$_i$ compra.
      c. ??[Si un coleccionista ve [al tipo que pinta un cuadro$_i$]] lo$_i$ compra.

(82) a.   [If a collector sees [someone who is painting a picture$_i$]] he buys it$_i$.
      b. ??[If a collector sees [the guy who is painting a picture$_i$]] he buys it$_i$.
      c. ??[If a collector sees [a particular guy who is painting a picture$_i$]] he buys it$_i$.

     In both sets of examples coindexing the indefinite with the implicit quantifier is only possible if no definite or specific determiner is present.

     What (79)/(80) and (81)/(82) show can be straightforwardly applied also to the contrast between (78a) and (78b). The perfective past is associated with a specific or definite verbal marker, analogous to Mohawk *-wa*, whereas the imperfective past is associated with an indefinite verbal marker analogous to Mohawk *v-*, that does not block binding. Now we can turn back to the previous examples of temporal modification in RIs:

(83) a.   Back in the old days, John read things of that sort?! No way!
     b. * Yesterday, John read things of that sort?! No way!

The perfective past in (83b) is associated with a specific or definite verbal marker that precludes coindexing the event with the exclamative operator, as (84) illustrates (where TP represents the RI):

(84)   ExclP
                       5
                 TP   Excl'
             3   3
        John   T'   Excl⁰   [Coda]
                     3
             T⁰   AspP
          [+deictic]   3
                                   Asp'
                             3
                        Asp⁰   VP
                       [+def]   3
                             (John)   V'
                                            3
                                       V⁰   DP
                                      read   #
                                                       …

Assuming that the position of the infinitive establishes the structural or clausal position of the event variable, the intervening presence of a deictic tense that triggers the presence of a definite verbal marker (that we associate with the aspectual head) prevents coindexing of the event variable with the exclamative operator, and vacuous quantification ensues.

6.3   Verb movement and the temporal interpretation of RIs

Let us now turn back to the differences between English and Spanish.
      Recall that among the syntactic differences we found between Spanish and English is the fact that in Spanish the verb raises very high, whereas in English it remains in situ. A differentiated representation of (84) would be the following: (85a) for Spanish (which always features FP in RIs), and (85b) for English (which lacks FP in RIs).

(85) a.

```
                        ExclP
                    ┌────5────┐
                 FP            Excl'
              ┌──3──┐        ┌──3──┐
           V⁰+F⁰      TP   Excl⁰      [Coda]
```

b.

```
                  ExclP
              ┌───4───┐
            TP          Excl'
            @         ┌──3──┐
          …V…       Excl⁰      [Coda]
```

Let us assume that what bears the event variable in the clause structure is the verb. The relative position of the verb vis-à-vis Tense is important: a perfective Tense and its associated definite marker will only block coindexing with the event variable if the verb is under the scope of Tense. But we saw that in Spanish, the infinitive raises high, to some position outside of TP, and therefore outside the scope of the perfective Tense and the associated definiteness marker. Verb movement frees up the event variable for coindexing with the exclamative operator.

The prediction that arises from this proposal is that the availability of modification by deictic temporal adverbs should only be possible if the infinitive raises higher than Tense. For English, we saw that the prediction is borne out.[17]

---

[17] This is also the case in German (and presumably in the other Germanic languages as well), where the infinitive (given the absence of C) stays in situ or in a position below TP. French is another case in point, since, as shown by Kayne (1991), the infinitive does not raise beyond TP. In all those cases, modification by a deictic temporal adverb is impossible:

(i) a. * Ich   das Buch   gestern   lesen?!   (German)
         I   *the book*   *yesterday*   *read-INF*
         *'Me read the book yesterday?!'
    b. * Moi   lire   le livre   hier?!   (French)
         me   *read-INF*   *the book*   *yesterday*

In languages where the infinitive raises as high as in Spanish, we would expect to find that deictic temporal modifiers are available in RIs. Portuguese undoubtedly is such a language and the prediction turns out to be true (iia). How Italian fits in is not so clear yet: the grammaticality judgements for (iib) have yet to be confirmed. Interestingly, Sabel (1996) notes that in Italian only auxiliaries move that high; this would obviously predict (iib) to be out. A more careful collection of the data will reveal the exact range of our generalization, which we are currently investigating (Etxepare and Grohmann, in progress).

(ii) a.   Eu ir   a festa   ontem   (Brazilian Portuguese)
          I   *go-INF*   *to party*   *yesterday*
     b. (?)Io   andare   alla   festa   ieri   (Italian)
          I   *go-INF*   *to.the*   *party*   *yesterday*
          *'Me go to the party yesterday?!'
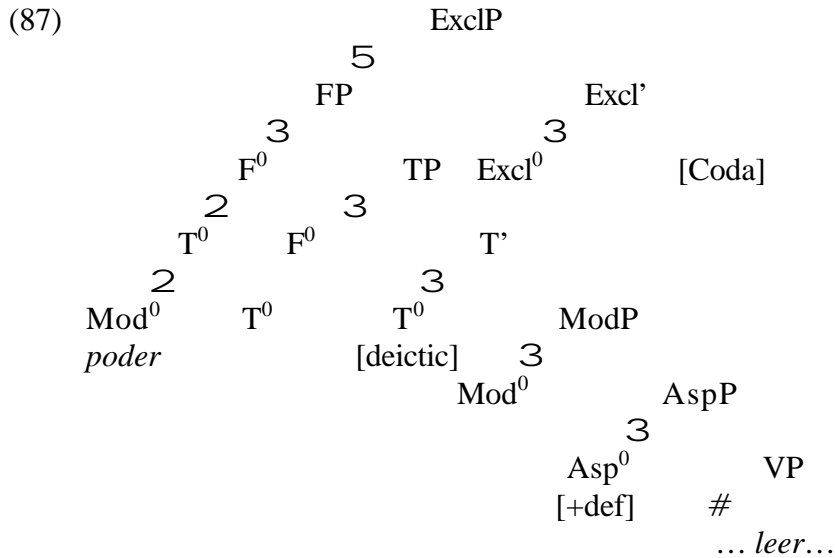
7 Further predictions

The proposal about the complex structures involved in RI-constructions allows for a number of predictions. We will address two, both of which we hinted at earlier.

7.1 Lexical modals and deictic adverbs

As we mentioned in section 4.2, RIs with a lexical modal do not allow deictic past adverbs. Take (86), repeated from (54):

(86) a. * Juan poder   leer   un libro ayer?!
         John   can-INF read-INF a   book yesterday
         'John be able to read a book yesterday?!'

    b.   Juan leer   un libro ayer?!
         John read-INF   a   book yesterday
         'John read a book yesterday?!'

The problem is obviously not in the lexical modal itself (which is compatible with deictic past adverbs otherwise), but rather in the RI-construction. Somehow, RIs with lexical modals in Spanish behave as English Root Infinitives concerning modification by deictic adverbs. We take (87) to be the structure of the ungrammatical (86a):

(87)

$$
\begin{array}{l}
\text{ExclP} \\
\quad\diagup\diagdown \\
\text{FP} \qquad\qquad \text{Excl'} \\
\diagup\diagdown \qquad\qquad \diagup\diagdown \\
\text{F}^0 \qquad \text{TP} \;\; \text{Excl}^0 \qquad \text{[Coda]} \\
\diagup\diagdown \quad \diagup\diagdown \\
\text{T}^0 \;\; \text{F}^0 \qquad \text{T'} \\
\diagup\diagdown \qquad \diagup\diagdown \\
\text{Mod}^0 \;\; \text{T}^0 \quad\; \text{T}^0 \quad \text{ModP} \\
\textit{poder} \qquad \text{[deictic]} \;\diagdown \\
\qquad\qquad\qquad \text{Mod}^0 \qquad \text{AspP} \\
\qquad\qquad\qquad\qquad \diagup\diagdown \\
\qquad\qquad\qquad \text{Asp}^0 \qquad \text{VP} \\
\qquad\qquad\qquad \text{[+def]} \qquad \# \\
\qquad\qquad\qquad\qquad\qquad \textit{… leer…}
\end{array}
$$

The fact has a straightforward account in our system: in a complex structure such as (87) it is the lexical modal which raises outside the domain of the deictic Tense. The lexical infinitival verb remains in situ, and therefore the event variable it carries cannot be

linked to the exclamative operator due to the intervention effect of the Tense-Aspect domain.

7.2   The (Non-)Perfectivity Constraint revisited

As noted in section 2.2, past perfect forms are not available in RIs. Consider (14), repeated here as (88):

(88) a. * Helmut   haber   ganado   las elecciones en 1994?!
          Helmut   have-INF   won   the elections   in 1994
      b. * Helmut have won the elections in 1994?!

The reason is now obvious: past perfect forms are perfective, and therefore they are subject to the same intervention effect as the one induced by deictic adverbs. In both English (Pollock 1989) and Spanish (Kayne 1991), the infinitival auxiliary raises, leaving the participle in a TP- or AspP-internal position. In that position, the event variable cannot be linked to the exclamative operator

8   Conclusion

In this paper we proposed that RIs are indefinite descriptions of events that exhibit a deficiency in their functional structure. RI-constructions crucially involve two related terms, the RI itself and the Coda, where the relating predicate is an exclamative operator with scalar properties akin to the focus particle *even*. We have shown that the RI, the exclamative operator and the Coda form a tripartite structure both syntactically and semantically, in the sense of other standard analyses of quantificational constructions. We show that there are differences in temporal interpretation of RIs that we derive from the existence of the tripartite structure mentioned and the (un)availability of infinitival verb movement.

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