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Structural Properties of Information Packaging in Catalan*

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Logico-semantic relations, theta structure, and case requirements have always been considered to be crucial in determining the syntactic shape of sentences and in motivating or requiring the application of movement operations. This paper shows, well within the spirit of this volume, that these linguistic modules do not exhaust the list. Information packaging, a non-truth-conditional component of sentence interpretation, a.k.a. topic-focus articulation and functional or communicative structure, is a major determinant of syntactic shape as well. Moreover, in view of the fact that syntax must encode information packaging as much as it encodes theta relations or logico-semantic quantificational configurations, the question arises of what is the best way to describe the interface between surface syntax and information packaging. In the Principles and Parameters theory of syntax, a multistratal theory, each abstract stratum structurally and purely represents one of the aforementioned modules. The issue of whether we must deal with information packaging in a similar fashion is one of the main topics of this study.

Information packaging, as an interpretive component, is language independent, i.e., its internal workings should be constant across languages. A comparison of Catalan and English, however, shows that different languages use different structural means to realize information packaging. In English-type languages this realization is mostly prosodic, despite having informationally loaded constructions like topicalization. In Catalan-type languages this realization is exclusively syntactic. At first glance, this cross-linguistic disparity in the structural realization of information packaging may suggest that different informational interpretive rules are needed for each language type. If so, these interpretive rules are rendered highly language-specific. This paper takes the opposite tack: informational

interpretive rules may remain constant across languages if we posit a cross-linguistically uniform abstract level of representation, IS, mediating between surface syntax and the informational component. The interpretive rules that bleed IS are the same for all languages. The contrasts they display in the structural realization of information packaging are now located exclusively in the syntax, in the mapping between S-structure and IS. The level of IS plays a role analogous to the one played by LF with respect to logico-semantic interpretation, i.e. an interface level of pure disambiguated representation.

The article is structured as follows: Section 2 introduces the dynamic instruction-based approach to information packaging (Vallduví (1992a)) used in this paper to describe informational interpretation and its realization in Catalan and English. In Section 3, after a brief background discussion of some basic notions of Catalan syntax, the structural realization of focus and ground in Catalan is analyzed. Section 4 looks at the structural realization of informational notions in English. Section 5, taking the syntax of information packaging in Catalan as a point of departure, describes the general configurational requirements that IS representations must meet. Section 6 extends this abstract IS configuration to English by describing the mapping operations that transform S-structures into IS structures in this language. Section 7 examines two related problems for the general IS configuration posited in Section 5 (the widely accepted abstract rule of focus-raising and the existence of focus-preposing in English) and counters them. Finally, Section 8 contains some remarks concerning the implications of the existence of IS for the architecture of grammar.

2. Information Packaging

Information packaging is a pragmatic component of language that has been studied under several traditions of linguistic thought. The general approach adopted here is that of Chafe (1976) and Prince (1986). Information packaging, in this view, is concerned with the structuring of sentences according to what speakers assume hearers know and are paying attention to at the time of utterance. In other words, when communicating a proposition *p*, a given speaker may encode *p* in different sentential structures according to his/her beliefs about the hearer's knowledge state with respect to *p*. Most informational articulations proposed in the literature agree in dividing the sentence into a part that anchors it into the hearer's current knowledge state and an informative part that makes some contribution to that knowledge state.

Vallduví (1992a), pursuing this idea, argues that the role of information packaging is to optimize entry of propositional content into (a salient subset) of the hearer's knowledge-store. Each sentence encodes not only a logico-semantic proposition but also an information packaging *instruction*. Each instruction-type is designed according to the speaker's assumptions to indicate what part of the sentence constitutes *information* and where and how that information fits in the hearer's knowledge-store. The information of a given sentence *S* (I_s) is defined as the propositional content of *S* (p_s) minus the knowledge (the speaker assumes)

the hearer already has and is attending to (K_h), i.e. $I_s = p_s - K_h$. Two sentences encoding the same proposition carry different amounts of information if the value of K_h changes.¹

In order to see how this instruction-based informational system works, something must be said about the structure of the knowledge-store. Let us assume a file-card view of the knowledge-store, akin to the one in File Change Semantics (cf. Heim (1983)). The knowledge-store is a collection of entity-denoting file cards. On each file card there are entries recording descriptions pertaining to the relevant entity. File-card management, i.e. the creation of new file cards and the activation of already existing but dormant file cards, is the responsibility of referential-status marking (very roughly, indefinites = creation of new cards, definites = activation of existing ones; see Heim (1983) and Prince (1992) for details).²

The content of file cards is updated during communication. Information packaging is responsible for making this updating process more efficient through the use of different instruction-types in different communicative contexts. This instruction-based approach is ultimately based on the traditional topic-comment and ground-focus articulations, which are, however, merged into one single system. The system builds on three information-packaging primitives. One, *focus*, represents the information of the sentence (I_s), i.e. what the hearer is instructed to enter into his/her knowledge-store. The other two, *link* and *tail*, together make up the *ground*. The role of the ground is to indicate where and how to enter I_s . The link points to a specific file card in the hearer's knowledge-store for the entry of I_s . The tail further specifies how I_s fits on a given file card. The presence of a ground is not always necessary. The ground performs an "ushering" role for I_s : it guarantees I_s finds its correct (from the speaker's perspective) place in the hearer's knowledge-store. If (the speaker assumes) no usher is needed, a sentence has no ground.

These informational primitives have a constant interpretation and combine to yield the interpretation associated with each of the four possible distinct *instruction-types*, which direct hearers to enter the information of the sentence into their knowledge-store in a specific way. Focus is interpreted as being in the scope of an ENTER operator. An utterance is minimally interpreted as having the informational structure ENTER(INFORMATION). This bare informational instruction, an all-focus instruction, is enriched if any ground material is present. The link is reminiscent of Reinhart's (1982) topic and Välimaa-Blum's (1988) S-topic. If an expression denoting a file card *fc* is structurally realized as a link, it is informationally interpreted as GOTO(*fc*), i.e., it directs the hearer to a particular file card where the oncoming information must be recorded. So, if a sentence encodes a link-focus instruction, the interpretation obtained from it is GOTO(*fc*)(ENTER(INFORMATION)). Since a link is interpreted as a GOTO operator, it will only appear if the hearer is instructed to change the locus of information entry. If the information of a given sentence S_n is to be recorded onto the same file card where the information of S_{n-1} was recorded, no link is needed.

The tail further specifies the nature of information entry on a particular file card by indicating that the information is not simply added but must substitute

for some element in a record already present on that file card. A tailful instruction directs the hearer to a particular record on a file card and indicates that the focus completes or alters that record in some way. To reflect this, the ENTER operator is assumed to have two types. One, the ENTER-ADD type, acts as a default and is the interpretation obtained if no tail is present. The other, the ENTER-SUBSTITUTE type, is triggered by the presence of a tail. Thus, a link-focus instruction is actually interpreted as GOTO(*fc*)(ENTER-ADD (INFORMATION)), whereas a link-focus-tail instruction is GOTO(*fc*)(ENTER-SUBSTITUTE(INFORMATION)).

These abstract instructions can be exemplified with the English sentences (1-3): a link-focus sentence in (1a), a link-focus-tail sentence in (2a) and an all-focus sentence in (3a) ($[L]$ delimits the link, $[F]$ delimits the focus, and capitals signal the lexical item with the focal pitch accent). Sentences (1-3) encode the instructions in (b), which may be read as in (c):

- (1) a. $[L$ The boss $][F$ hates BROCCOLI $]$.
 b. GOTO(boss(x))(ENTER-ADD(x hates broccoli))
 c. Go to *fc* 'the boss' in your knowledge-store and then enter I_s by adding on *fc* that he hates broccoli.
- (2) a. $[L$ The boss $][F$ HATES $]$ broccoli.
 b. GOTO(boss(x))(ENTER-SUBSTITUTE(hates)({V | x V broccoli}))
 c. Go to *fc* 'the boss' in your knowledge-store and then enter I_s by substituting 'hates' for V in the record 'the boss V broccoli' on *fc*.
- (3) a. $[F$ The BOSS called $]$.
 b. ENTER-ADD(the boss called)
 c. Enter I_s by adding to your knowledge-store that the boss called (on a default situation *fc*).

All-focus structures like (3) do not designate a particular file card on which the information must be recorded, but rather point to a temporary situation file card. A second sort of all-focus instruction corresponds to an ENTER-ADD entry of information on a file card specified in a previous sentence, rendering a GOTO operator (i.e. a link) unnecessary. The fourth possible instruction-type, the focus-tail, is an ENTER-SUBSTITUTE on a previously specified file card. This repertoire of instruction-types encompasses systematically all the informational constructions previously described in the literature: fromthetic and categorical judgments to topic-comment structures, and from news sentences or neutral descriptions to open-propositions or narrow-focus sentences. The system captures a range of additional semantic and pragmatic phenomena as well.

For the purpose at hand, this overview of the informational system assumed in this paper should suffice. Further motivation for particular proposals and discussion of the facts may be found in Vallduví (1992a). The following are central

points: (a) the system encompasses the traditional informational notions argued for by several earlier approaches; (b) all sentences encode an informational instruction; (c) the interpretation of each instruction-type results from the rule-governed combination of the interpretation of the informational primitives it contains; (d) the focus is the necessary basic building block of all instructions and the ground, both link and tail, appears only if needed in the sense explained above.³

3. The Overt Syntax of Information Packaging in Catalan

3.1. Basic Word Order

Contra the traditional view, the discussion in this section assumes that Catalan, like other Romance languages, is underlyingly VOS. The VOS word order is defended and independently argued for in Rosselló (1986), Bonet (1990), Solà (1992), and Vallduví (1993) for Catalan and by Adams (1987), Fernández-Soriano (1989), and Contreras (1991), *inter alia*, for other Romance languages. Thus, in a sentence like (4) the verbal arguments appear in their underlying word order:

- (4) ... quan van tirar la bomba atòmica els americans.
 when dropped the bomb atomic the Americans
 '...when the Americans dropped the A-bomb.'

With this assumption, the basic linear order in the Catalan sentence is verb-object-oblique-subject-adjuncts. This linear order is strict and no permutations within the core clause are allowed (although there is some variation in the relative order of subjects and some oblique arguments and heavy NP-shift exists as an option). In (5), for example, the string order of object and locative is fixed:

- (5) a. Ficarem el ganivet al calaix.
 we will put the knife in the drawer
 'We'll put the knife in the drawer.'
 b. *Ficarem al calaix el ganivet.

Catalan is a null-subject language, so subjects need not appear overtly. In fact, null subjects are the unmarked pronominal form. In contrast, if a verbal complement does not appear within the core clause, an appropriate pronominal clitic must be attached to the verb. As a rule, such a clitic must be absent if the verbal complement does appear within the core clause (well-known exceptions to this generalization are the optional doubling with indirect objects and in-situ strong pronouns). These facts are illustrated in (6). In (6a), with a complement in situ, the presence of the clitic is illicit, while in (6b), with a missing complement, it is required:

- (6) a. (*Hi_i) visc a Barcelona_i.
 locative I live in Barcelona
 'I live in Barcelona.'

- b. Hi_i/(*) visc e_i.
 locative I live
 'I live there.'

3.2. Detachments

One of the most well-known universal structural correlates of information packaging is the association of focus and intonational prominence. The most prominent point of the pitch contour must fall on (a subset of) the focus of the sentence.⁴ In languages like English, this association is attained by shifting prominence to different positions in the clause while the syntactic structure remains constant. In (7b), for instance, *broccoli* remains outside the scope of prominence and is therefore interpreted as nonfocal:

- (7) a. The boss hates BROCCOLI.
 b. The boss HATES broccoli.
 c. The BOSS hates broccoli.

Not all languages, however, use this type of prosodic shift to achieve the association of prominence and informational focus. Contrary to English, in Catalan intonational prominence is necessarily associated with the righthand boundary of the core clause (cf. Vallduví (1991)). Any shift of prominence to the left yields an ungrammatical string:⁵

- (8) a. Ficarem el ganivet al CALAIX.
 we will put the knife in the drawer
 'We'll put the knife in the drawer.'
 b. *Ficarem el GANIVET al calaix.
 c. *FICAREM el ganivet al calaix.

To carry out the informational effects that English achieves by means of prosodic shift, Catalan must resort to a different strategy. The nonfocal phrases that would remain within the scope of prominence if they were left in situ undergo *detachment*. Left-detachment is a left-adjunction to IP, while right-detachment is a right-adjunction to IP. The locative in (8), *al calaix* 'in the drawer,' is interpreted as focal unless it is right- or left-detached, as in (9) (right-detached phrases are set off from the core clause by a comma):

- (9) a. Hi_i ficarem el GANIVET t_i' al calaix_i.
 locative we will put the knife in the drawer
 'We'll put the KNIFE in the drawer.'
 b. Al calaix_i hi_i ficarem el GANIVET t_i.
 'In the drawer we'll put the knife.'

Detachment leaves an empty category behind and triggers the appearance of a coindexed clitic attached to the verbal head. In (9) it is the locative clitic *hi*. The

adjunction-to-IP analysis is proposed for topicalization in English by Baltin (1982) and is extended to Romance "clitic left-dislocation," especially Italian, by Rochemont (1989). The structure adopted for sentences like (9a) and (9b) is as in (10):⁶

- (10) a. left: [_{IP} XP₁ [_{IP} ... cl₁ ... t₁ ...]]
 b. right: [_{IP} [_{IP} ... cl₁ ... t₁ ...] XP₁]

There are three main pieces of evidence for arguing that detached phrases are external to the core clause. First, the mandatory presence of the clitic *hi* bound by the detached phrases in the sentences in (9). As noticed, clitics in Catalan appear only if the complement slot they are coindexed with is empty at the surface. Second, the fact that there may be several detached phrases and that their relative linear order is free contrasts with the invariability of linear order of the complements in situ. This supports the view that detachment is an adjunction operation and that the adjunction site is external to the core IP. Detachment may map a canonical sentence like (8a) into any of the sentences in (11):

- (11) a. El ganivet₁ al calaix₂ l₁'hi₂ FICAREM t₁ t₂.
 the knife in the drawer object-locative we will put
 'We will put the knife in the drawer.'
 b. Al calaix₂ el ganivet₁ l₁'hi₂ FICAREM t₁ t₂.
 c. El ganivet₁ l₁'hi₂ FICAREM t₁ t₂, al calaix₂.
 d. Al calaix₂ l₁'hi₂ FICAREM t₁ t₂, el ganivet₁.
 e. L₁'hi₂ FICAREM t₁ t₂, el ganivet₁, al calaix₂.
 f. L₁'hi₂ FICAREM t₁ t₂, al calaix₂, el ganivet₁.

The third piece of evidence is the licit placement of clause-peripheral particles like *xec* 'man' and the tag *oi* 'right?' between the clause and the detached phrases, as in (12a), a left-detachment, and (12b) and (13a), two right-detachments. It shows that there is indeed a clausal boundary there. Examples (12c) and (13b) show that these particles cannot occur clause-internally:

- (12) a. El ganivet₁ xec, el₁ ficarem t₁ al CALAIX.
 the knife man object we will put in the drawer
 'The knife we will put in the drawer, man.'
 b. El₁ ficarem t₁ al CALAIX, xec, el ganivet₁.
 c. Ficarem (*xec) el ganivet (*xec) al CALAIX, xec.
 (13) a. El₁ ficarem t₁ al CALAIX, oi el ganivet₁?
 object we will put in the drawer right the knife
 'We will put the knife in the drawer, right?'
 b. Ficarem el ganivet (*oi) al CALAIX, oi?

3.3. The Structural Realization of Focus and Ground

As noted, a phrase that remains under prominence is interpreted as focal. Example (14b), with a locative associated with prominence in situ, is a felicitous answer to question (14a), which requires a focal locative in the answer. But (14c) and (14d), where the locative is right- and left-detached, respectively, are infelicitous answers to this same question (the symbol "#" indicates infelicity):

- (14) a. On és, el ganivet?
 'Where's the knife?'
 b. El₁ vaig ficar e₁ al CALAIX.
 object I put in the drawer
 'I put it in the drawer.'
 c. #L₁'hi₂ vaig FICAR e₁ t₂, al calaix₂.
 d. #Al calaix₂ l₁'hi₂ vaig FICAR e₁ t₂.

Sentences (14c–d) are infelicitous because the locative in them, by virtue of being detached, is interpreted as part of the ground. Thus, they cannot answer a question that requires a focal locative in the answer. Right- and left-detached phrases encode the informational ground of the sentence. The directionality of the detachment depends on the informational status of the elements within the ground. If the phrase is to be interpreted as a link, it is detached to the left. If it is a tail, it is detached to the right. The difference between the two becomes evident in contrastive contexts, since, out of the two ground elements only links are compatible with a contrastive use:

- (15) a. On són, els coberts?
 'Where's the flatware?'
 Les forquilles són a l'armari, però...
 'The forks are in the cupboard, but...'
 b. ... els ganivets₁ els₁ vaig ficar t₁ al CALAIX.
 the knives object I put in the drawer
 '...the knives I put in the drawer.'
 c. #...els₁ vaig ficar t₁ al CALAIX, els ganivets₁.

In the contrastive context set up by (15a) a sentence with a left-detachment, (15b), is required. Use of the right-detached analog (15c) results in infelicity (realizing links in a lefthand position is common in discourse-configurational languages (É. Kiss, this volume)).

It is not just the lexical item that falls directly under intonational prominence which is interpreted as focus, but every major constituent that remains within IP. Thus, a sentence like (8a) above, repeated here as (16), is entirely focal, i.e., it is a VP-focus sentence that may occur as an answer to the question *What house chore will you guys take care of?* (unlabeled brackets ([]) will be used from now on to delimit the focus):

- (16) [Ficarem el ganivet al CALAIX].
 we will put the knife in the drawer
 'We'll put the knife in the drawer.'

The object in (16) will receive a focal interpretation unless it is realized as ground by means of detachment, as in (15b–c). In other words, (16) is not a felicitous answer to a question that requires a verb+locative focus, like *What will you do with the knife?*, or to a question that requires a narrow focus on the locative, like *Where will you put the knife?* Not unless the object is removed from within IP.⁷

The structural realization of the informational status of subjects follows the exact same pattern. Witness, for example, (17b), where the subject is in situ and, therefore, focal. (17b) is a felicitous reply to (17a). In contrast, (17c) is not a felicitous answer to (17a), because the subject appears in a right-detachment position and is, therefore, inappropriately interpreted as a tail:

- (17) a. Que hi ha cap missatge, per a mi?
 'Are there any messages for me?'
 b. Sí. [Ha trucat l' AMO].
 yes has called the boss
 'Yes. The boss called.'
 c. Sí. # [Ha TRUCAT t₁], l'amo₁.

Summarizing, the structural realization of information packaging in Catalan presents the following configuration:

- (18) [_{IP} link [_{IP} focus] tail]]

In this configuration, the focus is all and only the overt material in the core IP slot. Focus and prominence are associated because the latter necessarily falls on core-clause-final position. A feature-assignment view of the syntax of focus (Horvath (this volume)) would say that in Catalan [+FOCUS] is an intrinsic feature of the core IP. However, contrasting with other languages of this type, this intrinsic association of [+FOCUS] and IP does not attract foci towards [+FOCUS]. Rather, it repels nonfocal phrases: whenever there are ground phrases, they must all right- or left-detach to the periphery. Let us rephrase these observations in terms of the instruction-based system introduced in Section 2. First, elements dominated by the lowest IP (except weak pronominals) are interpreted as being within the scope of the ENTER operator (they are I₁). Second, an XP denoting a filecard *fc*, if left-adjoined to IP, is interpreted as GOTO(*fc*), i.e., it receives a link interpretation. And third, whenever one or more phrases are right-adjoined to IP, the nature of ENTER is altered: it no longer is the default ENTER-ADD but the tail-triggered ENTER-SUBSTITUTE.

The discussion in this section illustrates the fact that in Catalan a fairly straightforward mapping may be established between surface syntactic structure and informational interpretation.

3.4. Focus-preposing

There is one construction, however, that appears to violate the generalizations established in Section 3.3: focus-preposing or rhematization. In this construction, illustrated in (19), prominence appears to be clause-initial instead of clause-final. Also, instead of the ground, it is the focus that appears to undergo detachment:

- (19) Al FUSTER la mare va donar les claus.
 to the carpenter the mother gave the keys
 'Mother gave the keys [to the CARPENTER].'

In fact, focus-preposing is traditionally analyzed as involving a fronting of the focus phrase via wh-movement to CP (cf. Bonet and Solà (1986) for Catalan and Ortiz de Urbina (this volume) for Spanish). The main argument for the wh-movement analysis is the fact that focus-preposed phrases, like wh-phrases in wh-questions and unlike left-detached phrases, cannot bind a clitic in the clause.

Focus-preposing and right-detachment are in complementary distribution qua information-packaging constructions. They both encode the same focus-ground instruction, but right-detachment is used when the focus is Vⁿ and focus-preposing when Vⁿ is part of the ground. The two constructions are prosodically homophonous, with prominence on the focus, as expected, and an ensuing low-pitched flatter contour over the nonfocal material. Yet they are seen as radically different in strict syntactic terms: in right-detachment the nonfocal material moves rightwards and in focus-preposing the focal material moves leftwards. This distribution appears natural if it is assumed that there is a fixed undetachable [+TNS] verbal core: the [+TNS] element, be it focus or ground, must stay put within the core IP. But if this assumption is abandoned and the [+TNS] element is indeed detachable, a different alternative materializes.⁸ Sentences like (19) need not involve an actual preposing of the focus; they could very well reflect the right-detachment of all nonfocal elements. This second alternative is defended in Vallduví (1992b). The argument is based on two points: (a) focus-preposing in Catalan does not show the behavior typical of wh-movement, and (b) the postfocal phrases in focus-preposing do not behave like in-situ phrases but like right-detached phrases instead.

With respect to (a), the contrast between wh-movement and focus-preposing in Catalan is clear. Wh-questions require adjacency of the fronted wh-element and the verbal string. A sequence wh-word-subject-verb is out in the wh-question in (20a). In contrast, focus-subject-verb sequences in focus-preposing are grammatical (20b). In addition, focus-preposing does not obey the island constraints either (21):

- (20) a. *Què el Jordi s' ha comprat?
 what the Jordi self has bought
 'What did Jordi buy himself?'

- b. Un ROLEX el Jordi s' ha comprat.
 a. Rolex the Jordi self has bought
 'A ROLEX Jordi bought himself.'
- (21) El MERCEDES el Jordi no sap qui s' ha comprat.
 the Mercedes the Jordi no knows who self has bought
 'The MERCEDES Jordi doesn't know who bought.'

Spanish and Catalan contrast with respect to these phenomena. The Spanish equivalents of sentences like (20b) and (21) are judged to be ungrammatical by many authors. Perhaps in Spanish focus-preposing is indeed wh-movement-like. Ortiz de Urbina (this volume) argues that this is so not only in Spanish but also in Basque, and Uriagereka (this volume) suggests that foci appear in a lefthand focus slot in Western Iberian Romance as well (note that Hungarian-type languages also require the adjacency of focus and the verbal string). Italian, in contrast, behaves like Catalan, since focus-subject-verb sequences are grammatical, while wh-word-subject-verb sequences are not ((22a) is from Antinucci and Cinque (1977, ex. 17)):

- (22) a. Un' AUTOMOBILE Giorgio ha comprato.
 a. car Giorgio has bought
 'A CAR Giorgio bought.'
- b. *Che cosa Giorgio ha comprato.
 what thing Giorgio has bought
 'What did Giorgio buy?'

As for point (b), once it is observed that the postfocal phrases in a focus-preposing can be freely ordered it becomes apparent that they cannot be phrases in situ, since, as noted above, phrases in situ display strict word-order requirements. Contrast the free relative order of the postfocal phrases in the focus-preposings in (24) with the strict linear order in the canonical (23).

- (23) a. Portarem el nen a Disneyworld aquest estiu.
 we will take the boy to Disneyworld this summer
 'We'll take the kid to Disneyworld this summer.'
- b. *Portarem a Disneyworld el nen aquest estiu.
 c. *El nen portarem a Disneyworld aquest estiu.
- (24) a. A DISNEYWORLD portarem el nen aquest estiu.
 b. A DISNEYWORLD el nen portarem aquest estiu.

In fact, the freedom in string order among the postfocal phrases in focus-preposing is reminiscent of the same freedom that postfocal phrases display in right-detachments.

This analysis accounts for the freedom of string order among the postfocal phrases: this freedom is typical of sequences of right-detached phrases. Also, that

"focus-preposing" does not behave like wh-movement ceases to be surprising: subjects may appear between the focus phrase and the verb, as in (20b), because subject and verb are individually right-detached phrases that appear in free string order. Finally, we also capture the fact that focus-preposed phrases, unlike left-detached phrases, do not bind a clitic in the clause. Since clitics appear when the argument position they are coindexed with is empty at the surface, there is no reason for them to appear in "focus-preposing" because the so-called focus-preposed phrase is actually in situ. The clitic is simply not licensed. If Catalan "focus-preposing" is indeed a nonfocal right-detachment configuration in disguise, the only prima facie exception to the picture presented in Section 3.3 disappears and the surface configuration in (18) is confirmed.⁹

4. Structural Realization of Information Packaging in English

Section 3 showed that the mapping between surface syntactic configuration and informational interpretation in Catalan is quite straightforward. As noted in Section 1, the situation in English is quite different: the overt position of the major constituents does not reflect the informational structure of the sentence but other structural requirements instead. The overt structural realization of information packaging is left mostly to prosody.

Consider the following set of sentences: The (b) sentences are the English informational equivalents of the Catalan (a) sentences. The sentences in (25) and (27) are link-focus structures, those in (26) are link-focus-tail, and in (28) they are all-focus:

- (25) a. L'amo₁ [odia el BRÒQUIL t₁].
 b. The boss [hates BROCCOLI].
- (26) a. L'amo₁ [l₂'ODIA t₂ t₁], el bròquil₂.
 b. The boss [HATES] broccoli.
- (27) a. L'amo₁ [ha TRUCAT t₁].
 b. The boss [CALLED].
- (28) a. [Ha trucat l'AMO].
 b. [The BOSS called].

In (25) the object, *el bròquil* or *broccoli*, is part of the focus and in (26) it is part of the ground. This distinction is syntactically reflected in Catalan through the different position of the object in (25a) and (26a). English (25b) and (26b) are syntactically identical, the only difference between them being prosodic. Similarly, in (27) and (28): the subject, *l'amo* or *the boss*, is a link in (27) but focal in (28). Its overt syntactic position varies accordingly in Catalan, but remains constant in English (prosody encodes the distinction).

The importance of prosody in the structural realization of information packaging in English has long been observed and studied. Steedman (1991), for in-

stance, is a thorough description of the facts that takes as a basis Pierrehumbert's phonology of intonation (cf. Pierrehumbert and Hirschberg (1991)) and Halliday's (1985) binomial theme-rheme informational articulation. According to Steedman, the rheme is associated with a H* LL% phrasal tune and the theme is associated with a L+H* LH% phrasal tune. The pitch accent in the former tune, H*, is a level high tone, while the latter contains a pitch accent, L+H*, that consists of a high tone preceded by a distinctive low level. This is illustrated in (29) (adapted from Steedman (1991, exs. 33–34)):

- (29) a. Fred ate [the BEANS].
 L+H* LH% H* LL%
 b. [FRED] ate the beans.
 H*L L+H* LH%

The theme in Steedman's description is equivalent to the focus in the information-packaging terminology used here. The theme is equivalent to the ground, but the pitch accent L+H* seems to fall on the element that, within the ground, functions as a link.

English can use syntactic operations too to represent information packaging. Topicalization, for instance, has long been argued to be a syntactic marker of topichood or, in our terms, of linkhood. A sentence like (30a) is a link-focus structure where the left-detached phrase is interpreted as a link:

- (30) a. Broccoli_i [he HATES t_i].
 L+H* LH% H* LL%
 b. He [HATES] broccoli.
 H* L L+H* LH%

The left-detachment, however, is not the only structural realization of linkhood. Even if a link phrase is left-detached, it must still display the tune that is associated with links in English. This renders the syntactic operation redundant, as confirmed by the fact that (30b), with no overt left-detachment but still showing the L+H* pitch accent on the link, is informationally equivalent to (30a). What matters at the surface, then, is prosody. For instance, if the link-associated L+H* pitch accent were absent in (30b), *broccoli* would be interpreted as a tail. This radically contrasts with Catalan, where there is no specific phrasal tune associated with link interpretation and left-detachment is the only means to realize linkhood.

In sum, in English, the scope of the ENTER operator is not determined by the domain of a phrasal category, like in Catalan (the core IP slot), but by the scope of a given pitch accent instead. Similarly, in Catalan link interpretation is assigned only to left-detached XPs, but in English, any XPs structurally marked by the pitch accent L+H* is interpreted by a link, independently of their structural position (see Steedman (1991) for further examples).

5. Abstract Syntactic Representation of Information Packaging

Examples (25–28) show that the same informational instruction is structurally realized in different ways in Catalan and English. The contrast between these languages may suggest that different informational interpretive rules are needed for each language type: the surface objects these interpretive rules have to bleed in each language to yield one and the same informational instruction are different. Thus, informational interpretive rules end up being language-specific. And given that there are many other ways to realize information packaging at the surface (as shown in the papers in this volume), many other kinds of interpretive rules will need to be posited. Consider, for example, languages like Vute that mark focus morphologically (Thwing and Watters (1987)), Hungarian-type languages with a syntactic marking of focus that differs from the Catalan type (É. Kiss (1981), Farkas (1986), Ortiz de Urbina (this volume), Uriagereka (this volume)), or mixed-type languages like German (cf. Jacobs (1986)).

This result is strikingly at odds with the standard view of logico-semantic interpretation. The syntactic level of logico-semantic representation, LF, is generally viewed as cross-linguistically uniform. Overt structural contrasts in the encoding of logico-semantic elements, like presence versus absence of overt wh-movement in wh-question formation, are analyzed as being located in the mapping between S-structure and LF. In fact, the job of LF is, under most analyses, to act as an interface level that feeds universal and disambiguated representations to the semantic component, where logico-semantic interpretation takes place.

The syntactic model allows us to abstract away from overt cross-linguistic variation in the realization of logico-semantic meaning. Why can we not do the same with the overt cross-linguistic variation observed in the case of information packaging? This paper argues we can. Logical semantics and information packaging are distinct interpretive components: following a Gricean division of labor, the former lies within the realm of truth-conditional meaning and the latter within the realm of pragmatics. However, there is no reason to suppose that their respective interfaces with syntax are of different natures. If a cross-linguistically uniform abstract level of informational representation, IS, is posited as an interface between overt syntax and the informational component, the interpretive rules that bleed IS are the same for all languages and the contrasts these languages display in the overt realization of information packaging are now located exclusively in the mapping between S-structure and IS, i.e. in the syntax.

Informational relations are recoverable at S-structure, as theta and quantificational relations are, to permit a fully interpretable interface with PF and the audible (or utterable) surface form of sentences. But, from the perspective of a multilevel framework like Principles and Parameters Theory, S-structure clearly cannot be the level that directly feeds informational interpretation (just as it cannot be the level that feeds logico-semantic interpretation). In the interpretation of informational instructions, S-structure objects are mapped onto "pure" IS representations and these representations are, in turn, translated into an abstract instruction in the information-packaging component. And, vice versa, instructions

generated in the information-packaging component are mapped onto the syntax at IS, which, in turn, maps onto S-structure.

The distinct linguistic relations purely represented in the different abstract levels of representation are conveyed at S-structure in different ways in different languages. As shown in Section 2, in Catalan it is informational relations that are overwhelmingly reflected through the S-structure position of major constituents, while theta structure is conveyed by a combination of indexed clitics and null categories. Note, for example, how in (31) the theta-positions governed by the theta-assigning predicate are empty and how the arguments that bind these empty positions are located in adjunction slots according to their informational role:

- (31) $[_{IP}$ El petit₁ $[_{IP}$ $[_{IP}$ (ja) l_1 'hi₂ ha PORTAT t_1 t_2 t_3],
 the small one (already) object-oblique has taken
 ma mare₃] al metge₂]].
 my mother to the doctor
 'The youngest she (already) TOOK to the doctor, my mother.'

Given that Catalan S-structure closely reflects information-packaging relations, we will rely heavily on it in trying to determine the configuration of IS. The motivation is legitimate. Catalan faithfully realizes information packaging at the surface by syntactic means. It is natural to assume that the configuration of IS, precisely a level meant to be a pure syntactic representation of information packaging, closely resembles the surface syntactic configuration of Catalan.

In fact, this is what has been argued for with respect to the abstract representation of wh-quantification in languages without overt wh-movement. The information-packaging situation is analogous to the case of wh-quantification in English-type languages in the following sense: In a sentence like (32) the S-structure position of the wh-element reflects logico-semantic considerations (the operator-variable structure) and not theta considerations, which are recoverable through the presence of the trace bound by the wh-phrase.

- (32) Who₁ did Mary see t_1 ?

The LF representation of sentence (32), therefore, given additional independent motivation, is taken to be identical to its S-structure representation. Since wh-quantification is appropriately realized at S-structure already, the mapping function between (32) and its LF representation is taken to apply vacuously.

In analogous fashion, it may be proposed that the mapping function between S-structure and IS in Catalan applies (almost) vacuously as well. Given a Catalan S-structure like (31), all that has to be done to obtain a "pure" representation of information packaging is delete the pronominal clitics, which perform no informational task. From (31) the IS representation in (33) is derived:

- (33) $[_{IP}$ el petit₁ $[_{IP}$ $[_{IP}$ ha PORTAT t_1 t_2 t_3] ma mare₃] al
 the young one has taken my mother to the
 metge₂]]
 doctor

Informational interpretation proceeds as described above: the core IP node is associated with the focal ENTER operator (modified by the presence of a tail or tails) and left-detached phrases denoting a file card *fc* are interpreted as GOTO(*fc*). The IS representation in (33) is thus interpreted as GOTO(young-one(x)) (ENTER-SUBSTITUTE(took)({V | my mother V x to the doctor})). The informational interpretive process translates syntactic representation into the corresponding informational instruction, although the syntactic level it bleeds is not S-structure but the interfacing IS instead.

6. Extending IS to English

The question arises next of how the IS configuration in (34), proposed in Section 5,

- (34) $[_{IP}$ link $[_{IP}$ $[_{IP}$ focus] tail]]

is applicable to other languages. Obviously, in languages that show Catalan-like structural realizations of information packaging this extension will be unproblematic. For other languages, however, the mapping function between S-structure and IS will not be vacuous, since it will need to take S-structures of different sorts and turn them into IS representations satisfying the configurational requirements of (34). This mapping is carried out by the move-alpha operation that also maps S-structure into LF and D-structure. This section shows how IS can be extended to English as an illustration of the applicability of configuration (34) to other languages. Of course, the possibility that this IS configuration is subject to parameterization, much in the same way that some aspects of LF representation are (directionality of scope assignment, for instance), must also be entertained.

In discussing the surface realization of information packaging in English in Section 4, it was pointed out that ground phrases in this language may remain in situ. These phrases receive a correct informational interpretation thanks to their prosodic characteristics, but they need not undergo the detachment typical of nonfocal phrases overtly. These nonfocal phrases, however, must undergo left- and right-detachment at IS if the configuration in (34) is to be valid for English. Positing the application of this IS operation is actually quite unproblematic. In fact, as noted in Section 4, a subset of the left-detachments is carried out overtly in the form of topicalization.

It may be said that Catalan is to English with respect to IS nonfocal movement what English is to Chinese for LF wh-raising. It is the standard assumption

that Chinese has at LF the wh-movement that English has at S-structure (cf. Huang (1982)). The English vacuous derivation in (35) is paralleled in Chinese by the nonvacuous (36):

- (35) a. SS: who₁ do you like t₁
 b. LF: who₁ do you like t₁
- (36) a. SS: ni xihuan shei
 you like who
 'Who do you like?'
 b. LF: shei₁ [ni xihuan t₁]

Both Chinese and English possess the same wh-raising operation. The difference is that in English wh-raising is overt and in Chinese it is not. In analogy to the Chinese-English example, it is proposed here that the nonfocal detachments that Catalan displays at S-structure are carried out at the level of IS in English. The mapping between S-structure and IS appears to be fairly straightforward.

Consider a sentence like (37a), where the subject, which acts as a link, and the locative are nonfocal:

- (37) a. The boy [kissed EVERYbody] at the party.
 b. [the boy₁ [t₁ kissed everybody ...

If the subject is to be interpreted as a link, it must left-adjoin to IP at IS, just like in overt topicalization. This unproblematic covert operation would yield the IS structure in (37b) (cf. Kroch, Santorini and Heycock (1988), *inter alia*, for the view that such an operation takes place already at S-structure). Similarly, as a tail, the nonfocal locative in (37a) must be right-detached at IS. Again, this operation is also unproblematic. Thus, the IS representation of (37a) is (38), the result of two adjunction-to-IP operations:

- (38) [_{IP} the boy₁ [_{IP} [_{IP} t₁ kissed everybody t₂] at party₂]

Take (39a), a sentence with a less straightforward derivation. Here the focus is restricted to the locative phrase. In such examples the V' constituent may be interpreted as the tail and as such it must undergo right-detachment. The corresponding IS structure is (39b):

- (39) a. The boy kissed everybody [at the PARTY].
 b. [_{IP} the boy₁ [_{IP} [_{IP} t₁ t₂ at the PARTY] [_{V'} kissed everybody]₂]]

As noted in Section 3, operations involving the detachment of Vⁿ are independently needed to account for Catalan S-structures where Vⁿ is overtly right-detached. In fact, a most natural Catalan rendition of (39a) is (40), where the Catalan S-structure, as expected, matches one-to-one the IS representation posited for the English equivalent:

- (40) El xic₁ [_{IP} [_{IP} t₂ t₁ a la FESTA] [_{V'} va petonejar tothom]₂].
 the boy at the party kissed everyone

It seems, then, that there is no major obstacle in deriving the appropriate IS structures from different kinds of English surface configurations. There is clearly no problem for link-focus and all-focus structures, which are by far the most frequent in language, and there is apparently no problem for the case of tailful structures either, as shown by (37) and (39). Therefore, there is now stronger motivation to establish a crosslinguistically uniform level of IS.

But, beyond establishing this cross-linguistic generalization, is there any specific structural effect in English that lends support to the existence of IS operations like those just described? Some support comes from the fact, already mentioned, that a subset of these operations is carried out overtly through topicalization. But further independent evidence comes from the data in (41) and (42). In (41) the focus is only the verbal string and in (42) the focus is the whole VP:

- (41) a. [_{IP} El Pau₁ [_{IP} [_{IP} no l₂' ha MORT t₂ t₁] el jutge₂]].
 the Pau no object has killed the judge
 b. [_{IP} Paul didn't KILL the judge].
- (42) a. [_{IP} El Pau₁ [_{IP} no ha mort el JUTGE t₁]].
 the Pau no has killed the judge
 b. [_{IP} Paul didn't kill the JUDGE].

These sentences illustrate the phenomenon called "association with focus" (cf. Jackendoff (1972), Horn (1989)). In (41), for both Catalan and English, the ground object phrase *the judge* or *el jutge* "escapes" negation somehow: the scope of negation appears not to extend beyond the verb *kill*. In (42), in contrast, the entire VP is focal and the entire VP is felt to be negated. In other words, in (41) there is the understanding that, although Paul did not kill the judge, some other relation holds between them. No such understanding arises from (42).

The Catalan (a) sentences are not structurally alike. In (41a) the phrase that escapes negation, *el jutge* 'the judge,' is right-detached, but in (42a) *el jutge* remains in situ. Thus, the difference in scope of negation between (41a) and (42a) has a clear structural correlate: when a phrase is detached away from the core IP it escapes negation as well. The English equivalents of these sentences in (41), however, while contrasting in the same way regarding the scopal effects of negation, show no overt structural distinction to reflect this contrast. Now, if English has an abstract right-detachment movement at IS (like the one Catalan has at S-structure) yielding an IS representation like (43) for sentence (41b),

- (43) IS: [_{IP} Paul₁ [_{IP} t₁ didn't KILL t₂] the judge₂]

the scope-of-negation facts can be captured much in the same way they are captured in Catalan. Examples (41b) and (42b), while identical at S-structure, are

crucially different at IS, and the difference in interpretation is captured at that level. This constitutes important language-internal evidence for positing an IS detachment rule.

For the sake of exposition, the relevant facts have been simplified. From the above discussion the assumption may appear to be that negation defines its logico-semantic scope at IS. This is not so. In fact, the different readings for negation stem from the interaction of a constant logico-semantic LF representation for both (41) and (42) and a variable IS structure, different for each sentence. As different IS configurations interact indirectly with the same logico-semantic structure, different "associations with focus" are derived. These facts are analyzed in detail in Vallduví (1992a) and cannot be further discussed here without going too far afield. However, the evidence they provide is good language-internal motivation for the existence of a structural representation like the one posited here.

An alternative approach is to claim that (41) and (42) are different in their truth-conditions and, therefore, that their LF representations must be different as well. If this were so, the interpretive contrast between (41) and (42) would already be reflected at LF and this argument for an IS representation like (43) would fade. The view that (41) and (42) are truth-conditionally different, though, has been shown to be problematic by Gazdar (1979) and Horn (1989), among others. Moreover, if the direct object in (41b) lay outside the LF scope of negation, sentence (44) would be out, but it is not:

(44) Paul didn't KILL anybody, he just threatened some of us.

At LF the polarity item *anybody* must lie within the logical scope of negation in order to be licensed, even if negation is "associated" only with the focal verb. At IS, however, *anybody* must be outside IP because it is part of the ground. The conclusion that (41) and (42) have an identical LF representation but distinct IS representations is confirmed by this fact.

Summing up the contents of this section: it appears that applying the IS configuration motivated by Catalan S-structure to English is a fairly straightforward task. The contrast between the two languages in their realization of information packaging is now confined to the syntactic component. The interface with the informational interpretive component is now language-invariant. Moreover, there is independent language-internal evidence for such an IS configuration for English.

7. Focus-raising and English Focus-preposing

7.1. Abstract Focus-raising

The need for an abstract syntactic representation of information packaging has been pointed out in the literature before. The most well-known proposal is the process of focus-interpretation or focus-raising due to Chomsky (1976) and pursued in Chomsky (1981), Huang (1982), Culicover and Rochemont (1983), and Rochemont (1986), inter alia. Focus constituents are treated as quantificational.

They raise to an A'-position adjoined to the root IP node, just like quantifiers do by means of quantifier-raising. The output of focus-raising, Culicover and Rochemont's (1983) F-structure, is the level at which focus-ground relations are abstractly laid out, as in (45):

(45) [FOCUS₁] [IP ... t₁ ...]

The motivation for this rule is twofold: it is modeled after the overt construction of focus-preposing and it accounts for the weak crossover effect that focus seems to create, parallel to the effect created by quantifiers and wh-words (cf. Chomsky (1976; 1981)).

In the IS configuration proposed in Section 5, however, focus remains in situ dominated by the lowest IP node (the scope of the ENTER operator). The rule of focus-raising yields an output in which focus is outside of the core IP node. If the proposal defended in this paper is correct, there should be no room for focus-raising in the grammar. In this section, the motivation for a rule of focus-raising is countered. First, the weak crossover effect is reviewed. Then, the existence of overt focus-preposing is reconciled with the universal IS configuration proposed in Section 5.

Weak crossover for focus is observable in (46a). Coreference between the pronoun and focal *John* is disallowed. In (46c), where *John* is nonfocal the weak crossover effect is not present and the sentence is, therefore, grammatical:

- (46) a. *_{[IP} his₁ mother saw JOHN₁ yesterday]
 b. JOHN₁ _{[IP} his₁ mother saw t₁ yesterday]
 c. _{[IP} his₁ mother saw John₁ yesterday]

The unacceptability of (46a) is accounted for if one assumes that the focused *John* undergoes a wh-like movement at an abstract level of representation as in (46b). Whatever rules out weak crossover patterns in wh-questions will rule out (46a) as well (see Rooth (1985, 68) for two different accounts). This argument for focus-raising seems, at first blush, very strong, but a closer look at the facts unveils a number of problems concerning the partial status of the weak crossover data and the problematic nature of focus-raising as a rule of grammar.

Examples can be constructed where the weak crossover effect is absent. The putatively illicit reading is not only possible but almost unavoidable in examples like (47). The context for this example is the following. A teenage boy and girl are found snorting coke. Her parents catch them redhanded. The girl's father yells at her and then says to the boy, *And what am I supposed to do with you? Take you to the police?* The girl jumps in and replies,

- (47) a. Leave him alone. You deal with me
 b. and his parents will deal with HIM.

If the focal *HIM* in (47b) is focus-raised at an abstract level, the configuration obtained will be a typical weak crossover, but the coreferential reading is still

grammatical. Only one difference exists between (47b) and (46a): in the latter the focus is a noun and in the former it is a pronoun. As Rooth (1985) points out, this should not affect the weak crossover effect. But compare (47b) with (48b), which indeed seems to be ruled out by the weak crossover effect:

- (48) a. You deal with me
 b. *and his parents will deal with JOHN.

The grammaticality contrast between (47) and (48) is due to a full NP versus pronoun distinction. Given the grammaticality of (47), the badness of (48) cannot be due to the focal status of the NP *John*. Rather, it is due to other reasons probably related to the binding of nouns. The unstressed full NP in (46c) behaves like a pronoun (both unstressed and stressed) and unlike a stressed full NP in allowing the coreferential reading in these weak crossover sentences. The actual reason behind the badness of (48) will not be pursued here, but it is clear that abstract focus-raising does not provide an answer.¹⁰

Focus-raising is a problematic rule of grammar anyway. Koopman and Sportiche (1982) point out the exceptional nature of focus-raising in that it does not obey the ECP. Solan (1984), following Chomsky (1981), remarks that focus-raising yields representations that violate the Binding Theory. Rooth (1985), furthermore, points out apparent subjacency violations of some focus-raising outputs. A solution to all these problems is to say that these principles of grammar do not apply at the level at which focus-raising yields its output (F-structure or IS). One may wonder, however, what sort of well-formedness conditions do apply at this level, given that three core modules of grammar do not. A different type of objection to the rule of focus-raising is of a conceptual nature. Focus-raising is elegant and economical in cases of "narrow" focus, i.e., when most of the sentence is ground. However, in link-focus and all-focus instructions, where focus encompasses most or all of the sentence, an entire predicate or sentence must be focus-raised, as in (49), adapted from Rochemont (1986, 34):

- (49) [_s [+focus]₁ [_s e₁]]

This operation, even though licit, strikes one as counterintuitive if the fact is taken into account that link-focus sentences with VP focus and all-focus sentences are the unmarked case.

7.2. Overt Focus-preposing

The other motivation for abstract focus-raising in English is the existence of overt focus-preposing: if overt focus-preposing reflects a focus-ground relation at the surface, it is indeed natural to assume that it is identical to its corresponding IS structure. The existence of overt focus-preposing is, at first blush, hard to reconcile with the abstract IS configuration given for English in Section 6. Focus-preposing extracts the focus from the clause, leaving the ground within the lowest

IP. To maintain the IS configuration proposed in this paper for English, focus-preposing would have to be undone at IS. This, without further motivation, would be quite unnatural. In this section, the existence of overt focus-preposing in English is reconciled with the proposed non-existence of covert focus-raising.

In English, a sentence with a ground 'they named it x' and a focus 'Fido' may be structurally realized as (50a) or as (50b):

- (50) a. They named it [FIDO].
 b. FIDO₁ they named it t₁.

(50a) is actually the unmarked way to realize this informational split. (50b) has a more marked "feeling" than (50a). Is this "feeling" a reflection of a true informational contrast between (50a) and (50b)? Following the work of Ward (1988) on the pragmatics of preposing, it will be argued here that the answer to this question is yes.

Ward shows that in (50b) the phrase *Fido* has a dual referential force. It denotes both a set/scale (the set/scale of dog names) and a value in that set/scale (*Fido*). In (50a), in contrast, the scale-denoting effect is absent (the set/scale must be independently evoked in the discourse). This difference accounts for the marked "feeling" of (50b): focus-preposed phrases instantiate a set/scalar value in a set/scale they themselves evoke. The dual referential nature of focus-preposed phrases allows them to be partially focal and partially ground. In (50b), for instance, the focus-preposed NP is acting as a link in its scale-denoting role (it points to the hearer's file card for the set/scale of dog names) and it is acting as focus in its value-denoting role (what constitutes information is that 'Fido' is in this case the chosen value in that set/scale).

In terms of the IS configuration proposed in Section 6, this means that *Fido* in (50b) should be simultaneously left in situ within the core IP (to have its value-denoting side be interpreted as focal) and left-detached (to have its scale-denoting side receive a link interpretation). The S-structure position of focus-preposed phrases can be argued to be a reflection not of their partial status as foci but of their partial status as links. Then, assuming the IS for (50b) is identical to its S-structure, the link force of *Fido* is correctly reflected at IS. Its focal side, however, is not. Fortunately, there is a transformational device that will allow the value-denoting side of *Fido* to be in situ and the scale-denoting side to be left-detached at the same time: reconstruction (Chomsky (1977)). Reconstruction is available to map S-structures like (51a) to LF structures like (51b):

- (51) a. [whose mother]₁ did you see t₁.
 b. [whose₁] did you see t₁ mother

An LF like (51a) would not yield the correct interpretation for this question ('for which x did you see x's mother'). By reconstructing a part of the wh-phrase back into the clause the right interpretive result is achieved.

Reconstruction can be employed to reflect the dual informational nature of focus-preposed phrases in much the same way. Let us assume the IS representation in (52) for (50b):

(52) [t[+scale]₁ [[_{IP} (they) t₂ (it) FIDO₁] named₂]]

The value-denoting side of the preposed phrase is reconstructed back into IP to receive a focal interpretation, but the trace left in the left-adjoined slot preserves the scale-denoting side of *Fido*, and duly receives a link interpretation. Given Ward's arguments for the dual informational force of focus-preposed phrases, the existence of this construction ceases to be a valid stimulus for positing an abstract rule of focus-raising. The leftward detachment of the focus-preposed phrase is not a function of its partial status as a focus, but rather of its partial function as a link. What signals its partial status as focus at the surface is, as expected, its H* L phrasal tune, not its syntactic position.

Summarizing this section, it appears that the motivation used to marshal the existence of an abstract rule of focus-raising in English is not as solid as it appeared. The facts on weak crossover with focus are not clear cut and the rule of focus-raising itself is problematic in a number of ways. The fronting of focal phrases in focus-preposing cannot be used as a stimulus for abstract focus-raising either. The abstract IS configuration proposed in Section 5 does not encompass a rule of focus-raising. Given the issues raised in this section, this is not as undesirable as it originally may have seemed.

8. The Place of IS in the Model

In the T-model of grammar (Chomsky and Lasnik (1977), Chomsky (1981)) one single level of representation, LF, is available as an interface with the interpretive components it presumably feeds. If this is so, the following question arises: what is the relationship between LF and IS (or Culicover & Rochemont's F-structure) and, more generally, what is the place of IS in the model of grammar?

There have been several proposals in the literature to determine what the exact locus of informational representation is, especially for focus. Some of these proposals assume information packaging is represented at LF (Chomsky (1976; 1981), Huang (1982), Horvath (1986), and Rochemont (1986)). Others assume it is at an abstract level of representation derived from LF called LF' (cf. Huang (1984)). A third group of works leaves the question open (Koopman and Sportiche (1982) and Culicover and Rochemont (1983)). If focus and ground are taken to be logico-semantic elements of some sort it makes sense, conceptually, to assume that their correct locus of representation is LF. Taking the approach adopted in this study, however, there is little motivation to assume that IS (or F-structure) has to be identified with LF.

In fact, the spirit behind the Gricean division of labor is that interpretation is not a monolithic process. Instead, there are a set of systems with more specific interpretive tasks. Logical semantics is one such system; information packaging,

implicature computation, and illocution are others. The sum of all these interpretive processes results in global interpretation. If interpretation is not monolithic, the syntactic interface level that serves as input to interpretation cannot be monolithic either. A single level is not sufficient to interface the different interpretive systems successfully: the pure structural representation of logico-semantic relations and the pure structural representation of information packaging must be carried out at different levels of abstraction.

There is syntactic evidence that adds to the conceptual arguments for the non-identity of IS and LF. Consider example (53a):

- (53) a. [Ja van fer el descompte a alguns CLIENTS].
 already did the discount to some clients
 '(They) already gave some clients the discount.'
 b. [_{IP} a alguns clients₁ [_{IP} ja van fer el descompte t₁]]

At LF, following the traditional analysis of quantifier-raising, the quantifier phrase *a alguns clients* 'to some clients' must raise and left-adjoin to IP, as in (53b). From this position the quantifier binds a variable in A-position and c-commands its scope. The logical meaning of the quantified expression is thus appropriately represented at LF and fed into the logico-semantic component for interpretation.

But sentence (53a) is an all-focus instruction. As such, given the IS configuration proposed in Section 5, its IS representation must have all material under the core IP node, i.e., nothing should be left-adjoined to IP. This sentence requires an LF structure like (53b) and an IS structure like (54):

(54) [_{IP} ja van fer el descompte a alguns clients]

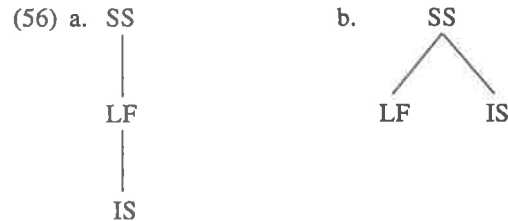
The configurations of (53b) and (54) are not and cannot be the same. Therefore, LF and IS cannot be the same. If (54) were both the IS and the LF representations of (53a), the quantificational force of *alguns clients* would be left unrepresented at the relevant interface level. If, alternatively, (53b) is proposed for both representations, *alguns clients*, which is part of the focus, is erroneously interpreted as a link because of its structural position at IS. If *alguns clients* were a link, it would be encoded as such at S-structure:

(55) [_{IP} a alguns clients₁ [_{IP} ja els₁ van fer el DESCOMPTE t₁]]
 to some clients already object did the discount

The conclusion is that quantifier-raising and link left-detachment cannot take place at the same level of abstraction. Unless one of the two rules is abandoned, IS and LF must be maintained as separate levels of representation (cf. (44) above for similar evidence).

Once the non-identity of LF and IS is determined, the possibility indicated by Koopman and Sportiche (1982) and Culicover and Rochemont (1983) that IS is derived from LF must be examined. On this hypothesis S-structure is mapped onto LF and LF, in turn, is mapped onto LF' (=IS). The working hypothesis

underlying this paper, however, is that IS is directly derived from S-structure. This is evident from the mapping function yielding IS, as was described in Sections 5 and 6, which is designed, for both Catalan and English, to take S-structure representations as input. It is very hard to gather empirical evidence to argue that one hypothesis in (56) is better than the other,



but there are conceptual arguments, based on the economy-of-derivation condition in Chomsky (1991), that suggest that a direct derivation of IS from S-structure is superior to a derivation from LF.

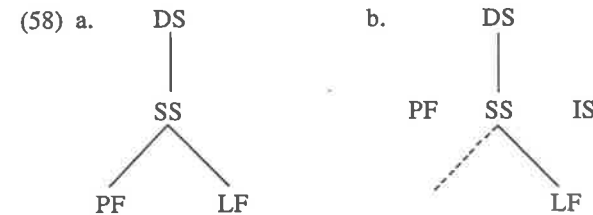
The spirit of Chomsky's condition is to minimize derivation mappings. By a "least effort" principle, if a given result can be achieved by a simple derivation and a complex one, only the former should be legitimate. For instance, a given movement operation should not be posited if it is to be undone in the next derivation. Chomsky's example is the lowering of inflection to V at S-structure. This is a "costly" operation, since it is undone at LF when V+infl is raised to the original INFL position. The IS situation is analogous to the case described by Chomsky. Consider (53) again, repeated as (57a), with its LF representation in (57b) and its IS representation in (57c):

- (57) a. [_{IP} ja van fer el descompte a alguns CLIENTS]
 already did the discount to some clients
 '(They) already gave some clients the discount.'
- b. [_{IP} a alguns clients₁ [_{IP} ja van fer el descompte t₁]]
- c. [_{IP} ja van fer el descompte a alguns clients]

At S-structure the quantifier appears in situ. At LF it must raise and left-adjoin to IP, but at IS it must appear in situ again. If LF mediates between S-structure and IS, (57a) must be transformed onto (57b) before it is mapped onto (57c), despite the fact that (57a) and (57c) are identical. It is a two-step derivation with the second step reversing the output of the first step. This is precisely the type of derivation that Chomsky (1991) judges not permissible, all things being equal. The derivation that yields IS directly from S-structure, in contrast, is straightforward and maximally economical (in the case of (57) the derivation applies vacuously).

Assuming economy, then, a direct mapping between IS and LF is a better alternative. As for the derivation of LF from S-structure, it proceeds in the standard way. The resulting picture is a parallel mapping between S-structure and

two autonomous abstract levels of representation: LF and IS. The inclusion of a separate level of IS, derived directly from S-structure, severely affects the standard view of what grammar must consist of. The T-model of grammar, represented in (58a), has no room for such a level. A model of grammar that does incorporate it can be modeled as in (58b) (the dotted line means that further strata are probably needed to represent other relations):



Chomsky (1991) views S-structure as a contact level between several "fundamental" levels of representation. In other words, S-structure is not a fundamental level but just where all fundamental levels meet. The role of S-structure as a contact level is enhanced and becomes even more plausible in a model like (58b). Each level of pure representation is related to S-structure by a different spoke, and S-structure is literally the hub, from where or to where all the information is passed. At S-structure all information from the pure levels of representation must be recoverable to be passed on to phonology and the physical reality of the utterance, or vice versa.

This section has presented syntactic evidence that supports the conceptual arguments for the non-identity of IS and LF and the direct derivation of IS from S-structure. This proposal, of course, entails a model of grammar that departs somewhat from the traditional T-model.

9. Conclusion

The analysis of the structural representation of logico-semantic notions evolved hand in hand with the study of their interpretive import in a comprehensive theory of logical semantics. In contrast, the study of the structural representation of informational relations proceeded, for the most part, without a parallel comprehensive theory of information packaging. Once such a theory is taken into account, expectations about what the syntactic representation of information packaging is are likely to change.

The paper has taken a particular theory of information packaging as a point of departure and looked into the structural realization of informational relations as defined in this theory. Immediately, it becomes clear that, in Catalan, informational relations are a major determinant of surface syntactic structure. In English-type languages, however, the overt structural representation of information packaging is mostly the responsibility of prosody. One single informational meaning is realized by means of different structural configurations in different lan-

guages. Despite this contrast, this paper suggests that there is an abstract level of pure informational representation, IS, where differences between languages in the overt realization of information packaging are neutralized. IS mediates between surface syntax and the informational component, just as LF mediates between surface syntax and logical semantics. Thus, the interpretive rules that bleed IS are the same for all languages, independent of the overt structural realization of information packaging.

This work, of course, focuses on only two language-types. In the future other language-types, several of which are represented in the papers in this volume, must be taken into account so as to check the validity of the proposal. Consideration of other language-types is likely to lead to changes in the actual IS configuration proposed here or to the establishment of some kind of parametric variation in relation to IS. What is less likely to change is the conviction that the representation of information packaging is as important a part of syntax as the representation of theta structure, case structure, or logico-semantic structure, and that the syntax/information-packaging interface is analogous to the syntax/logico-semantic interface. This, of course, may entail a change in our standard conception of grammar, but it may just be the price to pay if information packaging, which has long remained evasive to formal linguistics, is to be integrated into the general theory of language.

Notes

* A much earlier version of this work was presented at the 16th GLOW Colloquium at Cambridge University in April, 1990, and a first written version of that talk appeared as part of Chapters 5 and 6 in my dissertation (Vallduví (1992a)). I am indebted to R. Frank, A. Kroch, C. Heycock, J. Hoeksema, M. Moser, E. Prince, B. Santorini, R. Zanuttini, and audiences at presentations of this work for a shower of comments and suggestions, and to K. É. Kiss for her interest in this work and her patience as editor of this volume. Of course, any errors and omissions remain my own responsibility. This paper was written while I was at the Universitat Autònoma de Barcelona on a postdoctoral research fellowship from the Research and Technology Division of the Spanish Ministry of Science and Education.

1. Information as defined here is different from the more comprehensive notion of information in Situation Theory, where the information conveyed by an event, linguistic or nonlinguistic, is what we learn about a situation from that event.

2. Heim's notion of file is actually closer to a discourse model, seen as a participant's evolving model of the current discourse, than to (a subset of) the knowledge-store, understood as a general cognitive construct. Here, only the basic file-card metaphor is adopted and extrapolated to the knowledge-store with the necessary changes. No reference will be made to other aspects of Heim's theory (method of truth-value computation, etc.).

3. As inferrable from the contents of this section, information packaging is held to be autonomous with respect to logical semantics. This view is at odds with another family of approaches that take precisely the opposite tack. In Vallduví (1992a) some of the arguments that would apparently favor the latter approaches are discussed and countered. As for the notion of "identificational" focus (Kiss (this volume), Horvath (this volume)), it largely corresponds to the tailful instructions in the instruction-based system, but it is

stripped of its logico-semantic exhaustiveness import (cf. Horn (1991) for the view that exhaustiveness in focus is a conversational implicature).

4. Authors who believe wh-words in wh-questions are narrow foci (e.g. Rochemont (1986), Horvath (this volume)) do not agree with the claim that prominence is necessarily associated with focus, given that in wh-question wh-words are not prominent. This belief, however, is not unproblematic (cf. Erteschik-Shir (1986)).

5. Sentences (8b) and (8c) are marginally possible with an extreme metalinguistic flavor as a correction of pronunciation or other aspect of the utterance. In Hungarian, which has a fixed focal prominence as well, the same phenomenon exists (cf. Horvath (1986)).

6. A different analysis of left-detachment is found in Cinque (1990), who argues for the base-generated status of left-detached phrases. As for the analysis of clitics, the structural description adopted here entails a view of clitics as base-generated preverbally following Strozer (1976) and Suñer (1988), *inter alia*.

7. Alternatively, the object may be weakly pronominalized. Weakly pro-nominalized elements (Catalan clitics, English unstressed pronouns) remain within the core IP, but are not "visible" qua informational elements. Their presence in the clause is due to other structural requirements. Weak pronouns appear within the focus-delimiting brackets in some examples below, but must not be considered part of the focus. Strong pronouns, in contrast, may enter an informational instruction as full-fledged elements of the focus or the ground.

8. Positing a detachment of the [+TNS] verb to a clause-peripheral adjunction position may seem an unusual proposal. However, if V0 adjoins to IP, the trace in I0 is properly governed by the detached [+TNS]-carrying verb, a necessary condition to license verbal empty categories, according to Koopman (1984). Also, this proposal runs counter to the Head Movement Constraint (HMC), but see Torrego (1984) and Kayne (1990) for analyses where X⁰ is adjoined to XP as well.

9. This analysis of focus-preposing is able to generate some strings that are underivable in the traditional analysis, but unfortunately it also overgenerates. Consider (i-iii) ((i)=(21)):

- (i) El MERCEDES el Jordi no sap qui s' ha comprat.
the Mercedes the Jordi no knows who self has bought
'The MERCEDES Jordi doesn't know who bought.'
- (ii) a. EL MERCEDES el Jordi qui s'ha comprat no sap.
b. EL MERCEDES no sap el Jordi qui s'ha comprat.
c. EL MERCEDES no sap qui s'ha comprat el Jordi.
d. EL MERCEDES qui s'ha comprat no sap el Jordi.
e. EL MERCEDES qui s'ha comprat el Jordi no sap.
- (iii) a. *EL MERCEDES no sap el Jordi s'ha comprat qui.
b. *EL MERCEDES qui no sap s'ha comprat el Jordi.

(i) and the additional strings in (ii), some of which the traditional analysis cannot account for, are correctly predicted by the right-detachment analysis. But those strings in (iii) are also predicted to be correct, even though they are utterly ungrammatical. Apparently, the verbal string and the complementizer have to be right-detached in one single group for reasons that will have to remain unexplained for the time being. The small residue in (iii) cannot be accounted for, but, in any event, more cases are covered here than in the traditional analysis. Within grammaticality, some of the sentences in (ii) are

less natural or frequent than others. An account of such gradation will not be attempted here.

10. Rooth (1985) and Horvath (1986) dismiss earlier counterexamples to focus weak crossover (in e.g. Solan (1984)) because they involve a "free variable" reading, where focus is coreferential with a pronoun to the left by chance. (47b), however, is not subject to this criticism because it reflects a true bound reading. In (47b) *his parents* is a contrastive link and is therefore realized with an L+H* pitch accent (cf. Section 4). This does not affect the crossover effect in any way.

References

- Adams, M. (1987) "From Old French to the Theory of Pro-drop," *Natural Language and Linguistic Theory* 5, 1–32.
- Antinucci, F. and G. Cinque (1977) "Sull'ordine delle parole in italiano: l'emarkinazione," *Studi di Grammatica Italiana* 6, 121–146.
- Baltin, M. (1982) "A Landing Site Theory of Movement Rules," *Linguistic Inquiry* 13, 1–38.
- Bonet, E. (1990) "Subjects in Catalan," *The MIT Working Papers in Linguistics (Papers on Wh-movement)* 13, 1–26.
- Bonet, S., and J. Solà (1986) *Sintaxi generativa catalana*, Enciclopèdia Catalana, Barcelona.
- Chafe, W.L. (1976) "Givenness, Contrastiveness, Definiteness, Subjects, Topics, and Point of View," in C. Li, ed., *Subject and Topic*, Academic Press, New York.
- Chomsky, N. (1976) "Conditions on Rules of Grammar," *Linguistic Analysis* 1, 75–109.
- Chomsky, N. (1977) "On Wh-movement," in P. Culicover et al., eds., *Formal Syntax*, Academic Press, New York.
- Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.
- Chomsky, N. (1991) "Some Notes on Economy of Derivation and Representation," in R. Friedin, ed., *Principles and Parameters in Comparative Grammar*, MIT Press, Cambridge, Massachusetts.
- Chomsky, N., and H. Lasnik (1977) "Filters and Control," *Linguistic Inquiry* 8, 425–504.
- Cinque, G. (1990) *Types of A'-dependencies*, MIT Press, Cambridge, Massachusetts.
- Contreras, H. (1991) "On the Position of Subjects," in S.D. Rothstein, ed., *Perspectives on Phrase Structure: Heads and Licensing (Syntax and Semantics 25)*, Academic Press, New York.
- Culicover, P., and M. Rochemont (1983) "Stress and Focus in English," *Language* 59, 123–165.
- Erteschik-Shir, N. (1986) "Wh-questions and Focus," *Linguistics and Philosophy* 9, 117–149.
- Farkas, D. (1986) "On the Syntactic Position of Focus in Hungarian," *Natural Language and Linguistic Theory* 4, 77–96.
- Fernández-Soriano, O. (1989) "Strong Pronouns in Null-Subject Languages and the Avoid Pronoun Principle," *The MIT Working Papers in Linguistics (SCIL I)* 11, 228–239.
- Gazdar, G. (1979) *Pragmatics: Implicature, Presupposition, and Logical Form*, Academic Press, New York.
- Halliday, M.A.K. (1985) *An Introduction to Functional Grammar*, Arnold, London.
- Heim, I. (1983) "File Change Semantics and the Familiarity Theory of Definiteness," in R. Bauerle et al., eds., *Meaning, Use and Interpretation of Language*, de Gruyter, Berlin and New York.

- Horn, L. (1981) "Exhaustiveness and the Semantics of Clefts," *NELS* 11, 125–142.
- Horn, L. (1989) *A Natural History of Negation*, University of Chicago Press, Chicago.
- Horvath, J. (1986) *FOCUS in the Theory of Grammar and the Syntax of Hungarian*, Foris, Dordrecht.
- Huang, C.T.J. (1982) "Move-wh in a Language Without Wh-movement," *The Linguistic Review* 1, 369–416.
- Huang, C.T.J. (1984) "On the Distribution and Reference of Empty Pronouns," *Linguistic Inquiry* 15, 531–574.
- Jackendoff, R. (1972) *Semantic Interpretation in Generative Grammar*, MIT Press, Cambridge, Massachusetts.
- Jacobs, J. (1986) "The Syntax of Focus and Adverbials in German," in W. Abraham and S. de Meij, eds., *Topic, Focus, and Configurationality*, John Benjamins, Amsterdam and Philadelphia.
- Kayne, R. (1990) "Romance Clitics and PRO," *NELS* 20.2, 255–302.
- É. Kiss, K. (1981) "Structural Relations in Hungarian, a 'Free' Word Order Language," *Linguistic Inquiry* 12, 185–213.
- Koopman, H. (1984) *The Syntax of Verbs*, Foris, Dordrecht.
- Koopman, H. and D. Sportiche (1982) "Variables and the Bijection Principle," *The Linguistic Review* 2, 139–160.
- Kroch, A., B. Santorini and C. Heycock (1988) "Bare Infinitives and External Arguments," *NELS* 18, 271–285.
- Pierrehumbert, J. and J. Hirschberg (1991) "The Meaning of Intonational Contours in Discourse," in P.R. Cohen et al., eds., *Intentions in Communication*, MIT Press, Cambridge, Massachusetts.
- Prince, E.F. (1986) "On the Syntactic Marking of Presupposed Open Propositions," *CLS (Parasession)* 22, 208–222.
- Prince, E.F. (1992) "The ZPG Letter: Subjects, Definiteness, and Information-Status," in S.A. Thompson and W.C. Mann, eds., *Discourse Description*, John Benjamins, Amsterdam and Philadelphia.
- Reinhart, T. (1982) "Pragmatics and Linguistics: An Analysis of Sentence Topics," *Philosophica* 27, 53–94.
- Rochemont, M. (1986) *Focus in Generative Grammar*, John Benjamins, Amsterdam and Philadelphia.
- Rochemont, M. (1989) "Topic Islands and the Subjacency Parameter," *Canadian Journal of Linguistics* 34, 145–170.
- Rooth, M. (1985) *Association with Focus*, Doctoral dissertation, University of Massachusetts, Amherst.
- Rosselló, J. (1986) *Gramàtica, configuracions i referència. Per una teoria alternativa del PRO-drop romànic*, Doctoral dissertation, Universitat de Barcelona, Barcelona.
- Solà, J. (1992) *Agreement and Subjects*, Doctoral dissertation, Universitat Autònoma de Barcelona.
- Solan, L. (1984) "Focus and Levels of Representation," *Linguistic Inquiry* 15, 174–178.
- Steedman, M. (1991) "Structure and Intonation," *Language* 67, 260–296.
- Strozer, J. (1976) *Clitics in Spanish*, Doctoral dissertation, UCLA, Los Angeles.
- Suñer, M. (1988) "The Role of Agreement in Clitic-doubled Constructions," *Natural Language and Linguistic Theory* 6, 391–434.
- Thwing, R., and J. Watters (1987) "Focus in Vute," *Journal of African Languages and Linguistics* 9, 95–121.
- Torrego, E. (1984) "On Inversion in Spanish and Some of its Effects," *Linguistic Inquiry* 15, 103–129.

- Välilmaa-Blum, R. (1988) *Finnish Existential Clauses: Their Syntax, Pragmatics, and Intonation*, Doctoral dissertation, Ohio State University, Columbus.
- Vallduví, E. (1991) "The Role of Plasticity in the Association of Focus and Prominence," *ESCOL 7*, 295–306.
- Vallduví, E. (1992a) *The Informational Component*, Garland, New York.
- Vallduví, E. (1992b) "Focus Constructions in Catalan," in C. Læufer and T.A. Morgan, eds., *Theoretical Analyses in Romance Linguistics*, John Benjamins, Amsterdam and Philadelphia.
- Vallduví, E. (1993) "Catalan as VOS: Evidence from Information Packaging," in W. Ashby et al., eds., *Linguistic Perspectives in the Romance Languages*, John Benjamins, Amsterdam and Philadelphia.
- Ward, G.L. (1988) *The Semantics and Pragmatics of Preposing*, Garland, New York.

6

An F Position in Western Romance

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1. Some Background

It has been argued that functional categories other than C, I, and D exist. The Infl skeleton has been "split" into categories that include several Agr nodes, Tense, and Aspect; likewise, the Det skeleton has been argued to present various Agr nodes, Number, or a Possession node. Splitting the Comp skeleton has a long tradition. Reinhart's (1979) analysis was based on the premise of two such nodes in certain languages, the origin of what is now commonly referred to as "CP recursion". And again several nodes have been argued to correspond to the Comp skeleton, a matter I want to discuss here.

But first I want to lay out my ground-rules. One, this is a research program. Surely there are alternatives in terms of features in single categories, instead of positing multiple categories each corresponding to a feature. I will not explore this alternative view here.

Two, both a formal and a substantive issue arise the minute one posits a new category. The formal one is proving the existence of the category in terms of some empirical evidence. The substantive one is determining what that category is, how it differs from others, etc. The second issue is too ambitious at this stage, and I will only have some conjectures to offer about the nature of the category I am positing. The first issue itself is non-trivial. It has to be determined whether the hypothesized category is a single category or an array of categories, is a head or a maximal projection, is higher or lower than other categories within the Phrase Marker. The main purpose of this paper is to deal with these sorts of questions for a given category I hypothesize.

Three, evidence adduced for a given proposal is relative to a framework, and it may count only within that framework. I assume the essentials of Chomsky's (1993) *Minimalist* program. This means, to start with, that I cannot assume