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# *Stripping vs VP-Ellipsis in Catalan*

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## Stripping vs VP-Ellipsis in Catalan

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**Résumé :** Dans la tradition de la Grammaire générative, plusieurs auteurs rendent compte de l'impossibilité de l'Ellipse du groupe verbal (désormais VPE) pour les langues romanes, en s'appuyant sur l'hypothèse que VPE n'est pas autorisée par la tête de INFL, comme c'est le cas en anglais. Il a été souligné qu'en français, par exemple, VPE correspond au *Stripping*. Récemment, certains argumentent que les langues romanes exemplifient le phénomène nommé TP-Ellipsis ou TP-Deletion. Dans cet article, nous montrerons qu'en catalan, trois constructions étroitement liées : Stripping, constructions négativo-contrastives et TP-Ellipsis, sont indépendantes et clairement spécifiées. Cette évidence découle de l'analyse de la *structure informationnelle*. Nous soutiendrons qu'on est devant deux processus interprétatifs différents. D'une part, Stripping et les constructions négativo-contrastives se trouvent sous le contrôle du focus; le premier par le biais d'expressions focalisées parallèles, et les secondes au moyen d'expressions focales contrastives. D'autre part, TP-Ellipsis n'est pas restreinte par la structure informationnelle, bien que la notion de focus, peut lever des ambiguïtés associées à la proposition source dans certains cas. Enfin, nous proposons une analyse unifiée pour les *marqueurs de polarité* en tant que pro-formes; expressions dont la fonction est de sélectionner l'antécédent approprié dans les constructions ici analysées.

**Mots-clés :** Linguistique informatique, logique, ellipse du groupe verbal, stripping, focus

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## Stripping vs VP-Ellipsis in Catalan

**Abstract:** In the tradition of Generative Grammar, several authors have explained the impossibility of VP-Ellipsis for Romance Languages following the hypothesis that VP-Ellipsis in these languages is not licensed by the head of INFL as it is in English. It has been pointed out that in French, for instance, VP-Ellipsis is expressed by *Stripping*. The idea that Romance languages show TP-Ellipsis or TP-Deletion has emerged recently. In this paper we will demonstrate that concerning Catalan, three related constructions, namely Stripping, negative-contrasting constructions and TP-Ellipsis are independent and clearly specified. This evidence will come from the analysis of the so-called *information packaging*. We will argue that there are two different interpretative processes. On the one hand, Stripping and negative-contrasting constructions are under the control of focus by means of *parallel foci* in the former, and *contrastive foci* in the latter. On the other hand, TP-Ellipsis constructions are not constrained by the information packaging, although this notion might help to disambiguate the target in certain cases. Finally we propose a unified analysis of the so-called *polarity particles* as *proforms*, that is expressions whose function is to select the appropriate antecedent in the cases we are concerned here.

**Key-words:** Computational linguistics, logic, VP-Ellipsis, stripping, focus

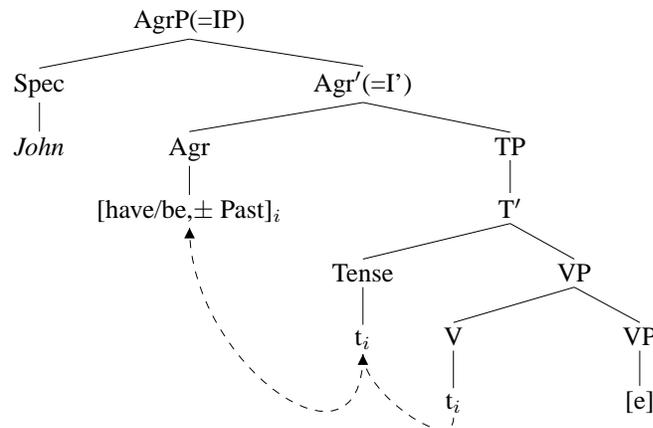
## 1 The Problem

It has been generally assumed that Romance Languages do not have equivalent VP-Ellipsis (VPE) in English. One of the main assumptions is that INFL has to be successfully filled out by the relevant features (Tense, AGR and V) in order to identify an empty VP (Chao 1987, Lobeck, 1995, Zagana 1988) :

Licencing VPE :  $[_{VP} e]$  is licensed by the head INFL<sup>1</sup>

According to this hypothesis, the examples in (1a,b) will be represented syntactically as in (1c)(cf. Lobeck, 1995 :145) :

- (1) a. Mary is leaving and John is  $[_{VP} e]$  too  
 b. Mary hasn't left, and John has  $[_{VP} e]$   
 c.



Intuitively this means that only auxiliary verbs overtly raise from V or *tense* to Agr. Since the auxiliary shares the features of the VP of its antecedent, the recovery of the missing content for the ellipsis site is permitted. The same reasoning might be used to explain the ungrammaticalities in French, Spanish and Catalan, illustrated in the following examples :

- (2) a. \*Claudine est une bonne étudiante, et Marie est  $[_{VP} e]$  aussi  
*Claudine is a good student, and Marie is too*  
 b. \*Juan ha salido y Pablo ha  $[_{VP} e]$  también  
*John has left, and Pablo has too*  
 c. \*Bach és difícil d'interpretar, i Mozart és  $[_{VP} e]$  també  
*Bach is hard to play, and Mozart is too*

<sup>1</sup>In Chomsky (1986), the node INFL is called AgrP.

In these languages the VP complements cannot remain empty. In French, for instance, both auxiliary and main verbs overtly raise from V to *Tense* and *Agr*, a feature which English does not have. Moreover, it is assumed (Chomsky, 1991) that in French feature checking occurs prior to or at SS level. At that level then the impossibility of VPE in French is due to the fact that INFL cannot be successfully filled out by the relevant features of [ $\pm$  past], which are unavailable in order to identify an empty VP. Zagona (1982, 1988) explains the impossibility of VPE in Spanish in terms of the *Empty Category Principle* (ECP). According to Zagona, INFL is a lexical governor for the VP, because [+ V] extends to INFL the governing properties of verbs. In Spanish, however, INFL is [- V], which lacks the crucial feature permitting this node to be a proper governing category.

Chao (1987) claims that in French,

...there is no straightforward equivalent to the English VPE and (do so) constructions. These constructions are expressed by means of either Stripping or 'do it' constructions (p.187).

According to Hankamer and Sag (1976 :409) *Stripping* is a rule that deletes everything in a clause under identity with corresponding parts of the preceding clause (the *correlate*), except for one constituent (the *remnant*). We can express this assumption as follows :

Condition for Stripping :

Structural parallelism between the *correlate* and the *remnant*

The examples below illustrate the Stripping phenomena :

- (3) a. John gave presents to John, but not [e] to Geoff<sup>2</sup>  
 b. Jane loves to study rocks, and [e] geography too  
 c. Jane loves to study rocks, and John [e] too

Nevertheless, when we delete the auxiliary in (2) the constructions become grammatical. For illustrative purposes compare (2c) and (1a) below. (1b) and (1c) are other Catalan realizations closely related to (1a).

- (4) a. Bach és difícil d'interpretar, i Mozart també  
*Bach is hard to play, and Mozart (is) too*  
 b. La Maria va anar als USA, però el seu germà no  
*Mary went to USA, but his brother not (didn't)*  
 c. En Pere no vindrà a sopar, i en Carles tampoc  
*Peter will come to diner and Carles (will not) neither*

The examples in (1) show that obviously there is some missing material in the second conjunct. The Tense feature, which is carried by the auxiliary in English (cf. examples in 1), has been deleted, which is why these examples have recently emerged a case of TP-deletion or TP-Ellipsis instead of VP-Ellipsis (Laka, 1990) as illustrated below :

$$[AgrP \dots \underbrace{[TP \dots [VP \dots]]}_{[e]}]$$

<sup>2</sup>Examples from Lobeck 1995 :27

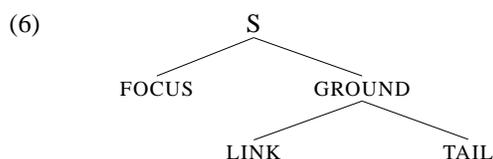
Now the question is : are examples in (1) structural realizations of *Stripping* as pointed out in Chao (1987) or TP-ellipsis or TP-Deletion as noticed by Laka (1990)? In order to find an answer we first need to be able to distinguish the syntactic constraints on both constructions. We will demonstrate that both linguistic phenomena are clearly distinguished in Catalan. Hence the question that matters is not whether in Catalan we are dealing with VPE or *Stripping*, but rather what kind of factors distinguish the two phenomena. We will see that there is not a single set of examples but two different subsets of syntactic constructions. The source of the confusion is that the expressions *sí, no, també, tampoc* (yes, no, also/too, neither) (henceforth *polarity particles* (Brucart, 1987; Busquets 1997, 1999)) are implicated in three different types of phenomena : *Stripping* (cf. 1a), *negative-contrasting (or replacive) constructions* (Drübig, 1994) (cf. 1b) and *TP-Ellipsis* (cf. 1c).

- (5)
- a. En Max va donar flors a la Rosa, i també a la Zelda  
*Max gave flowers to Rosa, and also to Zelda*
  - b. Mozart va néixer a Salzburg, no a Vienna  
*Mozart was born in Salzburg, not in Vienna*
  - c. La Maria no sap anglès, però tinc un amic que sí  
*Mary doesn't speak english, but I have a friend who (does) yes*

We will show that (1a) and (1b) are under the control of the realization of *information packaging* (Valldví, 1990) whereas (1c) is not, although the notion of *focus* might help to desambiguate the interpretation of the ellipsis in certain cases where several VP's are available as antecedent for the target<sup>3</sup>. In order to do this we will briefly introduce some notions about information packaging in Catalan.

## 2 Some notes on information packaging in Catalan

Catalan is a VOS null-subject language, and this means that preverbal subjects are oblique-adjuncts, and they need not appear overtly<sup>4</sup>. Valldví (1992) proposes a trinomial partition of information structure as given in (6) :



This two-level binomial structure is crucial in explaining information packaging in Catalan. According to Valldví (1990), all non-focal elements should be left out of IP. Links left-dislocate out of the clause ; tails right-dislocate out of the clause, leaving a clitic, and only the focal part remains in the core clause (i.e., in IP). Valldví's approach, -assuming the non-elidability of the focus, optionality of the ground, and sentence-initialness of the link- establishes four realizations for a given

<sup>3</sup>We will follow the tradition by calling *correlate* and *remnant* the Stripping conjuncts and *source* and *target* the antecedent clause and the elliptical clause respectively for TP-Ellipsis.

<sup>4</sup>VOS order is defended in Rosselló (1986), Bonet and Solà (1986), Solà (1992) to name just a few.

sentence : link-focus (2a), link-focus-tail (2b), all-focus (2c) and focus-tail (2d). I will use SMALL CAPITALS to indicate the focus of utterance, [ $F \alpha$ ] the focused constituent and # indicates that the utterance is inappropriate in the given context.

- (7)
- a. [ $Link$  el president<sub>1</sub>] [ $Focus$  odia el joc de porcellana de DELFT t<sub>1</sub>]  
The president [ $F$  hates the Delft CHINA SET]
  - b. [ $Link$  El president<sub>1</sub>] [ $Focus$  l'<sub>2</sub> ODIA t<sub>2</sub> t<sub>1</sub>],[ $Tail$  el joc de porcellana de Delft<sub>2</sub>]  
The president [ $F$  HATES] the Delft china set
  - c. [ $Focus$  Odia el joc de porcellana de DELFT *pro*]  
[ $F$  (He) hates the Delft CHINA SET]
  - d. [ $Focus$  l'<sub>2</sub> ODIA t<sub>2</sub> *pro*,] [ $Tail$  el joc de porcellana de Delft<sub>2</sub>]  
[ $F$  (He) HATES] the Delft china set

For the purposes of this paper we will need to distinguish two different syntactic environments : *Left-detachment* and *Focus-preposing* (Focus topicalization). Both look similar because both involve movement to the left, but a relevant difference between them is that whereas focus-preposed elements are intonationally prominent, left-detached material is not, as it is illustrated in (8) :

- (8)
- a. [ $IP$  XP<sub>i</sub> [ $IP$  ... [ $VP$  clitic<sub>i</sub> V ... pro<sub>i</sub>]]]      XP<sub>i</sub> NOT FOCUSED
  - b. [ $Focus-Preposed$  XP<sub>i</sub> [ $IP$  [ $IP$  ... t<sub>i</sub> ...]]]      XP<sub>i</sub> FOCUSED

Both configurations are illustrated below :

- (9)
- a. [A la Priscilla<sub>i</sub>, [l'Elvis [li<sub>i</sub> va dedicar una CANÇÓ pro<sub>i</sub>]]]  
To the Priscilla, the Elvis cl. PAST-3s-dedicate a song  
*To Priscilla, Elvis dedicated a song*
  - b. [L'ELVIS,]<sub>i</sub> va dedicar una cançó a la Priscilla t<sub>i</sub>  
The Elvis PAST-3s-dedicate a song to the Priscilla  
*Elvis dedicated a song to Priscilla*

Moreover, as is pointed out in Vallduví (1993 :14), the difference between left-detachment and right-detachment becomes evident in contrastive contexts.

- (10)
- a. On són el coberts ?  
'Where's the flatware ?'
  - b. Les forquilles són a l'armari, però...  
'The forks are in the cupboard, but...'  
– ...els ganivets<sub>1</sub> els<sub>1</sub> vaig ficar t<sub>1</sub> al CALAIX.  
the knives obj 1s-pst-put in the drawer  
– ...#vaig ficar els ganivets al CALAIX  
– ...# els<sub>1</sub> vaig ficar t<sub>1</sub> al CALAIX, els ganivets<sub>1</sub>.  
'...the knives I put in the drawer'

Only links are compatible with contrastive contexts as illustrated in (ab) above. That is, a left-detachment of the link (*els ganivets*) is required in order to the context to be felicitous. This is an interesting test though in order to reveal where, in syntax, is placed the deleted material which has to be recovered from the context for the elided version of (a), ([e] indicates the position of the deleted material).

- (11) a. On són el coberts ?  
‘Where’s the flatware ?’
- b. Les forquilles són a l’armari, però  
– #...[e] al CALAIX els ganivets<sub>1</sub>  
– #...els ganivets<sub>1</sub> al CALAIX [e]  
– ...els ganivets<sub>1</sub> [e] al CALAIX  
‘The forks are in the cupboard, but the knives in the drawer’

We will see that these two configurations will become useful when considering the constructions we are interested in this paper. More specifically, Stripping constructions in English might be translated in Catalan according to either Focus-posing or left-detachment.

### 3 What is deleted and when ?

As we have already said, we are dealing with three kinds of constructions in which the *polarity particles* occur, namely, Negative-contrasting constructions, Stripping and TP-Ellipsis. We will show how these constructions are licensed in Catalan in contrast to English. In what follows, we will assume Rooth’s (1992) alternative semantics in that the focused expression constructs a set of alternatives or focus semantic value of the sentence containing it ( $[[\phi]]^f$ ). The alternatives are the maximal set  $C$  of ordinary semantic values ( $[[\phi]]^0$ )<sup>5</sup>. The basic idea is illustrated below.

- (13) a.  $[[\text{John likes } [\text{Mary}]_F]]^f = \{\lambda x \text{ like}(j, x) \mid x \in E\}$  Where  $E$  is the domain of individuals
- b.  $C =$  the set of propositions of the form ‘John likes  $x$ ’
- c.  $\{\text{John likes Mary, John likes Sylvia, John likes Annie...}\}$

<sup>5</sup>More specifically, Rooth (1985, 1992) defines a recursive focus-sensitive function as indicated below :

- (12) a.  $[[\alpha]]_F = \{[[\alpha]]\}$   
b.  $[[\alpha_F]]_F = \{u \in D_\tau : \tau = \text{type}(\alpha)\}$   
c.  $[[[\alpha \beta]]_F] = \{u \mid \exists a \in [[\alpha]] \wedge \exists b \in [[\beta]] \wedge u = a(b) \vee u = b(a)\}$

In the first case, since  $\alpha$  is not focused, it does not introduce alternatives (cf. aa). In such a case, its focus semantic value is the unit set of its ordinary semantic value. However, if  $\alpha$  is F-marked it does introduce alternatives. The alternative set in this case is the domain corresponding to  $\alpha$ ’s logical type (the set of possible denotations of type  $\alpha$ ) or a contextually restricted subset (cf. ab). The third definition corresponds to all well-formed function-argument combinations.

### 3.1 Negative-contrasting constructions

Consider the following sentences [from Drübig, 1994] :

- (14) a. Jonh doesn't (only) write books about syntax, but (also) about semantics  
 b. John doesn't (only) love Mary, but (also) Anne

According to Drübig (1994), the sentence following *not* must be interpreted as a contrastive focus. That is, as a focus which is related to a closed set of context-construable alternatives. The correlation 'about syntax, but about semantics' due to the presence of contrastive particle *but* requires a negative antecedent and must be contained in the scopal domain of negation. In contrast to Reinhart (1991), who proposes the IP-adjunction for the replacive negation, Drübig suggests that they occupy the SPEC-position of an appropriate functional projection called *Polarity Phrase*. I'll return later to syntactic representation in § 4.

Let us now take a closer look at the constructions below :

- (15) a. La Marta [<sub>VP</sub> va venir al cinema], però en Miquel no [<sub>VP</sub> e]  
*Marta came to the movies, but Miquel not*  
 b. Va venir al cinema [la MARTA], no [EN MIQUEL]  
*it came PERE to the movies, not MIQUEL*  
 c. Va venir al cinema [la MARTA], però no [EN MIQUEL]  
*it came PERE to the movies, but not MIQUEL*

In (aa) we are dealing with a case of TP-ellipsis. In (ab) with a negative-contrasting construction, and finally in (ac) with Stripping. Let's discuss first the differences between (aa) and (ab). As it has been pointed out (Bosque, 1984, Brucart, 1987) that the second conjunct in (aa) is a sentence, whereas in (ab) it is not. The fact which proves the sentence character of the target in (aa) is that it cannot appear within the source (cf.aa), whereas the remnant in (ab) for instance, can appear following its correlate (cf. ab) :

- (16) a. \*La Marta, però en Miquel no, ha vingut al cinema  
*Marta, but Miquel not, came to the movies*  
 b. La Marta, no en Miquel, va venir al cinema  
*Marta, not Miquel, came to the movies*

Moreover Bosque (1984) gives two more arguments to prove the existence of an elliptical process in (aa) but not in (ab). Consider the following example :

- (17) En Joan va anar a Madrid, i la Maria [e] a Barcelona, (i) no en Joan a Barcelona i la Maria a Madrid  
*Joan went to Madrid, and Maria to Barcelona, (and) not Joan to Barcelona and Maria to Madrid*

In (3.1) we have one ellipsis, and not three elliptical processes (Bosque, 1984 :185). Finally, from speech act theory, the non-derivational character of examples like (ab) is confirmed.

- (18) a. Et prometo que ajudaré la Maria, i no ajudaré el Pere  
*I promise you I'll help Maria, and I won't help Maria*  
 b. Et prometo que ajudaré la Maria, no el Pere  
*I promise you I'll help Maria, not Pere*

Clearly in (3.1a) we are promising twice, whereas in (3.1b) we accomplish the act of promising once. What about the differences between (ab) and (ac)? As Drübig (1994) shows it in the examples below, when the conjunction *but* occurs, they are interpreted as Stripping. On the other hand, when it does not, they are interpreted as negative-contrasting constructions (from Drübig, 1994 :29, f.40) :

- (19) a. *Mozart visited Vienna, (but) not Moscow*  
 b. *Mozart was born in Salzburg, (\*but) not in Vienna*

It is important to note that in Catalan there is a distinction between the 'adversative' *sinó* (but), a phrasal conjunction, and *però* (but) which is the sentential conjunction. The examples with sentential conjunction are Stripping, while those without or with a phrasal conjunction are negative-contrasting. Notice moreover that the correction in negative-contrasting construction has a semantic property which is reflected in syntax. That is, these structures are appropriate if the second conjunct is the focus-counterpart with respect to the first conjunct (Reinhart, 1991, Drübig, 1994), otherwise the continuation is pragmatically infelicitous.

- (20) a. en Joan no llegeix NOVEL.LES, sinó POEMES/# en Pere<sup>6</sup>  
*Joan doesn't read novels, but poems /# Pere*  
 b. en Joan llegeix NOVEL.LES, no POEMES/# compra  
*Joan read novels, not poems/# buy*  
 c. en Joan llegeix NOVEL.LES, però no POEMES / però poemes no  
*Joan read novels, but not poems / but poems not*

We have explored the differences which characterize negative-contrasting constructions with respect to TP-ellipsis and Stripping. Now we will look at the differences between TP-ellipsis and Stripping.

Lobeck (1995) outlines some fundamental properties of Stripping. Using these properties, I will give a Catalan version in order to demonstrate that in Catalan this phenomenon is constrained by the realization of focus. Next I will use Reinhart's data to show that licensing and identification of Stripping and TP-ellipsis, even though they might appear to be a related phenomenon in Catalan, they are distinct and clearly defined. I will conclude this section with some important issues regarding the possibilities of TP-ellipsis in Catalan in contrast to Stripping.

<sup>6</sup>In Hernanz & Brucart (1987) it is assumed that in examples like (20a) the correlate and the remnant constitute a single constituent at LF which is under the scope of the negation :

$[O' [COMP \text{ no}_i [NP \text{ novel.les, sinó poemes}]_j] [\text{en Joan llegeix } t_j]]$ .

### 3.2 Major properties of Stripping

The fundamental properties of Stripping in English are the following :

1. Unlike VP-ellipsis, Stripping is not allowed in subordinate clauses.
  - (1) (a) \*John studied rocks even though not Jane
  - (b) \*En Joan estudiava les roques tot i que no la Jane
  - (c) \*The critics praised your book, and someone told me that the poem too
  - (d) ??Els crítics van lloar el teu llibre, i algú em va dir que el poema també
2. Like VP-ellipsis, Stripping can appear across utterances boundaries.
  - (21) a. A : I heard Jane likes to study rocks  
*He sentit a dir que a la Jane li agrada estudiar LES ROQUES*
  - b. B : Yeah, and geography too  
*Sí, i LA GEOGRAFIA també*
  - c. Unlike VP-ellipsis, Stripping does not always involve a full phrasal constituent.
  - d. Jane knows lots of people who play the piano, but not very well / \*but I know a man who not very well  
*La Jane coneix molta gent que toca el piano, però no massa bé / \*però jo en conec un que no massa bé.*
3. Stripping obeys Complex NP Constraint.
  - (22) This is the place where we grow flowers, and sometimes herbs / \* and that is the place where sometimes herbs  
*Aquí és on cultivem les flors, i algunes vegades herbes / \* i aquí és on algunes vegades cultivem herbes*
4. Unlike VP-ellipsis, Stripping does not appear to conform to the *backwards anaphora constraint* (BAC) (i.e., the remnant cannot precede the correlate).
  - (23) \*Although not Jane, John studied rocks  
*\*Tot i que no la Jane, en John estudiava les roques*

According to these criteria, we might say that Stripping is also well-delimited and structurally constrained in Catalan. A summary is given in table 1 below.

We will argue that Stripping in Catalan is constrained by the realization of information packaging. Since focus in Catalan, contrary to English, is attained by means of syntactic movements, we might expect that in order to match Catalan and English Stripping constructions, some syntactic operations are necessary. Let's illustrate this with a simple example :

	SUBORDINATE CLAUSES	UTTERANCES BOUNDARIES	FULL PHRASAL CONSTITUENTS	OBEYS CNPC	CONFORMS TO THE BAC
ENGLISH	N	Y	N	Y	N
CATALAN	N/??	Y	N	Y	N

TAB. 1 – Stripping in English and Catalan

- (24)
- a. (a)John studied rocks, but not Jane
  - b. # En Joan estudiava LES ROQUES, però no la Jane
  - c. Les roques<sub>i</sub> les<sub>i</sub> estudiava t<sub>i</sub> EN JOAN, però no la Jane  
‘The rocks cl-3s-PAST-study the Joan, but not the Jane’
  - d. [<sub>F</sub> EN JOAN<sub>i</sub>], estudiava les roques t<sub>i</sub>, però no la Jane  
‘The Joan 3s-PAST-study the rocks, but not the Jane’

As we can see there are two different strategies to obtain the Catalan version of the English construction (23); either by means of left-detachment (23b) or by focus-preposed (23c). In both cases, the remnant has to be an alternative to the focus expression in the correlate. Now, following Rooth’s alternative semantics sketched above, we can express this as follows :

- (25)
- a.  $\llbracket \text{Les roques}_i \text{ les}_i \text{ estudiava } t_i \text{ [EN JOAN]}_F \rrbracket^F = \{ \lambda x \mid \text{estudiar}(x,r) \mid x \in E \}$
  - b.  $C$  = the set of propositions of the form ‘les roques les estudiava x’
  - c.  $C \subseteq \llbracket \text{les roques les estudiava en Joan} \rrbracket^F$

If the remnant does not have the same logical type as the focus in the correlate the result is infelicitous as in (cf.aa).<sup>7</sup>

In the next section I will provide support for the claim that Stripping in Catalan must follow the constraints imposed by the information packaging. In order to do so, I will take Reinhart’s examples with their corresponding version in Catalan.

### 3.3 Reinhart’s Bare-Argument Conjunctions BA

Reinhart (1991) analyses the so-called *Elliptic Conjunctions*, a set which includes *Exception Conjunctions*, *Comparative Ellipsis*, and *Bare-Argument Conjunctions*, the latter subset being what we are referring to in this paper, since they are Stripping-constructions.

<sup>7</sup>This fact has been also pointed out by Fox (1999) and captured by means of the parallelism requirement as a consequence of focus theory.

Direct parallelism (Fox, 1999)

Every sentence S, requires that the discourse will contain an antecedent sentence, A, which belongs to the focus value of S (A ∈ F(s))

- (26) a. Max gave Rosa flowers, and Zelda too
- b. En Max va donar flors a la Rosa, i la Zelda també [e]  
The Max PAST-3s-give flowers to the Rosa and the Zelda too  
[e]= Zelda va donar flors a la Rosa (= Zelda gave flowers to Rosa)  
[e]= \*Max va donar flors a la Zelda (= Max gave flowers to Zelda)
- c. En Max va donar flors A LA ROSA, i a la Zelda també/ i també a la Zelda  
the Max PAST-3s-give flowers to the Rosa, and to the Zelda too/and also to the Zelda  
*Max gave flowers to Rosa and to Zelda too/and also to Zelda*

Notice that whereas (ba) it is the VP that is deleted, (bb) corresponds to the Stripping construction in which the remnant and its correlate have *parallel foci*. That is, (bb) is felicitous because the correlate constructs a set of alternatives, C, and the value of C in such a case is the following :

- (27) a.  $\llbracket \text{en Max va donar flors [A LA ROSA]}_F \rrbracket^F = \{ \lambda x \mid \text{donar}(x,y,r) \mid r \in E \}$
- b. C = the set of propositions of the form ‘donar flors a x’

Viewing this example we might believe that the position of the *polarity particle* determines the category of the remnants. Nevertheless, switching the syntactic position of *also/too* is not a sufficient condition to ensure coherence (structural parallelism between focus expressions). Moreover, it is not possible to change the discourse expectations or *contextual alternatives* (Rooth, 1985) created by the focus in the correlate :

- (28) a. #en Max va donar flors A LA ROSA, i BOMBONS també  
the Max PAST-3s-give flowers to the Rosa, and candies too  
*Max gave flowers to ROSA, and CANDIES too*
- b. #en Max va donar flors A LA ROSA, i també BOMBONS  
the Max PAST-3s-give flowers to the Rosa, and also candies  
*Max gave flowers to ROSA, and also CANDIES*

Consider another example from Reinhart (1991) :

- (29) a. Ben talked to Linda about his problems, and Rosa too
- b. (a)en Ben va parlar a la Linda DELS SEUS PROBLEMES, i la Rosa també [e]  
the Ben PAST-3s-talk to the Linda PL-of his problems, and the Rosa too [e]  
[e] = Rosa va parlar a la Linda dels seus problemes (Rosa talked to Linda about his/her problems)  
[e] = \*Ben va parlar a la Rosa dels seus problemes (Ben talked to Rosa about his problems)
- c. \*en Ben va parlar a la Rosa dels seus problemes, i a la Linda també/i també a la Linda  
the Ben PAST-3s-talk to the Rosa PL-of his problems, and to the Rosa too/and also to the Rosa  
*Ben talked to Rosa about his problems, and to Linda too/and also to Linda*

(ba) is a TP-Ellipsis construction. This construction is not constrained by the focused expression (*dels seus problemes*), and we reconstruct the whole VP in the target. If our hypothesis is correct, to obtain the Catalan version of (a) we need to make some syntactic movements in order to focalize the correlate (*a la Rosa*) and license its parallel focus in the remnant (*a la Linda*) :

- (30) en Ben [<sub>F</sub> en<sub>i</sub> va parlar A LA LINDA], dels seus problemes, i a la Rosa també/ i també a la Rosa/(però) no a la Maria/(però) a la Maria no  
 the Ben obj-clitic PAST-3s-talk to the Linda, PL-of his problems, and to the Rosa too/and also to the Rosa/(but) not to the Maria/(but) to the Maria not

Finally, consider the following examples, where in English there is a reading according to which the subject of the correlate is identical to the remnant.

- (31) a. Max gave Mary a rose, and Sonya too (= Max gave Sonya a rose too)  
 b. en Max va donar una rosa a la Maria, i la Sonya també [e]  
 the Max PAST-3s-give a rose to the Maria, and the Sonya too  
 [e] = Sonya va donar una rosa a la Maria (= Sonya gave a rose to Maria too)  
 [e] = \*Max va donar una rosa a la Sonya (= Max gave a rose to the Sonya too)  
 c. en Max va donar una rosa A LA MARIA, i a la Sonya també/i també a la Sonia  
 the Max PAST-3s-give a rose to the Maria, and to the Sonya too/and also to the Sonia

This set of examples illustrates how two different interpretative processes hold, namely, Stripping and negative-contrasting constructions on the one hand, and TP-Ellipsis on the other hand. In the former cases we expect the remnant to be a focus counterpart of the focus expression in the correlate. However, in the later the target can be reconstructed independently from the focus expression in the target.

Zagona (1982, 1988) observed that *polarity particles* can have scope over NP, VP or S, as the following examples illustrate (Zagona's examples are in Spanish but we give their translation in Catalan) :

- (32) a. En Joan no llegeix novel·les, però poemes sí.  
 the Joan no 3s-read novels, but poems yes  
*Joan doesn't read novels, but he does poems*  
 b. En Pau no parla anglès, però francès sí.  
 the Pau no 3s-read english, but french yes  
*Pau doesn't speak English, but he does French*  
 c. El Rafel el va convidar al cinema, però a sopar no.  
 the Rafel to-him [+ Perf] INF-invite to movies, but to dinner no  
*Rafel invited him to the movies, but he didn't to dinner*

We will see that these constructions pattern exactly like Reinhart's BA-Ellipsis. Hence, they are closely related to associated focus phrases with parallel foci. Consider the following asymmetries :

- (33) a. En Joan no llegeix [<sub>F</sub> NOVEL.LES], sinó poemes/però sí poemes/però poemes sí/#sinó en Pere/#però sí en Pere.  
*Joan doesn't read novels, but poems/but yes poems/but poems yes/\*but Pere/ \*but yes Pere*
- b. En Joan [<sub>F</sub> no llegeix NOVEL.LES], però en Pere sí/però poemes sí.  
*Joan doesn't read novels, but Pere yes/but yes poems*

As expected, syntactic configuration is causally responsible for the alternative-set in certain contexts. The ungrammaticalities of some continuations in the remnant result from the unexpected expression, which is not an alternative to the focus of the correlate. The situation is quite different from the continuation in example (ab) above, where it is possible to delete both the subject and the object NP. If the polarity particles have scope over the subject NPs, why do the ungrammaticalities in (aa) occur? This provides yet another argument concerning the categorial status of the remnants in Stripping constructions. The remnant of the Stripping does not have the category S (Reinhart, 1991; Drübig, 1994). In the examples where the VP is missing, the target is indeed a sentence. Finally consider the following examples :

- (34) a. En Joan [<sub>F</sub> no ha guanyat mai UN CONCURS], en canvi l'Anna sí (\*en canvi sí l'Anna), i n'està molt orgullosa.  
 the Joan no 3s-have won never a competition, in contrast the Anna yes, and of-it-3s-be so proud  
*Joan has never won a competition, but Anna has (\*although yes Anna), and she is very proud of it*
- b. Als crítics [<sub>F</sub> els agradà LA TEVA NOVEL.LA], i algu m'ha dit que al públic també (? també al públic).  
 to-the critics OBJ-them PAST-like the your novel, and someone to-me said that to-the public too  
*to the critics your novel is pleasing, and someone told me that to the public too (? also to the public)*

Compare (1d) the Stripping version and (ab) its TP-Ellipsis counterpart. As we have already said (cf. § 3.2.), Stripping fails in certain subordinate clauses. However this possibility exists for TP-Ellipsis cases, entailing that we are dealing with two different interpretative mechanisms. The basic idea we intend to argue for is a generalization of focus-ground partition : Stripping and negative-contrasting constructions are under the control of focus, either by parallel foci or contrasting focus. If the analysis of Stripping in Catalan is correct we can express the condition for Stripping in the following way :

Condition for Stripping in Catalan

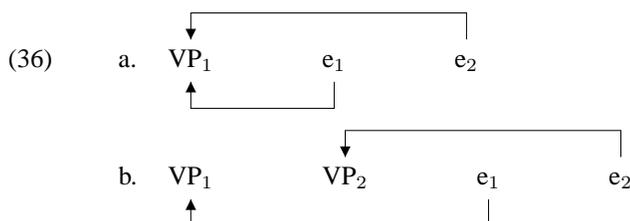
Structural parallelism between the focused expression in the *correlate* and its focus counterpart in the *remnant*.

The focused expression constructs a set of alternatives *C*, if the remnant does not belong to *C*, then the sentence is infelicitous. By contrast, the position of focus in TP-Ellipsis is not a necessary condition in order to recover the missing VP. We can list three strong arguments in favor of making a distinction between Stripping and TP-Ellipsis in Catalan :

1. TP-Ellipsis can, in certain cases, appear in subordinate clauses (cf.ab)
2. Under certain constraints, TP-Ellipsis allows for cataphoric references violating the BAC, as illustrated in (aa) below. As pointed out in Bosque (1984), some kind of verbs have a blocking effect on such constructions. Factive verbs do not permit cataphoric ellipsis (cf. ab), whereas propositional verbs do<sup>8</sup> :

- (35) a. En Pau diu que no [e<sub>i</sub>], però jo dic que la Maria [va visitar la seva mare]<sub>i</sub>  
*Pau says that (he did) not, but I say that Maria visited her mother*
- b. \*En Pau sap que no [e<sub>i</sub>], però jo dic que la Maria [va visitar la seva mare]<sub>i</sub>  
*Pau knows that (he did) not, but I say that Maria visited her mother*

3. Unlike Stripping, in some TP-Ellipsis cases, the polarity particles are able to find their appropriate antecedent in the discourse<sup>9</sup>. In (ba) for instance, two ellipsis sites are linked to the same target. In (bb) the first target has to skip across the intervening VP<sub>2</sub> before reaching its appropriate source (VP<sub>1</sub>) :



The following examples illustrate both patterns :

- (37) a. Em sembla que el jersei que et vaig comprar [t'agradarà]<sub>1</sub>, si no [e<sub>1</sub>] el pots retornar, però estic segur que sí [e<sub>2</sub>]  
 to-me seem that the sweater that to-you [+ Perf]-1s INF-buy to-you-FUT-3s-like, if no it can give-back, but 1s-be sure that yes  
*It seems to me you'll like the sweater I bought you. If you don't you can give it back, but I'm sure you will*
- b. Si en Pere [em diu que puc venir]<sub>1</sub>, [vindré]<sub>2</sub>, però si no [e<sub>1</sub>], no [e<sub>2</sub>]  
 If the Pere to-me-say-3s that can-1s INF-come, FUT-3s-come, but if not, not  
*If Pere tells me that I can come, I'll come, but if he doesn't I won't*

<sup>8</sup>This is an observation which has also been raised in the discussion of NPI-licencing and Association with Focus (AwF). Complements of propositional verbs are transparent to AwF, whereas complements of factive verbs are opaque. I will not go into a deep analysis of this, but see Drübrig (1994) for AwF and factive island interactions.

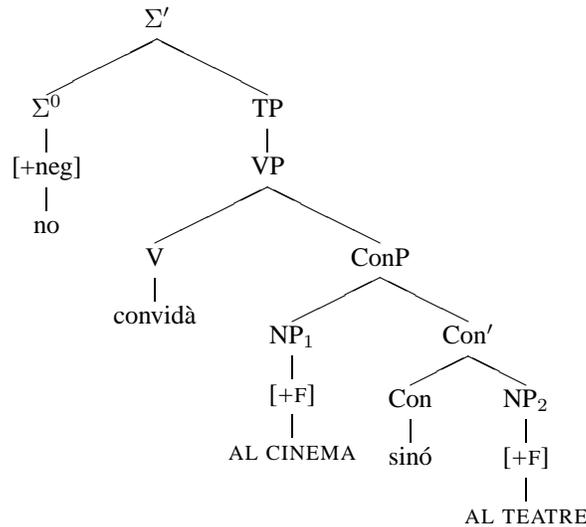
<sup>9</sup>Crossing and nested dependencies in English have been discussed in Klein & Stainton-Ellis (1989). Even though Catalan does not match with English patterns, these examples show that as in English the strategy *Resolve Nearest Antecedent* is also inadequate for Catalan TP-Ellipsis.

## 4 Syntactic Representation

Some authors have argued that focus is licensed in [SPEC CP], while others have assumed that there is a special functional projection, Focus Phrase (FP) which is different from CP. Others however suggest that focus ranks below CP but above IP. Culicover (1991), Laka (1990) and Drübig (1994) have proposed that the head of FP is the sentential polarity element. Drübig (1994) postulates two different  $\Sigma P$  (*Polarity Phrase*), one between VP and IP and one between IP and CP. Following this line of analysis, we also posit a functional projection, Polarity Phrase (i.e.,  $\Sigma P$ ) between VP and IP, different from one between IP and CP, which we will assume for elliptical constructions, in which,  $\Sigma^0$  functions as a scope marker at SS, and as Drübig points out, this head is always [+F]. For our negative-contrasting constructions, such as the following example :

- (38) En Joan [<sub>F</sub> no em convidà AL CINEMA], sinó AL TEATRE  
 the Joan no to-me past-3s-invite to-the movies, but to-the theater  
*Joan didn't invite him to the movies, but to the theater*

the expression in focus (i.e. CINEMA (movies)) must be substituted by TEATRE (theater), its focus counterpart. This situation might be represented as follows :



Notice that the same may be applied for Stripping as well. The only difference is the presence of the sentential conjunction, and more polarity particles, and not just the negation *no* and the adversative or the phrasal conjunction (*sinó*) (but).

What about TP-Ellipsis with *sí/no/també/tampoc*? Again we may assume following Laka (1990), López (1994, 1999) and López & Winkler (2000), that the head of  $\Sigma P$ ,  $\Sigma$  governs the TP complement in those cases, and moreover  $\Sigma'$  takes both values  $[\pm neg]$  or unspecified features. This fact allows for elliptical constructions where the particles *sí/no* have scope over the content of the missing VP in the target in TP-Ellipsis.

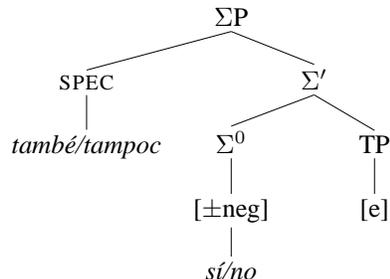
What about *també/tampoc*? The distribution of *tampoc*(neither) in Catalan can be represented schematically as follows :

- (39) a. ... [tampoc ([<sub>neg</sub> no]) v ...]  
 b. ... [[<sub>neg</sub> no] v ... tampoc]

That is, when the n-word *tampoc* occupies a preverbal position, the negator *no* should be overtly realized. When it is postverbal, the presence of *no* is obligatory.<sup>10</sup> The examples below illustrate this distribution :

- (40) a. (a)La Maria no vindrà tampoc a sopar  
*Mary not will come neither to diner*  
 b. Tampoc la Maria (no) vindrà a sopar  
*Neither Mary (not) will come to diner*  
 c. La Maria \*(no) vindrà a sopar tampoc  
*Mary \*(not) will come to diner neither*  
 d. \*(no) tampoc vindrà a sopar la Maria  
*\*(not) neither will come to diner Mary*

Suñer (1995) and Laka (1990), for instance, treat the Spanish *tampoco* as a negative polarity item. Vallduví (1994), defines the Catalan *tampoc* as a *n-word*. All these analysis share the view that this particle occupies the position [SPEC,  $\Sigma$ P]. On the other hand it has been argued that *tampoc* and *també* in TP-Ellipsis constructions are in complementary distribution (Brucart, 1987, Busquets, 1999). Hence, why should we analyse them in a different way in those cases? The result of this assumption would then give the following tree for TP-Ellipsis in Catalan where [e] corresponds to the missing material which has to be recovered from the VP denotation in the source.



In the tree above, *també/tampoc* are specifiers which select the kind of categories they combine with. More specifically, they are markers (i.e., *proforms*) that select the kind of category they mark. These expressions allow for a substitution of a pro-constituent in the phrase and they are needed in order to guarantee the reconstruction of a higher category and being deleted. For TP-ellipsis, the category will be the VP, whereas for Stripping and negative-contrasting constructions the selected expression will be determined by the realization of focus.

<sup>10</sup>It is worth noting that in colloquial speech it is usual to obviate the negation when *tampoc* appears in preverbal position. Here I assume the traditional grammar according to which *no* appears whatever position *tampoc* occurs.

## 5 Focus and Ambiguity in TP-Ellipsis

There is yet another interesting interaction between VP-Ellipsis and focus where there are more than one VP in the context. Consider the following examples :

- (41) a. John SAID that Mary won the competition, and she DID [e]  
 b. John SAID that Mary won the competition, but she DIDN'T [e]  
     [e] = *win the competition*  
 c. JOHN doubted that Mary won the competition, but SHE didn't [e]  
     [e] = *doubt that Mary won the competition*

Examples in (aa,b) show that the focal stress on the verb in the source, and the AUX in the target, imply the lower VP (i.e., *win the competition*) as a recovered material for the ellipsis site. By contrast, in (ac), when the focal stress falls over both subjects, the higher VP is preferred as a source (i.e., *doubt that Mary won the competition*). Now, let's see how Catalan information packaging affects these choices in Catalan.

- (42) En Joan va dir que en Pere havia guanyat la carrera, però la Núria no [e]

The Catalan translation is also ambiguous depending on which VP is used to recover the missing material in the target, either picking up the lower VP or the higher VP (i.e., *no va dir que P(x)* or *no P(x)*). Through syntactic movements, focus gives us the right VP in a natural and revealing way, as the examples below illustrate.

- (43) a. En Joan [<sub>focus</sub> ho<sub>i</sub> va DIR], [<sub>tail</sub> que en Pere havia guanyat la carrera], però la Núria no [e]  
     the Joan it past-3s-say that the Pere won the competition, by contrast the Nuria no  
     Joan SAID Pere won the competition, but Nuria didn't  
     [e] = [ho va dir (did say)]  
 b. En Joan va dir que en Pere [<sub>focus</sub> l<sub>i</sub>'havia GUANYADA], [<sub>tail</sub> la carrera], però la Núria no [e]  
     The Joan past-3s-say that the Pere it-past-3s-win the competition, by contrast the  
     Nuria no  
     Joan said Pere WON the competition, but Nuria didn't  
     [e] = [l'havia guanyada]

Recall that Stripping-like operations do not permit such constructions, since as we have already noted, the *remnant* could not be the NP+particle, but rather something which is parallel with the focus :

- (44)
- a. #En Joan [<sub>F</sub> ho<sub>i</sub> va DIR], [que en Pere havia guanyat la carrera], però no la Núria  
*Joan SAID Pere won the competition, but not Núria*
  - b. #En Joan va dir que en Pere [<sub>F</sub> l<sub>i</sub>'havia GUANYADA], [la carrera], però no la Núria  
*Joan said Pere won the competition, but not Núria*
  - c. En Joan [<sub>F</sub> ho<sub>i</sub> va DIR], [que en Pere havia guanyat la carrera], però no PUBLICAR  
*Joan SAID Pere won the competition but not PUBLISH it*
  - d. En Joan va dir que en Pere [<sub>F</sub> l<sub>i</sub>'havia GUANYADA], [la carrera<sub>i</sub>], però no ABANDONADA  
*Joan said Pere WON the competition, but not ABANDONED*

As expected only (bc-d) are appropriate (parallel foci = Stripping), however (ba-b) are not, since they do not satisfy the focus expectations created by the *correlate* (i.e., the NP's do not belong to the *contextual alternatives* of the correlate), a constraint which does not show up when the VP is missing.

## 6 Conclusions

In this paper we have presented evidence that in Catalan, as in English, there is a distinction between *Stripping* and *TP-Ellipsis*, two syntactic phenomena exhibiting different constraints.

1. Stripping, like negative-contrasting constructions, is constrained by the *information packaging* of the sentence (i.e., under the control of focus). We have seen that the *remnant* has to be the parallel focus to the focus expression in the *correlate*. Following Rooth (1985) we might say that the *remnant* belongs to the *contextual alternatives* of the *correlate*.
2. According to Reinhart (1991) and Drübig (1994) only negative-contrasting constructions are constructions with parallel foci. Stripping does not necessarily have parallel foci. We have argued that this is not the case for Catalan: *també X / X també* or *tampoc (no) X / X tampoc (no)* present parallel foci between the correlate and the remnant.
3. Following Vallduví's approach (1990) in negative-contrasting constructions the speaker assumes that the hearer has an entry which must be replaced (*Retrieve-Substitute* instruction). *TP-Ellipsis* does not present this constraint with respect to information packaging. However, the position of focus may give us a clue for the interpreting the target when two or more VPs are present in the same context.
4. Finally, we have proposed a unified analysis of the *polarity particles* defining them as *pro-forms*, expressions whose function is to select and reconstruct the appropriate category in the case discussed in this paper.

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