# Definiteness Effects:

## *Bilingual, Typological and Diachronic Variation*

Edited by

## Susann Fischer, Tanja Kupisch and Esther Rinke

Cambridge
Scholars
Publishing

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This book first published 2016

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

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# DEFINITENESS EFFECT AND UNACCUSATIVE SUBJECTS: AN OVERVIEW AND SOME NEW THOUGHTS[*]

## ADRIANA BELLETTI & VALENTINA BIANCHI

## 1. Introductory overview

Milsark (1974, 1977) in his seminal work singled out a property which typically affects the post-verbal noun phrase of existential clauses in English *there* sentences like (1a): this noun phrase must be indefinite. He also noted that, in this language, the same property affects the post-verbal noun phrase of certain verb types (e.g. appearance verbs.) as in (1b), also possible in *there* sentences, although at a peculiar stylistic level in this case (e.g. fairy-tales etc.):

(1)  a There is a man/*the man in the garden
  b There arose a storm / *the storm here.

Before the unaccusative hypothesis made its way in the forefront of the theoretical debate in formal syntax (Perlmutter 1978, Burzio 1986), Milsark called these verbs the "inside verbals", thus anticipating the fundamental insight of the unaccusative hypothesis according to which the nominal argument of an unaccusative verb, which can appear in the post-verbal position of *there* sentences and which in SV declaratives is the preverbal subject of the clause, is in fact its internal argument and never is nor was an external argument  (following Williams' 1981 influential terminology, widely adopted ever since). This property came to be known as the *definiteness effect* (DE). Much work has been devoted to *there* sentences and to the DE more generally in the eighties and later, also adding a crosslinguistic dimension by introducing descriptions in the same domain of languages different from English (Safir 1982, Stowell 1981, Williams 1984, Belletti 1988, Lasnik 1992, 1999, more recently Deal 2009, Fisher this volume and references cited therein; Mc Nally 2011 for a review in the semantics literature on existential sentences; see also further references cited throughout, although no list can do justice to such a long lasting debate).

DE characteristically emerges in structures featuring an expletive and a post-verbal subject in either existential sentences like (1)a or in sentences with an unaccusative verb as in (1)b; similarly, the effect shows up in (2)a and in (2)b in French and  in sentences with a transitive verb in the passive voice as in (2)c, again illustrating with French. In all cases, only an indefinite noun phrase can occupy the postverbal position.

(2)  a. Il    y    a    trois filles    ici.
       EXPL   there  have.3SG  three girls       here
        "There are three girls here."
  b. Il    est arrivé        trois filles/   * les filles.
       EXPL   is arrived.MSG       three girls/    the girls
         "There arrived three /*the girls."
  c.  Il    a été tué        un homme/   * l'homme.
       EXPL   has been killed.MSG   a man  /     the man
    "There was killed a man/*the man."

This type of sentences open up the issue of the licensing of the potverbal noun phrase; since this noun phrase corresponds to the preverbal subject of SV declaratives containing the same verb, it is often referred to as a postverbal subject. Within Government and Binding, one main issue was to account for the licensing of the postverbal subject w.r.t. Case. The proposed solution was to link the expletive and the associate noun phrase by means of a representational chain, whereby the expletive received Nominative Case in the preverbal subject position/Spec,IP and transmitted it to the associate; by hypothesis, only indefinite noun phrases could enter such a representational chain without violating any constraint, most notably the Binding Condition C (see Safir 1982: 172 ff., 239 ff.; Safir 1987; Rizzi 1982). Moreover, by means of this chain the features of the associate NP could be transmitted to I°, thus accounting for verb agreement in English (visible in e.g. 6b). Later on Chomsky (1995 and references cited there)

proposed instead a derivational relation, whereby the associate NP moves at LF and replaces the uninterpretable expletive in Spec,IP; this movement is triggered by the principle of Full Interpretation, whereby at the interface with semantics, the LF structure cannot contain any uninterpretable elements.

At that stage of research, it was also assumed that null subject languages like Italian do not manifest the DE, rather, they display generalized "free" subject inversion, as exemplified in (3). It was assumed that in these languages, Spec,IP is filled by a phonologically null expletive *pro*; lack of DE was attributed to the hypothesis that Nominative Case could be directly assigned to the subject in its postverbal position (under government) in this type of language:

(3)  *pro*  è        arrivata         la ragazza.                      (Italian)
          is       arrived.F.SG     the girl

Belletti (1988) departed from this line of analysis in both respects. On the empirical side, she argued that even in a null subject language like Italian, the DE does arise when the postverbal subject fills the thematic internal argument position, rather than being in a 'peripheral', position external to the verb phrase (VP-adjoined, as in "outside verbals" in Milsark's 1974 terms; Deal 2009 for recent rediscussion along these lines). In (4), for instance, the postverbal subject precedes a PP complement with no intonational break between the two, hence it cannot be external to the verb phrase, right adjoined to VP: in this configuration, the DE can actually be detected.[1]

(4)  a. All'improvviso      è entrato           un uomo /* l'uomo      dalla finestra.
            suddenly           is entered          a man / *the man       from-the window
      b. E' stato messo      un libro / * il libro    sul tavolo.
            be.3SG been put    a book / the book      on-the table

(Belletti 1988: 9, (17a-b), (18a-b))

This in fact naturally leads to the claim that there is no such thing as a generalized process of "free" subject inversion, but that postverbal subjects come in different types and are of different nature also in a null subject language like Italian, a view later developed in further detail in the frame of the cartographic approach (Belletti 2004 and paragraph 5 below). Hence, the fact that in a language like Italian a postverbal subject is also possible with transitive and intransitive verbs as well as with unaccusatives independently of its definite (as in e.g. 3) or indefinite nature should be kept distinct from the phenomenon illustrated by the indefinite postverbal subjects of sentences like those in (4), which pattern with the English and French examples in (1) and (2).

On the theoretical side, Belletti's proposal completely dissociated the licensing of unaccusative subjects obeying the DE from the licensing via Nominative Case. In particular, she argued that the indefinite subject in (1), (2) and (4) does not inherit Nominative Case from the expletive in Spec,IP, due to the presence of the VP barrier and, more generally, to the assumed lack of Case transmission processes altogether; rather, the indefinite subject is directly Case-licensed by the unaccusative verb (a view later shared in Lasnik 1992, 1999). The latter assigns Partitive Case – an inherent-type Case associated with the internal argument position and which, because of its semantic import, is only compatible with indefinite noun phrases. According to Belletti's (1988: 3) proposal, Partitive Case is not a Case lexically associated with a specific Th-role; rather it is associated with a structural position, the internal argument position to which the verb assigns a Th-role in connection with the first Merge operation. The fact that assignment of Partitive Case is contingent on assignment of a Th-role by the head V makes this Case more akin to an inherent Case than to a structural Case, assuming the bipartite distinction inherent vs structural Case operating in Government & Binding. However, as is discussed in Belletti (1988) and will be further addressed in the following discussion (section 4.1.), assignment of Partitive Case crucially involves the structural property of concerning the internal argument position.[2]
On the other hand, Nominative Case assignment (under government) is still invoked for postverbal subjects which are external to the verb phrase, hence in a different position than the internal argument position; no DE is manifested in theses cases, which are possible with all verb classes, transitive, intransitives and also unaccusatives; the example in (3) illustrates the point with an unaccusative verb. Thus, this analysis sharply distinguishes *VP-internal* from *vP/VP-peripheral* "inverted/post-verbal subjects"[3].

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[1] If an intonational break precedes the PP, a different structural analysis is possible, whereby the postverbal subject is peripheral to the verb phrase and the following PP is right-dislocated. On this type of option for postverbal subjects, see the discussion in §5 below.

[2] The fact that inherent Case is often typically associated with a particular Th-role does not imply that it always is/must be (Belletti 1988, section 2); the term lexical Case is sometimes used to refer to an inherent Case which is associated with a particular Th-role; sometimes Partitive Case can have this status as well, as mentioned in Belletti (1998: footnote 6). For critical views on the inherent nature of Partitive Case see Vainikka & Maling (1996).

[3] The label vP incorporates the by now familiar notation inspired by the minimalist tradition according to which transitive and intransitive verbs are inserted in a vP shell containing further functional verbal elements as light verbs ("small v") introducing the external argument and, possibly, other arguments of the verbal root. Unaccusatives are instead typically inserted in a VP, with no further small v (or anyway a somewhat reduced vP-shell; see the proposal on the existential verb phrase put forth in section 2.3). Section 4 and footnote 32 below for more.

In hindsight, Belletti's proposal about the special licensing of VP-internal unaccusative subjects can be connected to a more general observation due to Diesing (1989, 1992). Noun phrases have different semantic properties according to whether they are interpreted inside or outside the verb phrase: indefinites, on their weak non-presuppositional interpretation (see section 2), appear inside VP, whereas presuppositional indefinites, as well as definite and strong noun phrases, seem to be licensed and interpreted in a position external the verb phrase (see de Hoop 1992, Ladusaw 1994, Diesing & Jelinek 1995 for further developments of this idea). This body of research has left us with an important insight that is worth rethinking in the light of current theoretical assumptions, also more closely considering the interface between syntax and semantics:

(5) VP-internal unaccusative subjects (henceforth: *i-subjects*, for *internal* subjects) involve a special licensing route which necessarily correlates with the DE.

In this article we reconsider the status of i-subjects and we propose a principled account of the DE that singles them out from other instances of postverbal subjects in inversion structures. In a nutshell: building on Belletti's (1988) original insight, we propose in current terms that i-subjects cannot be licensed via the usual Case/Agree route involving a phi-complete probe, i.e. T (for nominative) as in the minimalist reformulation of 'structural Case'. We argue that, because of this licensing defectiveness, they cannot be interpreted as saturating arguments; rather, they must be interpreted at the interface as denoting a property; this crucially yields DE. The internal argument of unaccusatives corresponds to a defective nominal projection (NumP) and is syntactically licensed via Agree with a defective φ-probe lower than T containing number and gender features, but lacking the feature person. We locate the defective probe immediately above the projection of the lexical verb; the weak indefinite (NumP) is thus associated with Partitive Case through the Agree relation with the defective probe. This licensing route is typically unavailable for the external argument of (active) transitive and intransitive verbs. We assume that the defective nominal projection must be interpreted at the interface as denoting a property, and that it undergoes a form of 'semantic incorporation' (for which we will assume the implementation proposed by Chung & Ladusaw 2004). In this study we will also briefly reconsider some crucial features of existential sentences in which the DE is typically manifested in a standard way and reduce the fundamental aspects of this instance of DE to the type of computation that we assume to be generally at play with unaccusative verbs; we assume that the existential verb is indeed an unaccusative verb (as already first proposed in Burzio 1986, Stowell 1981 and then Moro 1997), with its own internal argument (following Williams' 1984 original insight, in the terms already sketched out in Belletti 1988: footnote 5).

The article is organized as follows. In §2, after introducing the distinction weak vs strong noun phrase, we give a more precise characterization of the DE: on the one hand, we show that i-subjects are not simply required to be indefinite, but more precisely *weak (non-presuppositional) indefinites*, as they are unable to take wide scope w.r.t. negation (§2.1); on the other hand, building on Vangsnes (2002), we distinguish the radical DE of i-subjects from a less tight restriction on definiteness that affects other types of postverbal subjects as in the so called Transitive Expletive Construction (TEC) (§2.2). In §2.3 we discuss existential sentences, and propose that the post-copular noun phrase is selected by the unaccusative existential verb (*be*). This discussion leads us to conclude that non-presuppositional indefiniteness is only required for internal arguments of unaccusative and passive verbs when they are licensed *in situ*, i.e. as i-subjects.

In §3 we show that the cluster of properties characterizing i-subjects is shared by an apparently unrelated type of noun phrase, namely Maori *he*-indefinites as described in Chung & Ladusaw (2004, chapter 2): these too (a) are non-presuppositional, (b) necessarily take narrow scope w.r.t. negation, and (c) are restricted to the internal argument position. In section 4 we propose that this cluster of properties is a consequence of their syntactic licensing (§4.1); this licensing triggers, at the interface, the application of the compositional rule of Predicate Restriction (§4.2).

In §5 we turn to the peripheral post-verbal subjects of Italian (exemplified in (3) above), which are exempt from the DE: we adopt and extend the analysis proposed in Belletti (2004), according to which these subjects are licensed in a Focus position in the periphery of vP/VP. In §5.1 we show that the double licensing route for postverbal subjects in Italian (VP-internal vs. vP/VP-peripheral) can nicely account for some recent findings from L1 and L2 acquisition, which lend original new support to the unaccusative hypothesis through the manifestation of DE, which we view as a core property of unaccusatives. Finally, in §6 we offer a summary and some concluding remarks.

## 2. **A closer look at the definiteness effect**

The type of contrast exemplified in (1) above only involve indefinite vs. definite noun phrases; but the DE actually distinguishes two larger classes of noun phrases, which Milsark (1974) dubbed weak and strong, respectively:

(6)     a. There is a hole in my blanket.
         b. There are {three/some/many/no/a lot of} holes in my blanket.          (weak noun phrases)

(7)     a. * There is {every / each / neither} hole in my blanket.          (strong noun phrases)

b. * There are {most / both / all} holes in my blanket.

Following Milsark's insights, the weak/strong opposition has been characterized in semantic terms. According to the relational view of quantification (Barwise & Cooper 1981, Keenan 1987), a quantificational determiner expresses a relation between the set of entities denoted by the noun it introduces – dubbed the restriction of the quantifier (R) – and the set denoted by the predicate, dubbed its nuclear scope (S). In (8), for instance, a relation is expressed between the set of snakes and the set of dangerous things:[4]

(8) {Every / some / no} snake is dangerous.

The determiner *every* expresses the subset relation: every entity that falls in the set of snakes also belongs in the set of dangerous things (though not necessarily vice versa); *some* expresses the relation of overlapping: the two sets have one or more element in common; finally, *no* expresses the relation of disjointness: the two sets have no element in common (i.e., nothing which belongs to the set of snakes also belongs to the set of dangerous things).

In intuitive terms, the common feature of weak noun phrases is that the relation they express only makes reference to the intersection between the restriction set and the set denoted by the nuclear scope, but it does not require any presupposed knowledge about (the cardinality of) the restriction set. To exemplify, the truth conditions of *Two snakes are dangerous* require that the set of snakes has two members in common with the set of dangerous things: this can be verified independently of the actual cardinality of the (relevant) set of snakes (Reinhart 1987). By contrast, the truth conditions of *Most snakes are dangerous* cannot be verified independently of the cardinality of the restriction set: the sentence is true if and only if the set of dangerous snakes covers a large proportion of the set of snakes. The strong determiners of (7) are *inherently presuppositional* in that they can only be used felicitously when the restriction set is presupposed to be non-empty (for an accessible discussion of presuppositionality, see Heim & Kratzer 1998: 162 ff.). Since the quantificational relations expressed by these determiners are essentially based on intersection, they are also known as intersective determiners. Empirically, weak determiners can be distinguished by the fact that they satisfy the following linguistic test (existentiality, Keenan 1987): a sentence of the form (9a) is true in exactly the same circumstancess (9b).[5]

(9) a. Det R is/are S
    b. Det R which is/are S exist(s).

To illustrate, consider (10):

(10) a. No snakes are dangerous.
     b. No dangerous snakes exist.

(10a) and (10b) are intuitively equivalent– i.e. they are true in exactly the same circumstances, and false in exactly the same circumstances:[6] hence, *no* qualifies as an existential determiner. The reader can easily verify that all the weak determiners exemplified in (6) (*a, three, some, many*) pass the test in (9).

By contrast, consider the application of the test to the determiner *every*:

(11) a. Every snake is dangerous.
     b. Every dangerous snake exists.

Suppose that there are 80 snakes, 45 of which are dangerous. In this case, sentence (11a) is false but sentence (11b) is true. Therefore, the two sentences are not equivalent: the determiner *every* does not pass the test for existentiality. The same holds for the other strong determiners listed in (7).

The distinction between strong and weak noun phrases must be further refined because, as already noted by Milsark, the existential determiners listed in (6) also allow for a 'proportional' reading, in which the restriction set is already familiar in the discourse context. This reading emerges unambiguously when these determiners introduce a partitive *of*-PP embedding a definite description, as in (12).

(12)    Two of the snakes are dangerous.

---

[4] Note that a count common noun denotes a set of entities even in the singular: a noun like *snake* does not denote a single entity of a certain type, but the set of all entities which, intuitively, can be described as 'snakes'. We are simplifying considerably for expository purposes; Certain quantifiers involve a plural noun, but we skip over the interpretation of plurality for reasons of space.

[5] This test is based on the property of existentiality (Keenan 1987): informally, quantificational determiner is existential if and only if the relation expressed between the two sets R and S holds in exactly the same circumstances in which the same relation holds between the intersection of R and S and the set of entities that constitutes the universe of discourse.

[6] More explicitly: recall that *no* expresses the relation of set disjointness; the truth conditions of (11a) require that the set of snakes and that of dangerous things have no elements is common. This holds precisely in those circumstances in which the universe of discourse has no element in common with the set of dangerous snakes, which means that the set of dangerous snakes is empty.

Diesing (1992) traced the difference to the fact that in this use, the restriction set is presupposed to be non-empty, and therefore labeled these noun phrases *presuppositional indefinites*. She also pointed out that even weak NPs that are not overtly partitive (e.g. *two snakes*) allow for a presuppositional interpretation in certain contexts. Enç (1991) characterized this reading of weak NPs as specific, arguing that the restriction set is not simply presupposed to be non-empty, but it is familiar, i.e. already introduced in the previous discourse context. We agree that in most actual contexts of utterance the restriction set will be familiar in Enç's sense, or incorporate a contextually supplied covert domain restriction (in the sense of von Fintel 1994); however, both of these properties imply that the restriction set is non-empty, and therefore, Diesing's presupposition is sufficient for our current purposes in order to distinguish the two relevant classes of noun phrases.

Diesing (1992) – building on Kamp (1981), Heim (1982), Higginbotham (1987) – argued that noun phrases introduced by a weak determiner are interpreted as quantifiers only when they have a presuppositional interpretation; in contrast, when they are non-presuppositional – as in the examples in (6) – they are not inherently quantified, but they undergo existential closure.[7] As illustrated by the contrasts in (6) and (7) DE is sensitive to the nature of the indefinite noun phrase, which must be a weak indefinite.

## 2.1. *The narrowest scope constraint*

In this section, we refine the semantic characterization of i-subjects by also considering their scopal interactions.

The literature on indefinites and on their unexpected scope properties is too rich to be summarized here (see, a.o., Abusch 1994, Kratzer 1998, Reinhart 1997, Schwarzschild 2002, Winter 1997). What is immediately relevant for our current purposes is the observation that i-subjects, contrary to weak noun phrases in preverbal subject position, obligatorily take narrowest scope with respect to other clause-mate operators, e.g. a modal or negation:[8]

(13)   a. Potrebbe    entrare un uomo  dalla finestra.          (* ∃>might)
          might   enter    a man              from-the window
        'It might be the case that a man (whatsoever) enters from the window'
       b. Un uomo        potrebbe          entrare   dalla finestra.     (√ ∃>might)
          a man    might               enter    from-the window
        'A  man might enter from the window'

(14)   a. ? Non   sono stati messi dei libri         sul tavolo.          (*some>not)
           not    have been put    some books on-the table
         'It is not the case that any books were put on the table.'
        b. Dei libri          non      sono stati messi  sul tavolo.       (some >not)
           some books         not      have been put     on-the table
         'Some books were not put on the table.'

In (13a), the indefinite noun phrase *un uomo* can only be interpreted in the scope of the modal *potrebbe*: the speaker does not presuppose the existence of a specific man, but merely asserts that some man or other could enter through the window. By contrast, in (13b) the unmarked interpretation is that a specific man is such that he could enter from the window.[9] Similarly, (14a) can be paraphrased as 'it is not the case that any books were put on the table', whereas in (14b), there is a familiar (non-empty)  set of books, some of which were not put on the table.

A parallel difference emerges in French:

(15)   a. Il      pourrait        éclater        un scandale        demain.      (* ∃>might)
          it       might        break-out     a scandal            tomorrow
        'It might be the case that some scandal or other breaks out tomorrow.'
       b. Un scandale            pourrait        éclater         demain.       (√ ∃>might)
          a scandal              might        break-out        tomorrow
        'A (certain) scandal might break out tomorrow.'

(16) a. Il      n'est        pas     arrivé     trois filles.          (* 3 > not)
         EXPL    NEG-is        NEG     arrived     three girls
       'It is not the case that there arrived three girls.'
      b. Trois filles  ne sont  pas     arrivées.                    (3 > not)
         three girls   NEG-are NEG     arrived.FPL
       'Three girls didn't arrive.'

---

[7] See also Ladusaw (1994) for elaboration of Diesing's proposal. The mechanism of existential closure in further discussed in §4.2.

[8] The scope judgements hold when the sentences are realized with no intonational break; see note 1 above.

[9] A non-specific interpretation akin to that of (13a) is marginally possible if the preverbal subject is under focus. Another possible interpretation, irrelevant here, is a generic interpretation of the weak preverbal subject; we refer to Diesing (1992) and Kratzer (1995) for discussion.

(15b), but not (15a), is about a specific scandal which might break out tomorrow; (15a) merely reports the possibility that some scandal or other breaks out. (16b), contrary to (16a), is about three members of a set of girls whose existence is presupposed in the context; compare also the parallel data from English:[10]

(17) a. There might break out some scandal tomorrow.        (* ∃> might)
     b. Some  scandal might break out tomorrow.       (√ ∃>might)
(18)   a. There hadn't arrived many cars.          (* many > not)
      b. Many cars hadn't arrived.           (many > not)

Thus, the generalization seems to be that i-subjects constrained by the DE cannot take scope over a higher operator (such as negation or a modal).

Furthermore, note that indefinites are in general able to exceptionally take wide scope out of scope islands, like  e.g. an *if*-clause. To exemplify, the sentences in (19) can be taken to mean that there exists one (specific) relative of mine such that, if s/he died, I would inherit a fortune:

(19)  a. If a relative of mine died, I would inherit a fortune.
     b. Se un mio parente morisse, erediterei una fortuna.

By contrast, the wide scope interpretation is unavailable for an i-subject, as shown in (20): these examples can only be taken to mean that, by some awkward rule, I would inherit a fortune in case a relative of mine whatsoever died (independently of whether I actually have any living relatives):

(20)  a. If there died a relative of mine, I would inherit a fortune.
     b. Se morisse un mio parente in un incidente, erediterei una fortuna.

This scopal evidence shows that the DE affecting i-subjects must be strengthened to (21):

(21) I-subjects are scopeless weak noun phrases[11].


## 2.2. *The constraint on definiteness of TEC subjects*


Up to now, we have been assuming that the DE only concerns i-subjects of unaccusatives (and passives), as it is (mainly) the case in languages like English and French (on existentials, see section 2.3):[12]

(22) a. * There talked to John a man. / * There talked a man to John.
     b. * Il a parlé à Pierre trois filles. / * Il a parlé trois filles à Pierre.
                         (Belletti 1988: 4, (6b); 5, (8b))

However, as is well known Icelandic, West Flemish and German allow for the so called Transitive Expletive Construction (TEC), involving an expletive and a transitive verbs (see, a.o., Belletti 1988: 12-15; Bobalijk & Jonas 1996; Chomsky 1995: 342-348; 272-276); it is generally assumed that the external argument of the TEC is also subject to the DE:

(23) a. Es hat     ein Mann/*?der Mann    die Marie        geküsst.

---

[10] *There* sentences in contemporary English are really productive in the existential construction (on which see section 2.3); with unaccusative verbs they are often felt to be a bit archaic and to belong to a high, somewhat literary style. Interestingly, however, speakers clearly detect contrasts and have judgements on them, as in the examples that we report here in (1b), (17a), (18a) and (20)a.

[11] The relationship between scopelessness, non-presuppositionality, and a 'thetic' interpretation of the sentences is discussed in detail in Ladusaw (1994); we do not dwell of this point here for reasons of space, but we merely note that Ladusaw's proposal is consistent with the semantic analysis of i-subjects that we develop in §4.2 below.

[12] In Italian, subject inversion with other verb classes is allowed, but it involves licensing in a vP-peripheral position; see  section 5 for more discussion.

It is sometimes noted in the literature that the *il* construction may not be totally excluded with some intransitive/unergative verbs (e.g. Legendre & Sorace 2003). These structures may be amenable to the account hinted at in Belletti (1988) for similar cases in West Flemish, discussed in Haegeman (1986). Essentially, the proposal there was in terms of a possible extension to a higher argument of a VP-internal Case assignment such as partitive, as nominative is taken by the expletive *er* in preverbal subject position in these sentences, which is analyzed as a subject clitic by Haegeman (1986); note that also *il* in French has the status of a subject clitic. Alternatively, see also the discussion below on the slightly different type of constraint on definiteness found in so called TEC environments. It is not unconceivable that the French *il* construction with intransitives/unergatives gives rise to a different type of constraint on definiteness along the lines in (27) in the text from Icelandic. This is a rather subtle question, which we leave open here, generally focusing our attention on the core cases of DE with unaccusatives (and existentials).

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| EXPL has | a man/the. NOM man | | the.ACC Marie | kissed | |
| b. Es hat | ein Mann/*?der Mann | | dem Paul | die Blumen | gegeben. |
| EXPL has | a man / the.NOM man | | the.DAT Paul | the flowers | given |

(German; Belletti 1988: 14, (30b-c))

(24) a. * Í gær       kláruðu       sennilega       þessar mys       ostinn.
          Yesterday   finished       probably         these mice        the.cheese

b.   Í gær         klaruðu       sennilega       margar mys       ostinn.
      yesterday    finished       probably         many mice         the.cheese

(Icelandic; Bobalijk & Jonas 1996: 196, (3a-b))

These contrasts seem to undermine our starting hypothesis (5), according to which the special licensing property which correlates with the DE is restricted to internal arguments sitting in their thematic, first Merge position.[13] As a matter of fact, the TEC subject is an external argument; as argued by Bobalijk & Jonas (1996), it even occupies a position external to the verbal projection (vP), since it necessarily precedes negation and a shifted direct object (25), as well as the low adverb *completely* (26):

(25) a. það       borðuðu       margir strákar$_i$   *bjúgun$_j$*   *ekki*   t$_i$   (öll)   t$_j$ .
          EXPL     ate             many boys            the.sausages   not       (all)
      'Many boys didn't eat (all of) the sausages.'

b.* það       borðuðu       bjúgun$_j$       ekki       margir strákar (öll) t$_j$.
      EXPL     ate             the.sausages   not         many boys     (all)

(26) a. það       luku       sennilega       einhverjir stúdentar       *alveg*       verkefninu.
          EXPL     finished   probably         some students               completely   the assignment
      b. * það     luku       sennilega       *alveg*       einhverjir stúdentar   verkefninu.
          there     finished   probably         completely   some students           the assignment

(Icelandic; Bobalijk & Jonas 1996: 212-214, (21), (23))

However, it can be shown that the 'definiteness effect' emerging on the subject external to the verb phrase in the TEC is actually weaker than the one emerging with unaccusative i-subjects. First, the translation of example (25a) clearly shows that the transitive subject is interpreted outside the scope of negation, contrary to what we observed in the case of unaccusative i-subjects (see §2.1). Second, while the definiteness restriction (21) excludes all presuppositional noun phrases, Vangsnes (2002) pointed out that in Icelandic, the TEC structure only excludes definite subjects, but allows for other strong/presuppositional noun phrases, like partitives embedding a definite description (cf. (12) above) or universal quantifiers:

(27)a. það       hefur       köttur/*kötturinn /*Kalli       étið       mýsnar.
          EXPL     has         cat / cat.the / Kalli             eaten     mice.the

b. það       hefur       *þessi köttur/*köttur Péturs       étið       mýsnar.
    EXPL     has         this cat /cat Peter's                   eaten     mice.the

c. það       hefur       sérhver köttur /einn af köttunum       étið       mýs.
    EXPL     has         each cat /one of cats.the                     eaten     mice

d. það       hafa       allir kettirnir /báðir kettirnir       étið       mýs.
    EXPL     have       all cats.the /both cats.the             eaten     mice

e. það       hafa       nokkrir kettir/sumir kettir       étið       mýs.
    EXPL have   some   cats /some.of.the cats               eaten     mice

(Icelandic; Vangsnes 2002, (12))

Interestingly, Vangsnes (2002, (7)) showed that also in Icelandic, expletive structures with a low, VP-internal i-subjects obey the radical definiteness restriction and exclude all presuppositional noun phrases:

(28) a. það       hafa verið       nokkrir kettir/       * sumir kettir       í eldhúsinu.
          EXPL     have been       some cats /             some.of.the cats   in kitchen.the
      b. það       hefur verið       * sérhver köttur /* einn af köttunum/ * kötturinn       í eldhúsinu.
          EXPL     has been           each cat /             *one of cats.the / * cat.the             in kitchen.the

---

[13] On the licensing of direct objects of transitive verbs, see notes 29,43 for some general remark.

Vangnes stressed that the same expletive, *það*, is involved in the TEC and in this structure; hence, the strength of the definiteness effect cannot be determined by properties of the expletive, but rather by the position of the subject, intermediate in (27) vs. VP-internal as a first merged internal argument in (28a, b).

An initial survey of DE effects in the German TEC confirms that partitive presuppositional indefinites, i.e. partitives embedding a definite description, are indeed allowed, whereas definites are excluded; the status of universal quantifiers appears to be mixed.[14] Pending further investigation, we take these provisional results to establish the point that TEC subjects occupy a clause-intermediate position different from the internal argument position of i-subjects, and that in this position they do not obey the same radical definiteness restriction (21) as i-subjects, but rather a distinct and weaker restriction, which can be characterized as follows:

(29) The intermediate subject position occupied by TEC subjects excludes definite noun phrases.[15]

We leave for future research an explanation of this constraint; with respect to the current discussion, the relevant point is that TEC subjects do not undermine our initial hypothesis, with the DE a property of i-subjects formulated as in (21).

2.3 *The definiteness effect of existential sentences*

One core case of DE is found in existential sentences like *there be* sentences in English of the type illustrated in (30); it is precisely through this type of sentences – systematically discussed for the first time in Milsark (1974, 1977) – that the whole phenomenon of DE was first given the descriptive and theoretical prominence that it still has:

(30)    a. There is a man (in the garden)
        b. There are cats (in the garden)

The DE in (30) has the same flavor as the cases reviewed in (1), (2) and (4) in the introduction and in section 2.1; the sole difference is that the verb of (30) is the copula *be*.[16] Similarly, in Italian, existential sentences contain the copula, accompanied by clitic *ci*:

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[14] According to five native speakers whom we consulted, the following similar pattern emerges in German (although judgments are subtle, especially on the borderline cases, such as e.; clear definites such as f. and g. or a noun phrrase introduced by a definite determine are, however, excluded in this type of structures by all our informants):

| (i). | Es | hat | jeder Gast | die Braut | geküsst. |
|---|---|---|---|---|---|
| | EXPL | has | each guest | the bride | kissed |
| b. | Es | hat | einer der Gäste | die Braut | geküsst. |
| | EXPL | has | one of-the guests | the bride | kissed |
| c. | Es | haben | alle Gäste | die Braut | geküsst. |
| | EXPL | have | all guests | the bride | kissed |
| d. | Es | haben | beide Gäste | die Braut | geküsst. |
| | EXPL | have | both guests | the bride | kissed |
| e. ? | Es | haben | einige Gäste | die Braut | geküsst. |
| | EXPL | have | some guests | the bride | kissed |
| f. ?* | Es | hat | *dieser Mann* | die Braut | geküsst. |
| | EXPL | has | this man | the bride | kissed |
| g. ?* | Es | hat | *Peters Bruder* | die Braut | geküsst. |
| | EXPL | has | Peter's brother | the bride | kissed |

A systematic cross-linguistic investigation of definiteness effects in the TEC is beyond the scope of this article.

[15] In slightly more technical terms, this position excludes quantifiers that are principal ultrafilters (in the sense of Barwise & Cooper 1981, 174). A principal ultrafilter is a family of sets each of which includes a given entity a ($\{X \subseteq D_e \mid a \in X\}$). A principal ultrafilter can thus be reduced to an entity-type denotation, cf. Partee (1984).

[16] There are well known exceptions to DE. In existentials one exception is the possibility of a 'list reading', which is taken to be compatible with Partititive case. Similarly for the so called uniqueness intepretation with other unaccusatives. (i.e. *È caduto il portafoglio,* lit. fell the wallet), Belletti (1988:15-16); on uniqueness definites in existential *there* contexts, see Abbott (2001, examples (25)-(26)).
A further apparent exception to the DE is found in examples such as (i):

| (i) | All'improvviso | sono entrati | i pompieri | dalla finestra. |
|---|---|---|---|---|
| | suddenly | are.3PL entered.MPL | the firemen | from-the window |

Following Zamparelli (2002), we assume that in Italian a plural definite description denotes a kind, and in a context like (i) it can be shifted to the corresponding property and existentially bound, resulting in an indefinite interpretation: thus, the definite description in (i) denotes unspecified instances of the fireman kind. This interpretive route is not available for plural definite descriptions in English.

(31)    a. C'è un uomo (in giardino).
        b. Ci sono gatti (in giardino.)

*Ci* of existential sentences is the same word as the locative clitic *ci*, meaning "in/to XP", corresponding to a locative PP (32a,b). The same holds in English, where expletive *there* of existential sentences (30) (and of 1b), also corresponds to the word expressing a deictic locative PP, (32c,d, which translate 32a,b):

(32)    a. Vado/Vivo a Roma.
        b. Ci vado/vivo.
        c. I'll go to/live in Rome.
        d. I'll go/live there.

That existential sentences involve a locative-like element is a property found in a variety of languages. A thorough (re) visitation of the general properties of existential sentences, ultimately of the question of what makes sentences like (30) and (31) "existential", would take our discussion too far afield. Here we focus on the relation between existential sentences like (30), (31) and sentences like (1), (2) and (4); our crucial assumption is that they both involve an unaccusative verb phrase. Building on some recent insights from Mc Closkey (forthcoming), based on properties of the Irish existential predicate *ann*, we can assume that an element of "Location" providing the necessary context for the existential meaning to be composed is present in existential clauses (see McCloskey's "Instantiate" related to Mc Nally 2009 and integrated with a definition of context à la Francez 2010).[17] This is why it is not always easy to tease apart a real locative PP (often deictic, as in 33b) from the "Location" present in existential expressions (33a). Crucially, however, the DE is only manifested on the post-verbal noun phrase of the existential sentence.

(33)    a. There is a man/*the man (in the garden).
        b. A man/The man is there (, in the garden).

As recently discussed by Cruschina (this volume), Italian sentences involving clitic *ci* prima facie also give rise to the same uncertainty. However, much as in the English case in (33), only existential sentences manifest DE, whereas sentences involving locative *ci* and a post-verbal definite subject do not; in contrast with English (33a), a definite postverbal subject is possible in Italian as the focus of new information, as illustrated in (34b), contrasting with (34)a (on post-verbal new information subjects and the lack of DE constraining their distribution, see also section 5):

(34)    a. Ci    sono    gatti    (in giardino).
          there  are    cats    (in garden)
        b. C'è Maria/tua sorella (, in giardino)        (>> answer to 'Who is there in the garden?')
          there is Maty/your sister  (in garden)

Granted that much, we are then led to assume that the verb of existential sentences (e.g. *be*) projects the same structure as any unaccusative verb, for relevant respects.[18] In particular, the post-verbal noun phrase is the internal argument of the existential verb. The verb can be lexicalized as the copula, as in the English and Italian cases illustrated above, or as the related verb *have* (Kayne 1993), as is the case in various other languages, e.g. French (as in 2a) and Spanish.[19] Let us refer to it with the general term *be*. Crucially, a location expression is also typically required (as explicitly revealed by Irish *ann*, according to McCloskey's account).

The following structure in (35) gives a concrete implementation of our proposal: the existential verb projects an unaccusative verb phrase, which does not contain any external argument; it contains instead an internal argument, as originally proposed by Williams (1984), and optionally also a PP, as it is typically the case with unaccusatives. Crucially, the functional structure of the existential unaccusative verb phrase is richer in that it also contains the expression of a Location voice, realized in a small v right above the phrase obtained after first Merge of *be* and its internal argument; by hypothesis, the Italian clitic *ci* is a possible realization this voice. *There* present in existential sentences could have the same origin (see Moro 1997: 2.4): it could be analyzed as the specifier of the locative voice. The proposal is similar in this respect to Deal's (2009) analysis of *there* as an expletive inserted low in the structure as the specifier of a small-v.[20]

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[17] It is sometimes proposed that possibly all unaccusatives contain a locative, which may remain silent in the form of a covert PP in their structure (Moro 1997, Alexiadou & Shäfer 2010). The hypothesis in the text is different in that it singles out existentials as involving a particular Location voice in the verbal shell (different from a covert PP). See (35).

[18] See Mc Closkey (forthcoming) for the observation that the existential meaning does not necessarily involve use of a verb as is the case for certain existential expressions solely containing the element *ann* – glossed as *in it* – in Irish; this possibility is represented crosslinguistically, Russian being another case in point.

[19] It can also be lexicalized as a different verb, e.g. in the German *es gibt* construction.

[20] The proposed analysis also shares with Deal's (2009) approach the insight that the DE is derived as an effect of the noun phrase remaining in the internal argument position where it receives a weak interpretation. The analysis sketched out in (35) is not

(35)
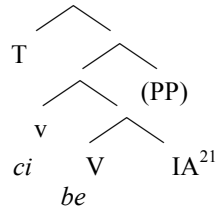


A number of phenomena show that the indefinite post-verbal argument of existential clauses is a well-behaved internal argument; we exemplify from Italian. Firstly, bare plural noun phrases can be argued to be the overt manifestation of Partitive Case in a language like Italian (Belletti 1988: 29). As we discuss in §4.1 (point vi.), Partitive Case (assigned through a functional head F: (48) below) can only access the internal argument position, giving rise to the DE. Since it is assigned to the internal argument of V, this implies that it is assigned in combination with Th-role assignment; this is a crucial property that Partitive Case shares with traditional inherent Case. A direct consequence of this analysis is then that Partitive Case cannot reach the subject position of a small clause complement. As Belletti (1988, (69)) discusses, this is indeed the case, since bare plurals are excluded as subjects of small clause complements of verbs like *considerare, ritenere*/consider:

(36)     Ritengo/Considero [questi studenti/alcuni studenti/*studenti intelligenti].
         reckon.1SG/consider.1SG  these students/some students / * students intelligent

By contrast, a bare plural is perfectly allowed in the post-verbal position of *ci* existential sentences:

(37)     Ci sono          studenti          (in corridoio).
         there are        students          in corridor

Hence, the bare plural of the existential construction in (37) behaves indeed as an internal argument.[22]
Secondly, the post-verbal noun phrase can also be cliticized through *ne*-cliticization, as illustrated in (38a): this possibility is productively available only to internal arguments/direct objects (Burzio 1986, Belletti & Rizzi 1981). The same possibility is predictably completely excluded for the subject of a small clause (38b):[23]

(38)     a. (Studenti)    Ce      ne      sono ___ (in corridoio).
            (students)    there   of-them are       (in corridor)
         b. *(Studenti) Ne        considero/ritengo ___     intelligenti.
            (students) of-them    consider.1SG/reckon.1SG   intelligent

---

immediately compatible with Moro's (1997) proposal, according to which existential *be* selects a small clause complement on a par with copular *be* (e.g. *John is nice/a doctor/in the room*), with *ci/there* the predicate of the small clause raising into the subject position of the clause (or relevant clitic head in the case of *ci*). See also McCloskey (forthcoming) for critical discussion. Given the richer conception of the verbal functional structure we are working with (richer than the one assumed at the time of Moro 1997), since *ci* is the expression of the Location voice, it is in fact part of the predicate; in this respect the idea shares some of the insights of Moro's approach. However, the crucial point for us is that existential *be* is an unaccusative verb, and the post-verbal noun phrase is its internal argument, along the lines of Williams' (1984) original approach (also Belletti 1988; fn.5; Higginbotham 1987, quoted in this respect in Moro 1997). In Lasnik (1999: 85-90) the small clause analysis of existential *be* is reconciled with Partitive Case under the idea that the predicate of the small clause raises into *be* to form a complex predicate, able to assign Th-trole and inherent Case. In Lasnik's view, however, *there* is not a predicate but an expletive (as in traditional accounts, and more recently Deal 2009) and the responsible for Partite Case assignment/checking is *be*. This aspect of Lasnik's proposal is very close to ours.
[21] We postpone until section 4.1 a more precise proposal on the structural representation of the IA of unaccusatives.
See also the following section 4.1 on the presence and role of a functional head that we label F right above the first projection V + IA, carrying number and gender φ-features. For the sake of clarity, at this stage of the discussion we have not integrated F in the representation (35).
We do not further elaborate on the possible presence of a small v as a verbalizer in all unaccusatives. (as in e.g. Deal 2009); cfr. footnote 32, which would be compatible with this option. Nothing crucial hinges on this decision in the present discussion.
[22] Moro (1997, 116) claims that when *ci* incorporates into *be*, this endows the copula with selectional properties, so that the subject of the small clause of which *ci* is the predicate counts as being selected by *be*. This amounts to claiming that this noun phrase must be treated in fact as an internal argument of *be*, as in the account defended here.
Kalulli (2008) and references cited therein on the difference between bare plurals (possible) and bare singulars (impossible) in English *there* existential sentences.
[23] The possibility of *ne*-extraction in (i) is expected as a case of extraction from the accusative (not partitive), Case marked subject (under ECM/subject to object raising) of the complement of *considerare/ritenere*:
(i) Ne    considero/ritengo          molti ___ intelligenti
   of-them consider.1SG/ reckon.1SG    many     intelligent

Furthermore, in Italian past participle agreement is obligatory with the postverbal noun phrase of *ci* existential sentences, also when it is a bare plural (39a; past participle agreement always is obligatory with the postverbal noun phrase of unaccusative verbs, 39b):

(39)  a. Non  ci    sono   mai   stati        molti gatti/gatti   (in giardino)
          not   there  are    ever  been.MPL      many cats/cats     (in garden)
      b. Non sono   mai   arrivati      molti gatti/gatti   (in giardino)
          not   are    ever  arrived.MPL   many cats/cats     (in garden)

This is another property that the post-verbal noun phrase of *ci* existential sentences shares with internal arguments (unaccusative and passive postverbal subjects in particular). [24]

In conclusion, we assume with much classical literature (e.g. Williams 1984; see also footnote 20) that *be* of existential sentences is an unaccusative verb and that DE concerns its internal argument, in the same way and for the same reasons its does with unaccusative verbs in general.[25]

## 3. *Intermezzo*: **Indefinites in Maori**

The cluster of properties that characterize English, French and Italian i-subjects suggest that licensing an internal argument *in situ* gives rise to both syntactic and semantic defectiveness. From the syntactic viewpoint, the i-subject does not seem to Agree with a functional head endowed with a phi-complete probe (resulting in 'structural Case' licensing); from the semantic viewpoint, the argument cannot be a presuppositional quantifier.
There is a long-standing intuition that these two aspects of defectiveness must be related to each other; in Belletti's (1988) proposal, the relationship was captured by the inherent semantics of Partitive Case. Yet even the Partitive Case hypothesis does not address the deeper question of *why* licensing in the thematic position should correlate precisely with the observed semantic restrictions.
As a step towards addressing this question, an important observation is that the same cluster of properties emerges in an apparently unrelated set of data, namely Maori *he*-indefinites as described by Chung & Ladusaw (2004: 21-73). In this section we summarize the relevant evidence from Maori.
Maori has two types of indefinite noun phrases, introduced by the articles *he* and *tētahi*; the former, contrary to the latter, is not inflected for number:

(40)  Kua    riro        [*he*    pukapuka     a     Mere].
      T      be.taken            a       book         of    Mere

(41)  Kua    riro        [*tētahi*  pukapuka     a     Mere].
      T      be.taken            a       book         of    Mere
      'A book of Mere's was taken.'      (Chung & Ladusaw 2004: 26-27, (10a-b))

Both types of noun phrase allow for a distributive interpretation in the scope of a universal quantifier, showing that they indeed receive an indefinite interpretation:

(42)  a. I ia  tau ka    pōti-tia        [*he* kaiwhakahaere       hou].
          in each year    T elect.PASS       a chairperson       new
          'Each year a new chairperson is elected.'

      b. I ia  tau       e       ngaro ana       [*tētahi* tangata]   i te ngahere
          in each year       T       be.forgotten       a person       in the bush
          'Each year, someone gets lost in the bush.'
                                  (Chung & Ladusaw 2004: 35, (21a-b))

However, *tētahi*-indefinites are also able to take wide scope with respect to other elements in the clause, in particular with respect to negation (which is realized by means of the negative copula *kāore*), as shown in (43a). In contrast, *he*-indefinites necessarily take narrow scope w.r.t. negation, as shown in (44).[26]

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[24] In §4.1 we will argue that a functional head (F) which is involved through Agree in the assignment of partitive Case to i-subjects is also implicated in the obligatory past participle agreement of number and gender, thus explaining this correlation.
[25] And also transitive verbs in the passive voice, as in the examples (2c), (4b) above.
[26] The contrast between (43a) and (44) is reminiscent of the French contrast between the partitive article *des* in (i), which can be interpreted outside the scope of negation, and the article-less structure in (ii), which cannot (see Kayne 1981, 95 ff.):
(i) J'ai                      pas              lu           des livres
     1sg.cl have.1sg          not             read          of+the.pl books
(ii) J'ai                     pas              lu           de livres

(43) a. Kāore [*tētahi* tangata] i waiata mai. (∃ > neg)
      T.not a person T sing to-here
      'A particular person didn't sing.'

    b. Kāore [*tētahi* tangata] e mahi mā-na (neg > ∃)
      T.not a person T work T.of-him
      'No one would work for him.'

                    (Chung & Ladusaw 2004: 40, (27a), (23c))

(44) Kāore [*he* tangata] i waiata mai. (neg > ∃, * ∃ > neg)
     T.not a person T sing to-here
     'No one at all sang.'
     * 'A particular person didn't sing.'
                  (Chung & Ladusaw 2004: 40, (28a))

This shows that *he*-indefinites are just scopeless indefinites, displaying the behaviour that we identified as typical of our i-subjects. And indeed *he*-indefinites, contrary to *tētahi*-indefinites, are restricted to occupying the internal argument position, as in (40) and (42a) above, and cannot occur as subjects of transitive or unergative verbs:[27]

(45) a. * I whiu [*he* wahine] i tāna mōkai ki te moana.
      T throw a woman DO her pet into the ocean
      'A woman threw her youngest child into the ocean.'
                  (Chung & Ladusaw 2004: 57, (49))

    b. ?* E mahi ana [*he* tangata].
       T work a person
      'A man is working.' (Chung & Ladusaw 2004: 57, (51b))

(46) a. I whiu [*tētahi* wahine] i tāna mōkai ki te moana.
      T throw a woman DO her pet into the ocean
      'A woman threw her youngest child into the ocean.'
                 (Chung & Ladusaw 2004: 56, (48a))

    b. E mahi ana [*tētahi* tangata].
      T work a person
      'A man is working.' (Chung & Ladusaw 2004: 57, (50b))

Thus, Maori shows an overt distinction between scopeless indefinites and other indefinites, confirming that the former constitute a morphosyntactically separate subclass.

The crucial insight offered by Chung & Ladusaw is that scopeless indefinites are *not saturating arguments*, but rather, they are interpreted as further specifying the predicate. Building on their proposal, in the following section we will elaborate an analysis of i-subjects along the following lines:

(i) Unaccusative i-subjects remaining in the first Merge position are unaccessible to the T probe endowed with phi-features including person; hence, they cannot not value an unvalued Case feature.

(ii) Consequently, they can remain *in situ* only if they are syntactically defective, lacking the D projection, which is the introductor of an unvalued Case feature.

(iii) Since i-subjects licensed in situ lack the D projection, they cannot be interpreted as saturating arguments.

(iv) I-subjects, are interpreted at the interface via application of the rule of Predicate Restriction (Chung & Ladusaw 2004).

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    1sg.cl have.1sg not read of books

[27] The reader may have noticed that example (44) contains a *he*-indefinite which is apparently the subject of an unergative verb. From the data discussed by Chung & Ladusaw, it seems that examples of this type always involve negation, which is a verb, giving rise to a bi-clausal structure; thus, it is likely that the negative copula plays a crucial role in licensing the *he*-indefinite here (cf. Chung & Ladusaw 2004, 43-44).

# 4. **Licensing i-subjects**

## 4.1. *Syntactic licensing*

I-subjects of unaccusatives are merged in the internal argument (IA) position in the verb phrase; the argument structure of unaccusatives is such that no external argument (EA) is merged in a higher $v*P$[28] spec position. This is the core of the classical unaccusative hypothesis (Perlmutter 1978, Burzio 1986), incorporating more recent insights and updating terminology.

As mentioned above, under current minimalist assumptions an Agree type relation is normally established between a T-probe head endowed with $\phi$-features and the external argument of transitive and intransitive vPs. The reason why Agree can only be established with the EA as the goal of the relation is straightforwardly locality, Relativized Minimality/Minimal search (Rizzi 1990, 2004, Chomsky 2005): the IA of a transitive verb phrase cannot be the goal of the Agree relation due to intervention of the EA, which is closer to the probing head T.

This Agree relation can license an EA in a low position in the vP periphery (§5 below), resulting in a linearly post-verbal subject due to further syntactic raising of the lexical verb into the T head(s). Note that such 'peripheral' post-verbal subjects are not constrained by the DE:

(47)  a. Ha parlato            il presidente.
          has spoken           the presiden
      b. (Il libro)            l'ha recensito         quel giornalista
          the book             it has reviewed        that journalist

As pointed out in connection with (3) above, a definite postverbal subject is also possible with unaccusatives, under conditions that we will make explicit in detail in §5. Crucially, in these conditions the post-verbal noun phrase is not in the IA position, but in a position peripheral to the verb phrase, the same as in (47), which can be accessed independently of the class to which V belongs. We postpone until §5 a detailed review of our assumptions on the syntax and (discourse) interpretation of 'peripheral' subjects in sentences containing transitive and intransitive verbs, as well as in sentences with unaccusative verbs and a definite post-verbal subject.

The question to be investigated now is how the i-subject of unaccusatives is licensed. Given the above standard assumptions on the argument structure of unaccusatives, absence of the EA in the unaccusative verb phrase could open up the possibility for the IA to become accessible to the probing T; to the extent that this relation also correlates with the availability of nominative Case, one would not expect any special behavior of the i-subject of unaccusatives, in particular in terms of its definiteness along the lines discussed in the previous sections. The post-verbal i-subject of an unaccusative should behave exactly as the 'peripheral' post-verbal subjects of (47) (and (3)). However, it does not.

We now address the licensing of the indefinite i-subject of unaccusatives and submit a proposal summarized in the following steps:

i.  Assume that the low part of the verb phrase is contained within a functional projection whose head we label F; presence of such head carrying number and gender features is made visible in agreeing past participles (e.g. with object clitics and transitive verbs in the active voice, and with the IA in passives and unaccusatives; see Belletti 2006, forthcoming for an overview on past participle agreement; Collins and Thráinsson 1993 for a related proposal). F is a defective head, lacking the feature person.

ii.  Being a $\phi$-related head, F counts as an intervener with respect to T and blocks the Agree relation from the higher φ-complete T probe, which is also endowed with the feature person; consequently, the IA cannot be probed as the goal of the relation with T;[29] nominative is thus not accessible to this position.

iii.  The IA/i-subject can only be probed by the defective head F; hence it can only be a defective noun phrase, not requiring to enter the Agree relation with $\phi$-complete T.

iv.  Assume that the noun phrase is defective in that it lacks the high D (type) layer, containing the feature person; we label it NumP for concreteness (see also Kalulli 2008 for related proposal on English).

v.  This amounts to claiming that the weak indefinite noun phrase lacking the D layer is in fact not a real argument of the verb, since D is the site of referentiality and argumenthood (cf. Longobardi 1994 and subsequent correlated literature, including Sheehan & Hinzen 2011). Assume that D contains the feature person.

vi.  As far as Case on the i-subject is concerned, we can continue to assume that Partitive Case is/can be carried by the defective weak indefinite, NumP. This is so since we assume Partitive Case to be the

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[28] The v* notation is meant to indicate a higher level of the verbal spine, without committing to specific assumptions on the exact layering of the verbal projection in the larsonian-type structure (Larson 1987). The lexical level may be identified with the root lexical level (R in Chomsky 2014) which then combines with the functional verbal structure v*.

[29] We assume that in languages like French, all the $\phi$-features of T are valued under spec-head agreement with the pronominal expletive in spec/TP, whereas in languages like English and Italian, T agrees for number with F and for person with the expletive in Spec,TP (*there i*n English*; pro* in Italian: cf. Rizzi 1982, Safir 1987 and more recently Cardinaletti 2004, Belletti 2005).

manifestation of an Agree relation with the defective F head, which is low in the structure (by assumption, immediately above VP).[30]

    vii.    Partitive is thus not linked to a specific thematic role like traditional inherent(/lexical) Cases (e.g. Dative); it is however assigned to the IA, hence in conjunction with Th-role assignement, and in this respect, it shares a crucial property of traditional inherent Cases (cf. Belletti 1988, 27-31; footnote 2 above).[31] As will be discussed in detail in §4.2, the semantic interpretation of the defective NumP is only possible when the NumP is the internal argument of V.

The structure in (48) illustrates the proposal:

(48)
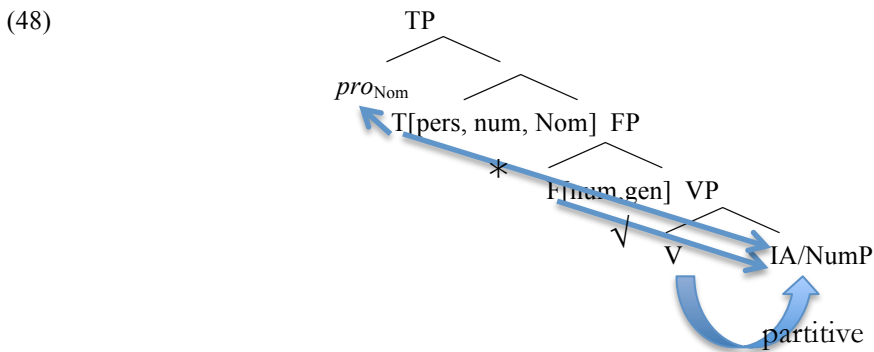


We assume that the unaccusative verb phrase does not generally contain a functional v head, the introducer of the external argument (but see footnotes 3, 21).[32]

Note that the i-subject, being the IA first merged with the lexical verb, meets the syntactic local condition for noun-incorporation, in the classical sense of Baker (1988). Hence, the i-subject is connected to the predicate in the strictest way. This is the syntactic condition tightly linked to the semantic interpretation to be discussed in the next section, according to which the i-subject is interpreted through Predicate Restriction following the core insight of Chung & Ladusaw (2004). Ultimately, it is part of the predicate, hence it is not a standard argument.

We propose that defectiveness of the i-subject of an unaccusative verb is brought about by lack of (at least) the highest D portion in the weak indefinite noun phrase. We will therefore assume that weak determiners, on their non-presuppositional interpretation, do not fill the D head, but rather the lower projection, which we dub NumP (for relevant discussion see Higginbotham 1987, Zamparelli 1999 a.o.).

Assuming that D is the functional domain expressing the person feature of a noun phrase (Longobardi 2008, a.o.), to the extent that D is usually taken to be the site of reference and argumenthood (Longobardi 1994, 2008 and related references), this assumption amounts to claiming that the person feature is the crucial feature to license a referential argument, as originally argued in Rizzi (1986: 543, where the proposal was phrased in a pre-DP model; we return to the notion of "referential argument" in § 4.2). In this respect, the person feature has a different status from number and gender; these features are contained in F and establish an Agree relation with the indefinite i-subject, as overtly witnessed by examples like the following in Italian (see also (39), §2.3):

(49)    Sono entrati        (alcuni) invitati        dalla finestra.
        (are)entered$_{pl, masch}$    some guests$_{pl, masch}$    from the window

The person feature is contained in the T head. We assume that in the lack of a value attributed through Agree, the unmarked/default 3$^{rd}$ person values the feature in T.[33]

---

[30] Partitive Case is then interpreted as the (only) Case compatible with weak indefinites. It is the Case of the IA, as is visible in languages which overtly realize it (e.g. Finnish, as discussed in the original work by Belletti 1988 summarized above). In contrast, definite objects are DPs which enter an Agree relation with a low probe complete of the person feature.

[31] The idea shares the spirit of Lasnik's (1999: 86) insight that partitive Case, and possibly inherent Case in general, involves a (agreement-type) relation with a functional head (AgrO, in the system assumed there). Hence, there is a functional component also with partitive/inherent Case. The difference with structural Case resides in the concomitant assignement/checking of a Th-role. In the system sketched out in the text F is the structural/functional component of partitive Case.

[32] Should a small v head also be present in other unccusative verb phrases as hinted at in footnotes 3 and 21, the locality problem illustrated in (48) would anyway be created by the $\phi$-related (gender and number) head F (not by the light verb-type head, which is not a φ-related head). We leave open her the question whether the unaccusative verb phrase is or is not a phasal domain, as our approach has no direct bearing on the issue (Deal 2009 for discussion).

[33] A slightly different technical implementation would have the person feature in T valued through the spec-head relation with expletive *pro*. However, if the expletive has no person feature precisely because it is an expletive, i.e. it is not an argument, the only remaining value for T would be the default value as in the text proposal. We assume that the plural number feature may be 'inherited' by T via an Agree relation with the F head, as in Vangsnes (2002).

## 4.2. *Semantic interpretation*

In the previous section we argued that i-subjects remaining in the thematic position can be syntactically licensed only as defective noun phrases (NumP), lacking the D-layer. The latter introduces an unvalued Case feature and requires Agree with a $\phi$-complete probe, whereas i-subjects can only Agree with the F head, lacking the person feature.

We have adopted the view that the person feature on D is a necessary condition for a nominal projection to qualify as a referential argument. The term "referential" – borrowed from the literature quoted above – although very intuitive, is not entirely accurate, because a full-fledged argument can not only be referential (denoting an entity of type *e*), but alternatively it can be a quantifier, denoting a family of sets (those sets that stand in the appropriate relation with the restriction set; cf. the beginning of §2).

Therefore, we adopt instead the notion of saturating argument as characterized in Chung & Ladusaw (2004: 6-10): a saturating argument is one that reduces the valence of the selecting predicate. For instance, in (50) the verb *come* has the valence for a single argument *x*; the referential argument *John* denotes an individual (*j*), and when it composes with the verb, it saturates the valence represented by *x*, yielding the set of events of coming by *j*:[34]

(50)   a. John came.
       b. $[\lambda x.\lambda e.\ \text{come}'(x, e)]\ (j) = [\lambda e.\ \text{come}'(j, e)]$

In the technical notation of (50b), the first lambda prefix ($\lambda x$) defines a function which takes in input an individual (j) and returns another simpler function (($[\lambda e.\ \text{come}'(j, e)]$): the latter characterizes the set of events of coming by John. The saturation of the verb's valence is made visible by the elimination of the most external lambda-prefix, and by the concomitant substitution of j in the place of x (lambda-conversion).

The same valence reduction is observed in the case of a quantificational argument; for the sake of simplicity, we illustrate in (51) with a non-eventive predicate:[35]

(51)   a. Every boy is lazy.
       b. $\underset{\text{quantifier}}{\underline{[\lambda X.\ \{y: \text{boy}'(y)\} \subseteq X]}}\ \underset{\text{nuclear scope}}{\underline{(\{z: \text{lazy}'(z)\})}}\ =\ \{y: \text{boy}'(y)\} \subseteq (\{z: \text{lazy}'(z)\})$

The quantifier *every boy* is a function that takes in input a set (indicated by the capital variable X) and returns the value 'true' if and only if this set includes the restriction set of boys ($\{y: \text{boy}'(y)\}$). In our example, the quantifier takes in input the denotation of the predicate, which characterizes the set of lazy people: thus, the sentence is true if and only if the set of boys is included in the set of lazy people. Note that the valence of the predicate (indicated by the individual variable *z*) is "used up" to define the set that constitutes the nuclear scope of the quantifier: technically, the variable *z* is bound by set abstraction, and it is "no longer available to semantic composition" (Chung & Ladusaw 2004, 3, (4)).

In a nutshell: a predicate is something that has an open valence; a saturating argument is something which reduces the valence of a predicate. Chung & Ladusaw propose a third category, that of *non-saturating arguments*. These are weak non-presuppositional noun phrases – in the sense explained in §2, called 'indefinites' after Diesing (1992) – which syntactically fill an argument position, selected by a predicate, yet fail to reduce its valence.

The crucial idea is that a non-saturating argument denotes a property. A special compositional rule, Predicate Restriction, combines it with the predicate in such a way that the property denoted by the non-saturating argument restricts the domain of the function denoted by the selecting predicate in the corresponding argument position.

To illustrate, consider a simple VP like (52) (we leave out the external argument for the time being, and we return to it below):

(52)   $[_{VP} [_V \text{meet}]\ [\text{a boy}]]$

Informally, the verb *meet* will characterize the set of events of meeting some individual *x*; the non-saturating indefinite *a boy* denotes the property of being a boy; the rule Restrict combines these two denotations so as to yield the set of meeting events whose Theme has the property of being a boy (the set of boy-meeting events).

The compositional interpretation proceeds as in (53). As shown in (53a), the lexical V introduces a relation between an event e and an entity x which is the Theme of that event; the indefinite object, instead, denotes a property (53b). In (53c), The rule Restrict combines these two denotations by adding to the original function denoted by the V the restriction that its Theme must have the property of being a boy:

(53)   a. $[\![ V ]\!] = \lambda x.\lambda e.\ \text{meet}'(x, e)$
       b. $[\![ [\text{a boy}] ]\!] = \text{boy}'$

---

[34] For the sake of simplicity we ignore the past tense here.

[35] The formula is also simplified in that the denotation of the noun and of the predicate are indicated as sets, rather than as the corresponding characteristic functions. Furthermore, for expository purposes we are also leaving out the intensional dimension.

c. [[ [$_{VP}$ meet a boy] ]]= Restrict ([λx.λe. meet′(x, e)], boy′)
        = [λx.λe. meet′(x, e) & boy′(x)]
        (In prose: the function, whose domain is restricted to boys, which returns for each boy the set of events of meeting him.)

Note that, crucially, the restricted argument position, still marked by *x,* has remained *unsaturated.* [36]

Since the restricted argument position is left unsaturated, it undergoes Existential Closure on top of the VP level: "...closure must be delayed until a point in the compositional process when further attempts at saturation are impossible in principle. We take this point to be the event level" (Chung & Ladusaw 2004: 125).

Interestingly, the compositional mechanism proposed by Chung & Ladusaw yields the cluster of properties characteristic of our i-subjects. Firstly, only weak/indefinite noun phrases, which are neither inherently referential nor inherently quantified, can denote a property, so as to compose via Restrict. Secondly, this analysis accounts for the fact that i-subjects syntactically fill an argument position – specifically, the internal argument position – but nevertheless semantically qualify as 'defective' arguments. Finally, the hypothesis that Existential Closure applies at the VP-level yields a non-presuppositional interpretation of the non-saturating argument and implies narrow scope w.r.t. any other operator, including negation (cf. § 2.1).

We therefore propose the following hypothesis:

(54) I-subjects are interpreted at the interface via Predicate Restriction.

One question that remains to be addressed is why this licensing route is limited to the internal argument position (see Chung & Ladusaw 2004: 59-60 for a sketch of a proposal). As mentioned in §4.1, the configuration that allows for Predicate Restriction corresponds to the syntactic configuration for noun incorporation:[37] this is the tightest possible relation with the lexical Verb under First Merge. From this perspective, we can hypothesize that external arguments are excluded from this licensing route because they are not directly related to V.

Chung & Ladusaw actually assume that the external argument is selected by the V head, just like the internal arguments.[38] Let us assume instead, following Chomsky (1995) and much subsequent work, that the external argument is introduced by the separate head v, as mentioned in §4.1 (see also footnotes 3, 21, 32).

From a compositional viewpoint, v introduces a thematic relation between an individual and an event, and this relation is combined with the event description contributed by VP; for concreteness, we adopt the rule of Event Identification proposed by Kratzer (1996), which combines the VPs' event description (λe.P(e)) with the agent relation denoted by the sister head. (In this notation, e is the usual entity type and s is the type of events.).[39]

(55) a. Event Identification (EI)

| $f_{<e,<s,t>>}$ | $g_{<s,t>}$ | $\rightarrow$ | $h_{<e,<s,t>>}$: $λx_e.\ λe_s.\ f(x)(e) \wedge g(e)$ |
|---|---|---|---|
| b.  $λy.λe.agent′(y, e)$ | $λe.P(e)$ | $\rightarrow$ | $λy.λe.agent′(y,e) \wedge P(e)$ |

Suppose now that the internal argument undergoes Predicate Restriction, as in (53) above: since this argument position remains unsaturated, the VP does not denote a property of events (type *<s,t>*), but it is still a relation between individuals and events (type *<e,st>*); this is a wrong type for Event Identification to apply:

---

[36] This is the main difference between this proposal and 'semantic incorporation' à la van Geenhoven (1998). For a comparison of the two approaches, we refer to Chung & Ladusaw (2004: 114-118).

The most straightforward empirical justification for this analyical choice comes from languages like Chamorro, where an incorporated direct object can be doubled by a saturating 'extra object':
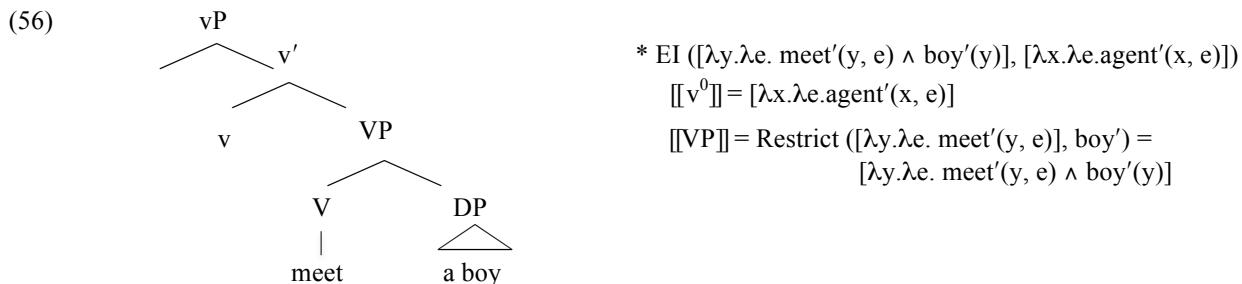
| (i) | Si | Carmen | ga¨i-[ga']i ga'lagu. | (Chung & Ladusaw 2004, 109, (70)) |
|---|---|---|---|---|
| | Unm | Carmen | Agr.have-pet | the dog |
| | 'Carmen has the dog as pet.' | | | |

In (i), the extra object is the definite description *i ga'lagu* ('the dog'): this is allowed precisely because the incorporated object *ga'* 'pet' is a non-saturating argument, which restricts the internal argument position but fails to saturate it (Chung & Ladusaw 2004: 109-110). On the other hand, in languages like Maori a morphosyntactic licensing constraint conspires to rule out the occurrence of such an 'extra object'.

[37] Within our approach, it would be possible in principle to stipulate that Predicate Restriction is contingent on incorporation into the verb, and that this option is only available for internal arguments (Baker 1988). However, Chung & Ladusaw (2004: 136-141) show that Maori applies Predicate Restriction both to incorporated direct objects and to *he*-indefinites of the type exemplified in §3 above, which do not appear to undergo incorporation; thus, it seems that morphosyntactic incorporation is not a necessary condition for Predicate Restriction.

[38] This assumption actually forces them to reorder the lambda prefixes in the predicate's denotation, so that the restricted internal argument is the last one to be saturated by Existential Closure at the VP level (Chung & Ladusaw 2004: 10).

[39] Actually, in Kratzer (1996), the head introducing the external argument is Voice. For our current purposes, Voice can be identified with Chomsky's v, but see Harley (2012) for relevant discussion of the distinction between these two heads.

(56)

vP
├ v′
│  ├ v
│  └ VP
│     ├ V — meet
│     └ DP — a boy

\* EI ([λy.λe. meet′(y, e) ∧ boy′(y)], [λx.λe.agent′(x, e)])

$[[v^0]]$ = [λx.λe.agent′(x, e)]

$[[VP]]$ = Restrict ([λy.λe. meet′(y, e)], boy′) =
[λy.λe. meet′(y, e) ∧ boy′(y)]

It follows that, in order for the composition to proceed, the unsaturated internal argument must be bound by Existential Closure (EC) at the VP level, before the VP combines with the v head: [40]

(57)     $[[VP]]$ = EC([λy.λe. meet′(y, e) ∧ boy′(y)]) = [λe. ∃y. meet′(y, e) ∧ boy′(y)]
         $[[v′]]$ =     EI ([λe. ∃y. meet′(y, e) ∧ boy′(y)], [λx. λe. agent′(x,e)])
         =     [λx. λe. ∃y. meet′(y, e) ∧ boy′(y) ∧ agent′(x,e)]

This implies that in a transitive structure, the default rule of Existential Closure applies at a compositional level that does not include the external argument. This, in turn, gives us a reason why the external argument cannot be the target of Predicate Restriction: if it were, it would remain unsaturated and the compositional process could not converge.


4.3. *Intermediate summary*


To sum up, we have proposed that unaccusative i-subjects licensed as IAs in the thematic position necessarily lack the D-layer, as this would introduce an unvalued Case feature inaccessible to any φ-complete probe. As a consequence, i-subjects denote a property and cannot be interpreted as saturating arguments, but they must undergo Predicate Restriction and subsequent Existential Closure at the VP level. This analysis accounts for the cluster of properties that characterize the 'radical' DE (21).

Note also that the analysis presented in this section 4 embodies a particular view of the syntax-semantics interface, whereby Agree for φ-features, far from being semantically inconsequential, constrains the possible interpretation of a noun phrase that is first merged in a thematic position: it is interpreted as a saturating argument if and only if it is probed by a phi-complete functional head; otherwise, it can only be interpreted as a restricting, but not saturating, argument. This view can be traced back to the spirit of Rizzi (1986), who proposed that (valued) φ-features are a prerequisite for argumenthood and for referentiality of a noun phrase; for more recent elaboration, see Longobardi (2008). Since in the standard Minimalist framework Agree for φ-feature yields valuation of unvalued Case, this theoretical stance subsumes the core of the Case Visibility Condition.

Having proposed an account of i-subjects falling under the DE, in the next section we turn to definite post-verbal subjects in Italian. Building on Belletti (2001, 2004), we show that these exploit a completely different licensing route in the periphery of the verb phrase.


5.  **The syntax and interpretation of post-verbal definite subjects**


Consider a question answer pair like the following in (58):

(58) a.    Chi        ha          parlato?
           who        has         spoken
     b. Ha        parlato       Gianni.
           has        spoken        John

---

[40] The same holds if we assume a more elaborate decomposition like that in Ramchand (2008). Here, the Init head existentially binds the lower event contributed by its complement (Process Phrase) and introduces the Initiator argument above it: once again, the internal argument (Undergoer) introduced within the Process Phrase must be existentially closed in order for the composition to go through:
(i)      [$_{initP}$ DP$_{EA}$ [ init [$_{ProcP}$ DP$_{IA}$ [ Proc...]]]]
(ii)     $[[init]]$ = [λf$_{<s,t>}$. λx.λe. ∃e′ (f(e′) & cause′(e, e′) & agent′(x, e) ]
(iii)    $[[init′]]$ = $[[init]]$ ($[[ProcP]]$) = [λx. λe. ∃e′⟦ProcP⟧(e′) & cause′(e, e′) & agent′(x, e) ]

In (58) an intransitive verb is present; the definite subject in the answer is post-verbal. This type of sentences shows very straightforwardly that there is no indefiniteness requirement on the post-verbal subject of an intransitive verb. Indeed, not only can the definite subject be post-verbal, in fact it *must* be post-verbal in the discourse pragmatics of the exchange in (58). Similarly, in the exchange in (59) with a transitive verb, and in (60) with an unaccusative:

(59) a. (A proposito del libro) Chi      lo      recensirà?
        (concerning the book) who    it.CL review.FUT.3SG
    b. Lo      recensirà        Gianni/ quel giornalista.
      it.CL    review.FUT.3SG    John/that journalist
(60) a.   Chi      è      arrivato?
       who     is      arrived
    b.   È      arrivata   Maria.
       is      arrived    Mary

All the answers in (58)-(60)b contain a post-verbal subject which is the focus of new information, as it provides the new information requested in the question. Grounding the analysis in cartographic terms, Belletti (2004) has proposed that in cases of this type the subject fills a dedicated position in the low area of the clause, right in the periphery of the verb phrase, which is dedicated to host new information constituents.[41] This peripheral position is a property of the clause structure, present in all clauses, independently of the verb class to which the verb of the actual sentence belongs.

The fact that the post-verbal position of the subject is tightly linked to the focus interpretation has led to a qualification of the descriptive term "free inversion" often utilized in the literature on subject inversion: inversion is free as far as the verb class to which the verb of the sentence belongs, but it is not at all free as far as its discourse value is concerned.[42] Hence, on the basis of exchanges like (58)-(60) the proposal can be made that a vP/VP-peripheral new information Focus position is present in the low part of the clause, along the lines in (61)a,-b; this position is exploited by a post-verbal new information subject of the type in (58)-(60)b. We will assume with Belletti (2004) that this position is right above the lexical projection of the verb phrase: a vP for transitive and intransitives (61a), a VP in the smaller verbal projection corresponding to the argument structure of unaccusatives (61b).[43] The external argument for transitive and intransitive verbs and the internal (definite) argument for unaccusatives moves to the Spec/FocP position, where it is interpreted as the focus of new information; subsequent movement of V to a higher inflectional head results in the VS order:

(transitive, intransitive)

(61) a.



---
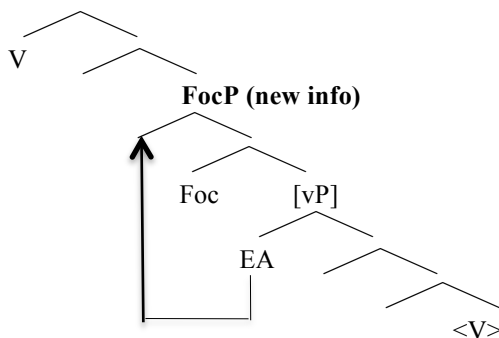
[41] E.g. also, typically a direct object in an object question like (i)a whose full answer diplays the SVO order, with the direct object following the verb:
(i) a.      Che cosa hai letto?
         What have.2SG read
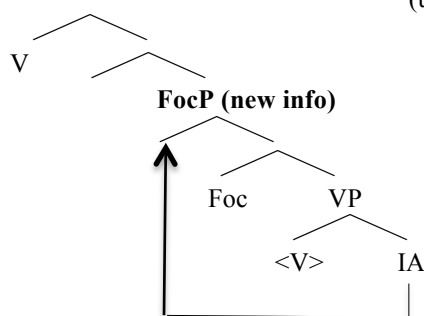    b.      Ho letto un romanzo
         have.1SG read a novel.
[42] The postverbal subject can also be a topic, with a totally different prosody than the one associated with (58)-(60). See Belletti (2004) for detailed discussion in terms of a vP periphery also containing a topic position.
[43] The VP is in fact contained within the functional projection FP expressing morphosyntactic features of Number and Gender, as assumed in (48); see also (66) below. We omit FP from the tree structures whenever irrelevant.
More structure is to be postulated in the unaccusative VP to host a PP argument in case it is also present as the examples in (3), e.g. along the lines in (i):

(i)   VP
      ∧
     ∧ PP
   V   IA

(61) b.                                                           (unaccusatives)

```
        V
          \___
              FocP (new info)
                 \___
                 Foc    VP
                         \___
                        <V>    IA
```

Notice that a crucial consequence of the proposed analysis so far concerns unaccusatives. With this verb class, the order VS can be derived in two different ways: either with the IA in its first Merge position, as in (48) above (reminded in (62) for its essential property), or with the IA in the Spec of low Focus, as in (61b) above.

(62)                                    VP
                                      /    \
                                     V      IA
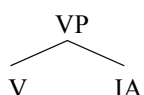
It is only in the case of (48)/(62) that the noun phrase has to be a weak indefinite (NumP in our assumptions) and the DE is characteristically manifested. No definiteness requirement concerns the focalized post-verbal subject of unaccusatives in the case of (61)b, as it doesn't with the post-verbal subject of the other verb classes (cf. again (47)/(58b), (59b), (3)/(60b) above).

The sentences in (58b)-(60b) are so called narrow focus sentences, in which a single constituent, the subject, is focalized. A post-verbal subject also occurs in so called all-new sentences; a typical instance is the answer to a *what happened* question with intransitives and unaccusatives:

(63)  a.   Che cosa          è successo?
           what              is happened
      b.   Ha parlato        Maria.
           has spoken        Mary
      c.   È arrivata         Maria.
           is arrived.FSG Mary
      d.   E' arrivato       un ragazzo.
           is arrived.MSG    a boy

With transitives, the order in an all new-sentence is SVO, with O a lexical noun phrase (64b);[44] however, if O is a topic, as in the question in (64c), and hence realized as a clitic pronoun in the answer, the subject can be post-verbal again, as illustrated in (64d):

(64)  a.   Che cosa          è successo?
            what             is happened
      b.   Gianni        ha mangiato      la torta./   Un camion      ha tamponato   l'utilitaria.
           Gianni        has eaten         the cake / A truck         has crashed-into the car
      c.   Che cosa è successo        alla torta?/     Che cosa è successo      all'utilitaria?
           what is happened           to-the cake? /    what is happened        to-the car?
      d.   L'           ha mangiata  Gianni /    L'               ha tamponata   un camion.
           it.FSG.ACC    has eaten    John /     it.FSG.ACC  has crashed-into    a truck

We assume that in all new sentences it is the whole vP/VP which moves to Spec/FocP; the post-verbal occurrence of the subject – when it is the EA – is once again due to subsequent movement of V to a higher position. (65) illustrates the derivation (for the vP case):

---

(65)

```
        V       FocP (new info)
              Foc    [vP]
                   EA
                      <V>    (IA)
```
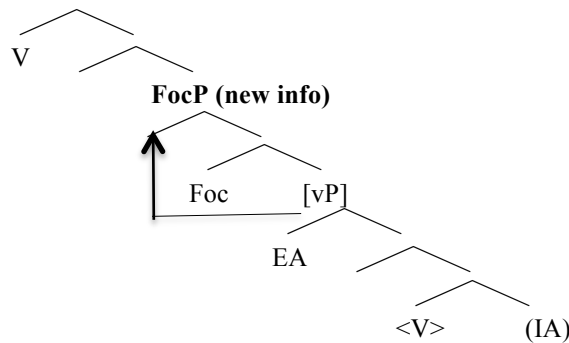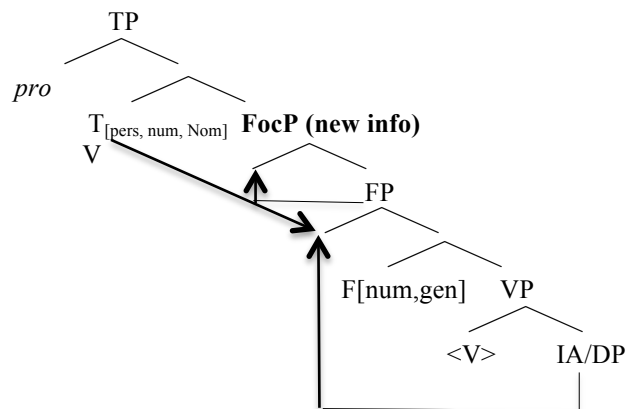
When the subject is preverbal as in (64)b, we assume that it moves into a high subject position in TP (Cardinaletti 2004). The derived SVO order is also possible when the object is expressed through a clitic pronoun (e.g *Gianni l'ha mangiata*/Gianni it-CL has eaten). Hence, in the answer to a question like (64)c the subject is not necessarily post-verbal. The preverbal position of the subject in this case implies an interpretation whereby it is presupposed that the sentence is going to be about that particular subject (i.e. *Gianni* in the example above; see Rizzi (2005) on the so called aboutness interpretation of preverbal subjects). No such presupposition is involved in the answer in (64)d in which the subject is post-verbal.

When the verb is unaccusative and the subject is a non-presuppositional indefinite, as in (63d), the indefinite IA/NumP remains in its first merge position, and the whole VP(/FP) moves to the Focus position.[45]

One residual case must be discussed in detail: in (63)c, the IA of the unaccusative verb is a definite noun phrase, hence it is a DP in our analysis. If the IA is a DP, by hypothesis it cannot remain in its first merge position, because it would be inaccessible to a φ-complete probe: hence, in (63)c the order VS is not a direct manifestation of the order derived through merge, as in cases corresponding to (62). Since the sentence is an all new sentence, the analysis cannot be the one in (61b), with the IA=DP in the specifier of VP-peripheral Focus, since this corresponds to the assignment of narrow focus to the sole DP.

Our proposal for this type of cases capitalizes on the presence of the F projection which contains the unaccusative VP, as illustrated in (48). Given our assumptions, the definite DP argument of unaccusatives has to vacate the IA position, which is incompatible with real arguments; the definite DP thus moves to the Spec/FP position; in this position it becomes accessible to Agree with the T probe which is complete of the person feature, the crucial feature for argumenthood; nominative is then accessible to this position for the DP. It will then be the whole FP to move to the Spec Focus position; the VS order is obtained through the subsequent movement of V to T in the familiar way. The derivation is illustrated in (66) for the relevant aspects.[46]

(66)

```
              TP
     pro       
          T[pers, num, Nom]   FocP (new info)
          V                FP
                     F[num,gen]    VP
                              <V>    IA/DP
```

---

[45] It is a prediction of the proposed analysis that in this case the the post-verbal weak indefinite subject cannot be a narrow focus (it is not a saturating IA). Indeed, this is the case, as the following contrasts in French clearly illustrate (we thank Fréderique Berthelot for her feedback)

    i.      Q: Qui est arrivé?
           A: (*) Il est arrivé trois filles.
    ii.     Q: Que c'est-il passé?
           A: Il est arrivé trois filles .

i.A. is clearly a grammatical sentence, but it is infelicitous as an answer to question i.Q. The same sentence is in fact not only grammatical but also felicitous as an all new answer to the *what happened* question in ii.Q. ii.A. is analyzed with the whole VP/FP in the specifier of the low Focus.

[46] The geometry of this derivation is then close to that of verb classes with an external argument, with the argument DP in a position higher than the merge position as an IA, sister of V.

In conclusion, a post-verbal unaccusative subject can originate through three different routes:

(i) as the indefinite IA of the unaccusative verb in its first merge position, cf. (48)/(62), in all new sentences (with the whole verb phrase in the specifier of the low new information Focus position) ;

(ii) as a narrow focus definite IA moved into the specifier of the low new information Focus position, with subsequent movement of V to T, as in (61b) (with IA first moved to Spec/F as in (iii) below);

(iii) as the definite IA of the unaccusative verb in an all-new sentence, moved into the Spec/F position, with the whole FP subsequently moved into the specifier of the low new information Focus position, and subsequent movement of V to T (66).

Only in the first case must the subject be a weak indefinite; according to our analysis, in this case it is actually not a real argument, but it is part of the predicate. Unaccusatives differ from other verb classes in having one peculiar and specific way to yield the order VS, namely (48)/(62); in this condition VS is the reflex of the first merge operation, and the familiar DE manifests itself.


## 5.1. *DE is a deep property of unaccusatives: Evidence from acquisition*

One feature of our analysis is worth emphasizing here: the weak indefinite i-subject of unaccusatives is the IA of the verb, which is merged first, and is tightly connected to it. Semantically, it is part of the predicate; syntactically, it meets the strictest local conditions in the relation with V, those holding for noun incorporation. In essence, then, it is fair to say that the order VS – with S a (weak) indefinite – overtly manifests the core of the unaccusative verb class. Interesting converging evidence for this conclusion comes from recent results from acquisition studies, which we briefly review here; for further detail the reader is referred to Belletti & Guasti (2015 chapter 7).

Cross-linguistic evidence has shown that children single out the unaccusative class from very early on in their development (Lorusso et al. 2005, Lorusso 2014; Friedmann 2007; Friedmann & Costa 2011). The evidence has characteristically been grounded on the fact that young children have an early mastery of the order VS with unaccusatives. For instance, the corpus study by Lorusso et al. (2005) has shown that Italian speaking young children (age range 18 – 36 months, from the CHILDES database) have the subject in the post-verbal position more often with unaccusatives (66%) than with other verb classes (28% with transitives, 21% with intransitives). Similar conclusions are drawn by Friedmann & Costa (2011) on the basis of Hebrew and European Portuguese data. These results are relevant for our discussion since they suggest a privileged use of the post-verbal position of the subject with unaccusatives with respect to other verb classes.

However, it is only until the recent work by Vernice & Guasti (2013) that appropriate use of the post-verbal subject with unaccusatives has been tested experimentally (through a repetition task) taking into consideration the definiteness of the post-verbal subject. In a similar vein, Lorusso (2014) has counted the occurrence of the order VS with unaccusatives according to definiteness in children's spontaneous productions (same corpora as above from the CHILDES database; see Lorusso 2014 for further details).

The results from these two studies are very interesting in the perspective of the present work as they both show, with distinct experimental methods (repetition and spontaneous production, respectively), early sensitiveness to the definiteness of the post-verbal subject with unaccusative verbs. In the experimental conditions created in Vernice & Guasti's study, children were able to provide identical repetitions of sentences with a post-verbal indefinite subject significantly more often when the verb was an unaccusative (52% vs. 25% with intransitives). Lorusso (2014) has shown that indefinite subjects are rarely found in children's spontaneous productions, and there is no difference according to verb class when the indefinite subject is pre-verbal, hence in the SV order (4% with unaccusative, 4% with intransitives; 1% with transitives); in contrast, when the indefinite subject is post-verbal, the difference is highly significant: 18% post-verbal indefinite subjects with unaccusatives vs 0 occurrences with both transitives and intransitives in the corpora analyzed.

These results sharply indicate that not only do children treat the unaccusative verb class differently from early on, but also that they are aware of the DE from the earliest ages. This is quite a remarkable conclusion: pre-theoretically, one could have imagined that something like DE was a complex property, hence a property likely to be mastered late in acquisition. In contrast, given the theoretical analysis we have endorsed here, the DE is a deep property of unaccusatives, in fact one of the defining properties of the verb class itself. Hence, the acquisition of such property should not be demanding in principle, assuming that argument structure and consequently verb-class distinctions are available from early on (Friedmann 2007, Gleitman 1990, a.o.). Indeed, this appears to be precisely the case. This in turn lend original new support in favor of the classical unaccusative hypothesis.

As a final remark, we note that converging evidence also comes from a different mode of acquisition: adult L2 acquisition of Italian (see Belletti & Guasti 2015 for detailed presentation and discussion). Experimental studies from Belletti & Leonini (2004) and Belletti, Bennati, Sorace (2007) have shown that adult L2 speakers of Italian (whose L1 is a non-null subject language like either German, or English or French) experience difficulty in the proper mastery of the VS order, with post-verbal S subject of new information (i.e. narrow focus as in examples (58)-(60), corresponding to structures (61)). In a spontaneous production task of *Storytelling*, however, the same L2 speakers were able to

adequately use this same linear order. Indeed, in telling a similar story,[47] the L2 speakers made use of an amount of post-verbal subjects which was remarkably similar to that of the native speakers acting as controls: 16% and 15% respectively. By looking at the actual occurrences of the VS structures the generalization is clear: the VS sentences of the L2 speakers were the same as those of the native controls as they were all describing the same scenes; in both groups the verbs used in telling the story were unaccusative verbs and the subject was indefinite (e.g. *manca un cesto* lit. 'is missing a basket').

Once again, whatever the correct account for the difficulty with the order VS experienced in L2 when the subject bears narrow new information focus (see the references cited above), no such difficulty affects sentences displaying the order VS when they contain an unaccusative verb and an indefinite post-verbal subject. To get to this order with a (weak) indefinite subject the route is the first merge one, i.e. structure (62).[48] This is a universal property, which need not be specifically learned in a second language.[49]


# 6. **Concluding remarks**


In this article we have revisited the well known definiteness effect which affects the postverbal noun phrase of existential sentences and more generally the internal argument of unaccusative verbs and transitive verbs in the passive voice when it remains in its First Merge position. We have argued that this position is unaccessible to a φ-complete probe, and therefore, the argument cannot be a full-fledged DP; it can only be a defective nominal projection, NumP, and it is syntactically licensed via Agree with a defective φ-probe which lacks the person feature, the crucial feature for argumenthood. The defective probe is located immediately above the projection of the lexical verb; the weak indefinite NumP is thus associated with Partitive Case through the Agree relation with the defective probe. We have shown that this licensing route is unavailable for the external argument of intransitive verbs and of active transitive verbs. Furthermore, we have argued that a NumP cannot be interpreted at the interface as a saturating argument; rather, it denotes a property and it is interpreted via Predicate Restriction.

Whenever the post-verbal subject is a full-fledged DP, a different licensing route is at play. We have adopted the proposal in Belletti (2004) that the post-verbal subject is licensed either by new information focus, or by being part of a new information vp/VP: in both cases, licensing involves a low Focus position in the periphery of the verb phrase.

The upshot of this analysis is that EA subjects can only be licensed via Focus, whereas IA subjects have an extra option, licensing *in situ* as a defective NumP; this asymmetry is supported in a new original way by evidence from first and second language acquisition, which suggests that the extra option is indeed a deep property of unaccusative verbs across languages.

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[47] Description of the same silent movie. See Belletti, Bennati, Sorace (2007) for details.

[48] With VP in the Spec of low focus, as the context is all new.

[49] The same groups of L2 speakers in both studies by Belletti & Leonini (2004) and Belletti, Bennati, Sorace (2007) correctly answered with the VS order to all the questions containing an existential structure present in the videos (five questions as e.g.: *Cosa c'era sul tavolo*? /What was there on the table?). This strongly suggests that they answered by resorting to the existential structure, which in both the L1 and the L2 has an indefinite subject in postverbal position. The existential structure may also have an overtly expressed "location", as in the case of *there* and *y* in English and French, parelleling *ci* in Italian; notice that no overt location is present in German *es gibt* construction. Easiness with the existential sentences, irrespective of the precise realization of the construction in the L1, suggests that the existential structure shares deep properties across languages. We speculate that (a version of) structure (35) may reflect (some of ) these properties.

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