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Category Switching: Configurational Effects of Verb Movement

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Category Switching:
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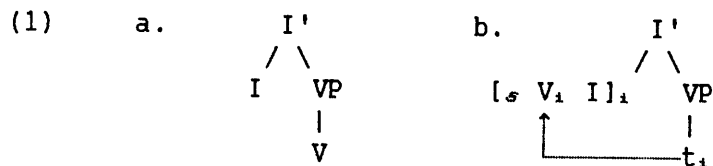
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There are two possible means by which an S-Structure Inflected Verb can be constituted. The first is by moving the inflectional affixes heading IP at D-Structure onto the verb (I-to-V), in a manner similar to that proposed by Chomsky for English (1955, 1957), and convincingly restated by Pollock (1987, 1988); the second is carried out by raising the verb to INFL (V-to-I), as originally proposed by Emonds (1978) for French, and also maintained in Pollock's recent work. I will argue in section 1, that the application of V-to-I in Spanish -defined as head-to-head movement or incorporation along the lines set by Travis (1984), Chomsky (1986), and Baker (1988)-, triggers a Category Switching operation that alters the structure of the sentence in a manner unparalleled by languages having I-to-V instead. In sections 2 and 3, I will examine the distinct interaction between the principle of government and the configurationally contrasting S-Structures belonging to the two languages, and I will argue that most of the syntactic asymmetries generally considered to be effects of the prodrop or null-subject parameter, can be consequently derived from the choice between the V-to-I or I-to-V strategies.

1.0 As argued by Baker (1988), incorporations -such as the simplified version of V-to-I portrayed in (1)- are only allowed if the trace left by the moved X^0 element satisfies the ECP (2). The question that concerns us at this stage is the definition of the

category δ of the resulting compound [δ V I], and its role in the general configuration of V-to-I languages.¹



(2) ECP (after Chomsky, 1986: 88)

A trace must be properly governed,
where proper government is antecedent-government.

(3) GOVERNMENT (Chomsky, 1986: 9)

α governs β iff α m-commands β and there is no γ , γ
a barrier for β , such that γ excludes α .

Given the definition of government (3), the trace must be properly governed, and therefore, the maximal lexical projection VP intervening between it and its antecedent the verb, in (1b), cannot be a barrier. The burden of voiding the VP barrier, in order for it to be transparent to government, is assumed by the L-marking requirement of (4).

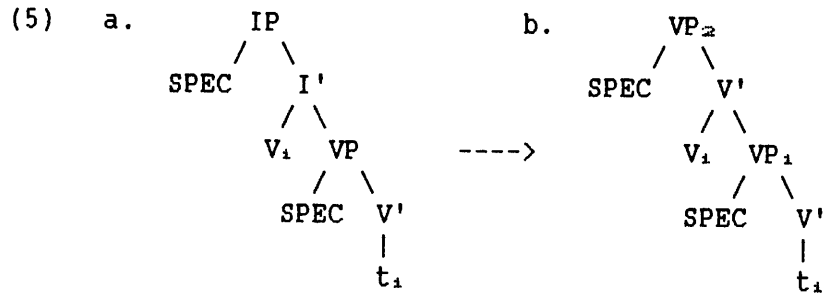
(4) HEAD MOVEMENT CONSTRAINT (Chomsky, 1986: 71)

Movement of a zero level category β is restricted to the position of a head α that governs the maximal projection γ of β , where α θ -governs or L-marks γ if $\alpha \neq C$.

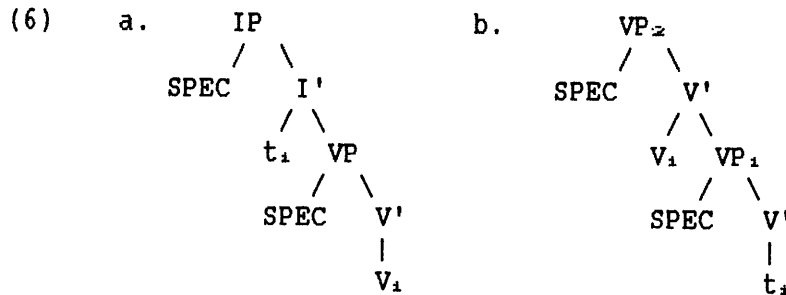
In essence, though INFL cannot L-mark the VP, for it is functional in nature, and only lexical X^0 elements are capable of carrying out this function, the incorporation of V-to-I endows the compound with lexical content, and allows it to L-mark the VP node in (1b). Accordingly, if the compound [δ V I] can L-mark, it has to be an X^0 lexical item, and its category must be V.

1.1 Consider now the structure (5a), corresponding to (1b), with the category of the compound specified. Notice that this is an impossible representation since it violates the principle of endocentricity belonging to X-bar theory: a lexical X^0 element, namely V, heads the IP projected by INFL at D-Structure. Exocentric phrases such as the IP in (5a), must not arise as a result of the application of "category changing" incorporations. Thus, in order to maintain the endocentric character of syntactic phrases, every time the category of an X^0 element is altered as a consequence of incorporation, its projections must follow suit. Naturally, the application of Category Switching after the incorpora-

tion of V-to-I, will create an S-Structure similar to (5b), containing only endocentric phrases.



1.2 The two representations in (6) portray in general terms the S-Structure configurational contrast between I-to-V and V-to-I languages. The syntactic structure of languages like English does not suffer any major configurational alterations throughout its derivation, albeit the inflexional elements in (6a) no longer occupy their D-Structure position. Languages like Spanish, on the contrary, substitute the D-Structure IP by an S-Structure VP, developing a two-layered VP, with both maximal nodes projected from two elements of the same chain, namely the verb and its trace.



A second difference between the two languages, derived from the contrast between (6a) and (6b), and relevant to the rest of this paper, concerns how subject NPs obtain case at S-Structure. While in English nominative case is assigned by the trace of INFL, nominative case is assigned by the lexical verb heading VP_z in Spanish.

Despite the important structural differences accused by (6a) and (6b), the Category Switching Hypothesis accounts for our intuitions concerning the nature and role of the underlined items in the two corresponding sentences in (8): they are both verbs and each heads a VP.

- (7) a. Mi vecino apoya siempre al partido liberal.
 b. My neighbour always supports the liberal party.

2.0 The principal word-order difference between Spanish and English can be accounted for on the basis of the interaction between the contrasting S-Structures in (6) and the principle of government (3). The interpretation of the Spanish sentence as a two-layered VP, allows the subject NP to receive nominative case in a number of structural positions which in English are opaque to government by INFL, and thereby to nominative case assignment.

2.1 Spanish allows the three possible combinations between V(erb), S(ubject) and O(bject) exemplified in (8), while English permits only one of these potential orders, as evidenced by the corresponding sentences in (9).

- (8) a. El huracán destruyó las cosechas. (SVO)
 b. Destruyó el huracán las cosechas. (VSO)
 c. Destruyó las cosechas el huracán. (VOS)

- (9) a. The hurricane destroyed the crops. (SVO)
 b. *Destroyed the hurricane the crops. (VSO)
 c. *Destroyed the crops the hurricane. (VOS)

The apparent word order freedom of Spanish is actually a property of subjects alone: the ungrammatical sentences in (10) prove that any change in the position of the object, short of topicalization, results in ungrammaticality.

- (10) a. *El huracán las cosechas destruyó. (SOV)
 b. *Las cosechas el huracán destruyó. (OSV)
 c. *Las cosechas destruyó el huracán. (OVS)

Since the Case Filter requires phonetically realized NPs to bear case, we can safely assume that the reason behind the contrast between (8) and (9) is that, in Spanish, subjects are accessible to nominative case assignment in more structural positions than they are in English. Following common practices in the framework of GB, nominative case assignment is carried out under government (3) by an element occupying the position of INFL in D-Structure. We will assume that I-to-V -as in (6a)- is a process located in the syntactic component, and that its trace is the element responsible for assigning nominative case to the subject NP; it could be postulated, alternatively, that I-to-V belongs to PF, and that INFL (rather than its trace) is the element that assigns nominative case before it moves into the VP. In either case, the lexical verb will not play a role in the assignment of nominative case in English. In Spanish, since V-to-I is a subpart of Move- α , it consequently applies prior to case assignment, and the element that assigns nominative case at S-Structure is the compound identified as the lexical verb. The positions in the sentence where a subject NP can obtain nominative case will be those governed by the trace of the functional element INFL in (6a) and by the lexical verbal complex in (6b).

The government conditions required for the assignment of nominative case to the subject NPs in the SVQ examples (8a) and (9a) are identically met, since these NPs are structurally parallel: they occupy the SPEC of IP in English, the SPEC of VP_2 (<IP) in Spanish. The explanation for the asymmetry between the (b) and (c) pairs requires, however, closer scrutiny.

The position of the NP bearing nominative case in the VSO alternative (9b), cannot be other than the SPEC of VP_1 (<VP), which we will consider to be the D-Structure position of the subject in Spanish, following proposals by Fukui and Speas (1984), Koopman and Sportiche (1986) and Sportiche (1988), which posit the subject in a VP internal position at D-Structure. The principal implication resulting from this analysis is that the order SVQ is not basic, but derived by raising the subject from the SPEC of VP_1 to the SPEC of VP_2 , while the order VSO reflects the D-Structure order, abstracting the movement by the verb. The contrast between the two languages under consideration follows from the fact that in English, the node VP is a barrier while in Spanish, VP_1 is not; accordingly, an NP in the SPEC of VP in (6a) cannot be governed by INFL nor receive nominative case, while in (6b), an NP in the SPEC of VP_1 is in the government domain of the Inflected Verb. To make this explicit, consider the definition of exclusion stated in (11), which is required by government (3), and the abstract configuration (12).²

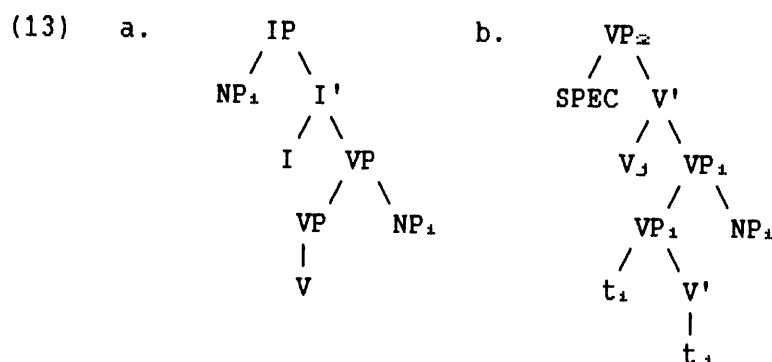
(11) EXCLUSION (Chomsky, 1986: 9)

γ excludes α if no segment of γ dominates α .

(12) ... δ ...[τ ... α ...[τ ... β ...]]

The position of the Inflected Verb in (6b) corresponds to that of the variable α in (12), while the SPEC of VP_1 corresponds to β , and the maximal nodes VP_2 and VP_1 stand, from left to right, for the two occurrences of γ , which -we recall- are projected from two coindexed elements belonging to the same chain, hence they can be considered to be two segments of the same VP. Notice that in (12), α (V) is not excluded from γ (VP), and is thus able to govern β (the NP in the SPEC of VP_1).

The subject NP in the VOS example in (9c) can be thought of as being adjoined to the right of VP, as proposed by Belletti (1988). Our analysis differs, however, in that it considers the inversion of the subject to be part of the general rule Move- α , and not a language specific rule of "Romance Inversion". Where Belletti lowers the subject NP and leaves a phonetically null expletive pronoun in the SPEC of IP, as shown in (13a), we raise it from the SPEC of VP_1 , and leave a properly governed trace to mark its D-Structure position, as shown in (13b).³



As a result, subjects in Spanish enjoy a relative freedom of movement, which is not possible in English. The structural domain governed by the inflected verb in Spanish extends well beyond the domain governed by the trace of INFL; besides governing an NP in the SPEC of VP₂, corresponding to the SPEC of IP in English, the verb can also reach inside VP₁, and assign case to an NP in configurations which surface as VSO and VOS.

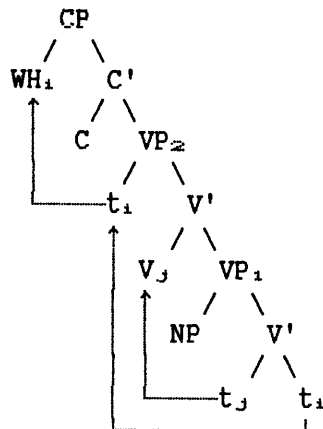
3.0 Barriers and government domains are differently determined for English and Spanish because of the S-Structure configurational contrast shown in (6a) and (6b). As expected, the two languages comply with the ECP in their own manner, and therefore exhibit asymmetric effects in structures where WH movement applies.

3.1 The contrast between the Spanish and English examples in (14) and (15) can serve to illustrate some of the more direct consequences of the distinct S-Structures proposed for these languages, and formalized under (5) above.

- (14) a. ¿Qué compró Juan?
 b. *¿Qué Juan compró?
 c. ¿Con qué cortó Juan el pan?
 d. *¿Con qué Juan cortó el pan?
- (15) a. *What did buy John?
 b. What did John buy?
 c. *With what did cut John the bread?
 d. With what did John cut the bread?

Spanish does not allow the subject NP to appear to the left of the verb in WH questions, whereas this is the only possible order in English. The explanation of the English facts need not detain us here: the WH phrase leaves the VP by means of adjunction to VP, as proposed in Chomsky (1986). In Spanish, however, the SPEC of VP₂ serves as an escape hatch for WH phrases, for it is a position belonging to VP, yet not totally included in it nor dominated by VP₁:

(16)



The SVO order cannot be obtained in (14b) and (14d) because the subject NP cannot move into the SPEC of VP₂ since this position is occupied by the intermediate WH trace. As shown in connection with (8b) above, the subject NP in (15) can receive case from the inflected verb in the SPEC of VP₁; clearly the subject NP has also the option to be postposed to the right of VP, as was described in relation to (8c).

3.2 Linguistic operations must not be thought to be language specific. If Category Switching applies in Spanish and not in English, it is not because the rule exists in one language while it does not in the other; the difference is that the conditions for its application arise only in one of the two languages. Contrariwise, the use of adjunction as a strategy for the extraction of phrases from VP (following the procedure as defined by May (1986) and Chomsky (1986)), is an available strategy for Spanish. This language, while allowing WH phrases to be extracted by these means, also permits simpler derivations through the use of the default escape hatch, namely, SPEC of VP₂. The difference between the two languages, in the final analysis, is that where Spanish has two different possibilities to carry out the extraction of WH phrases out of VP, English has only one. The immediate consequence of this difference can be seen in the resulting contrast between the examples in (17) and (18).⁴

(17) ¿A quién₁ no sabía Juan qué_J había comprado Pedro
t_J t₁?

(18) *To who(m)₁ did John not know what_J Peter had bought
t_J t₁?

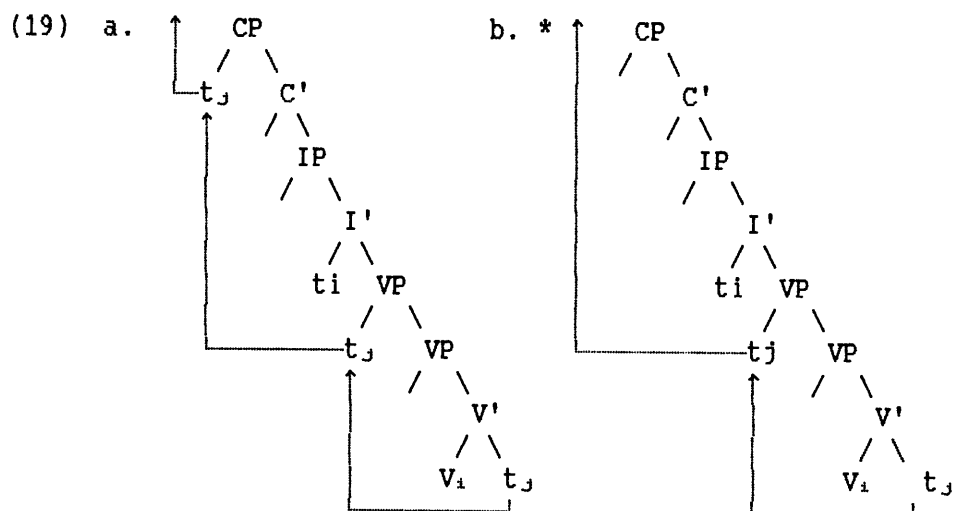
In the Spanish example (17), two WH phrases are extracted from VP, one via the SPEC of VP and the other by means of adjunction to VP, while in the English example (18), only one such extraction is possible. The distinct available procedures for extracting WH phrases from VP in these two languages, are supplemented, higher

in the tree, by yet another structural difference concerning the functional nodes IP and CP.

The principal consequence of explaining the contrast between (17) and (18) in structural terms, is that there is no need to postulate, as done by Rizzi (1978), a parameter specifically designed to establish which nodes should be computed for the determination of subjacency in particular languages. Instead, one single formula -with different structurally determined results- should be applicable to the two languages under consideration. In his very important article, Rizzi proposed that prodrop languages define S' (CP) as the node relevant for subjacency, whereas languages like English choose S (IP) instead. His observation was clearly correct, the node IP does not play a role in determining how WH elements are extracted in Spanish, though not because of a parametric choice, but due to the fact that there is no IP node at S-Structure. Given this, the establishment of bounding conditions in Spanish rests principally on CP. In English, both CP and IP will determine bounding conditions.

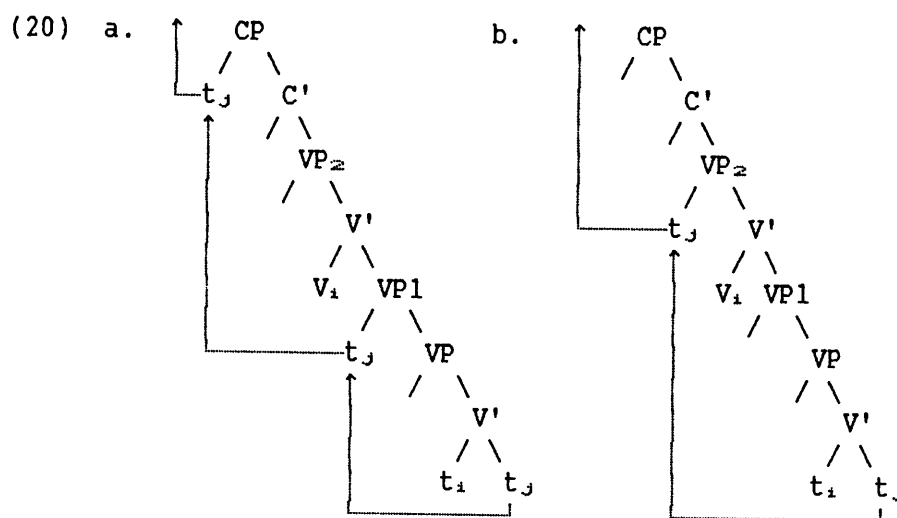
I will contend that two contiguous functional nodes constitute a barrier to government. The relevant nodes to be computed are IP and CP, and as will become clear from the discussion here and in 3.3 below, the node C', when headed by a complementizer, must also be counted. Also, the notion of "inheritance" will prove to play a role in this respect: potential functional bounding nodes, when directly above a voided barrier (VP), will not play a role in the determination of functional barriers.

In English, the only manner to extract a WH element from a sentence is that portrayed in (19a): the WH phrase must land in the SPEC of CP prior to moving into the higher sentence to accomplish the Comp-to-Comp effect. The long WH movement -skipping CP- portrayed in (19b) is not possible.



In contrast, Spanish allows the two extraction strategies shown in (20). In English, the node IP is not computed for determining functional barriers when the extraction is from VP, for the VP barrier must have been previously voided. In (19a) the extraction is possible because only C' is crossed, while in (19b) two nodes -C' and CP- intervene between the two elements of the chain.

In Spanish, both the short and long versions of WH movement exemplified in (20a) and (20b) are possible: since C' is not computed because it is directly above the node VP₂, there are no bounding nodes crossed in the first case, there is only one in the second.



The nodes IP, C' and CP, though categorially distinct, are functionally equivalent for the determination of barriers. Due to this, they can be considered to bear the same label both for computing barriers as well as for voiding them. In order to extract a WH word from a functionally bounded sentence of English, the movement must be via the SPEC of CP, i.e. from the position corresponding to α in (12), where the two nodes γ will be CP and either C' or IP depending on the particular construction.

$$(12) \dots\delta\dots[\tau\dots\alpha\dots[\tau\dots\beta\dots]]$$

3.3 The interpretation of functional barriers presented in 3.2, can be extended in a natural way to include the contrast between English and Spanish, generally referred to by the name of "that-trace effects". Although this asymmetry has generally been considered to derive from the pro-drop or null-subject parameter, it has always been explained on independent grounds, rather than within a generalized framework as we will attempt to do here.

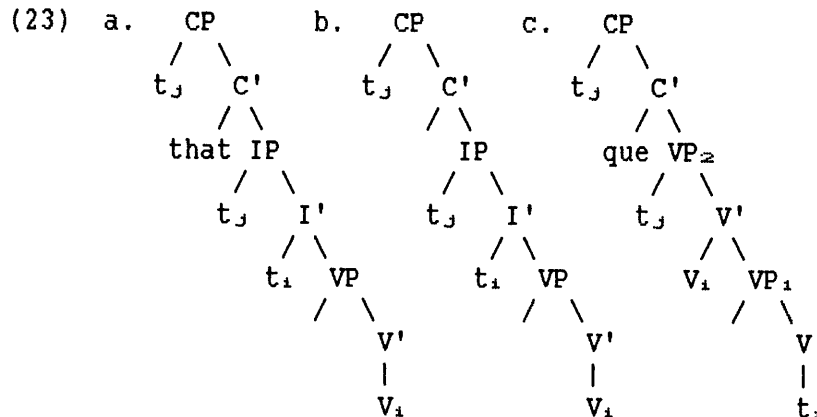
Spanish and English differ on how WH phrases are extracted from the subject position. English allows the movement only when

the complementizer is not present in the structure, as attested by (21), while in Spanish the subject is extracted freely over the complementizer, as evidenced by (22).

- (21) a. *Who_i did you say that t_i sells shoes?
 b. Who_i did you say t_i sells shoes

- (22) ¿Quién_i dices que t_i vende zapatos?

At first sight, it would seem that the complementizer that in (23a), corresponding to (21a), is a minimal barrier blocking government of the trace in the SPEC of IP by its antecedent; in its absence, as in (23b), the government relation can be appropriately obtained cf. (21b). In Spanish, the complementizer que does not act as a minimal barrier, wherein the trace in subject position is properly governed by its antecedent in the SPEC of CP - (23c)-, as proved by the grammatical outcome (22).



The structural parallelism exhibited between the representations in (19) and (20) on the one hand, and those in (23a) and (23c) on the other, permits the two apparently distinct sets of properties to be explained on the same grounds. Notice that the main difference between the two sets of extractions in English, is that the node IP in (23a) and (23b), in contrast to (19a), must be computed for determining functional barriers since it is not situated directly above a voided VP barrier. The sentence (21a) corresponding to (23a) is ungrammatical because the two relevant WH traces are separated by two functional bounding nodes IP and C' -which must be considered a functional minimal bounding node because it is headed by a complementizer-. The example (21b) is grammatical because in the absence of the complementizer, C' remains transparent, and the trace in the SPEC of IP is properly governed. The extraction in Spanish over the complementizer, portrayed in (23c) and corresponding to (22), is possible because the site of extraction is the SPEC of VP₂ instead of the SPEC of IP: the node VP₂ is not a barrier for extractions from its SPEC, nor is it computed as part of the functional complex. The node C' will be the only func-

tional bounding element between the two traces, and will not be sufficient to constitute a functional barrier. In fact, C' in Spanish is directly above the voided VP barrier, and therefore only the node CP is a potential functional bounding node. Since CP, by itself, cannot constitute a barrier, the long extraction strategy portrayed in (20b) applies directly to subjects:

- (24) Quién_i no sabía Juan qué_j había comprado t_i t_j?
 who not knew John what had bought
 `*Who_i did John not know what_j t_i had bought t_j?'

4.0 A number of syntactic asymmetries between English and Spanish, traditionally related to the so-called prodrop or null-subject parameter, have been accounted for in a principled manner by deriving them from the S-Structure configurational contrast proposed for these languages. The application of V-to-I in Spanish, and the concomitant redefinition of the D-Structure projections of INFL as projections of V, create a vast government domain for the assignment of nominative case: the subject NP is free to occupy certain positions in the sentence from which the subject in English is barred. In addition, the switching of IP into VP (VP₁), automatically converts the SPEC of VP₁ into a perfect escape hatch for extractions -both from VP₁ and from the sentence-. The absence of this position in English restricts the number of WH phrases that can be extracted from a sentence, as well as the means to carry it out.

The contrast between the two languages evidences the underlying presence of a syntactic parameter. Nevertheless, it must not be conceived as a list specifying the series of syntactic constructions that must cooccur in a language given the particular value assumed, for parameters are not implicational by nature. Needless to say, the factor that triggers either V-to-I or I-to-V is the grammatical cue that unquestionably suits the label of parameter, yet its identification requires far more attention than can be given here; suffice it to say, for the time being, that it dictates only the choice of strategy employed for the formation of the inflected verb. Given this, the S-Structure configurational contrast and the syntactic asymmetric properties generally mentioned in relation to the prodrop or null-subject parameter, are consequently derived from the application of general invariant principles of grammar.

NOTES

* I wish to express my gratitude to María-Luisa Rivero for reading and making invaluable comments on several earlier versions of this paper. Thanks also to Phil Branigan, Paul Hirschbüller and Esthela Treviño for lending an ear and for their much appreciated comments.

1 The factor that determines the different direction taken by the movement in the two languages, must be found in the constitution of their functional categories. If Pollock (1987b) is correct and the verb do heads AgrP in English, then verbs in this language cannot leave the VP, for the lowest head position of the functional layer is occupied. Movement is possible only in the absence of do, i.e. auxiliaries in English and all verbs in Spanish can raise.

2 I assume that the index of the moved verb is (1b) percolates and becomes the index of the X⁰ compound. This can be carried out by means of an indexing algorithm similar to that proposed by Aoun, Hornstein and Sportiche (1981) for Comp-indexing.

3 The representation (12) is not identical to the configuration proposed by Chomsky (1968:9) and May (1986) for adjunctions, which we reproduce in (i):

(i) ...δ...[τ α [τ...β...]]

(12) is more general than (i), it applies to all two-layered configurations, including adjunctions.

4 The postulation of a specific structure and rule for the description of "Romance Inversion", whether in the form of (13a) or (13b), goes against recent proposals denying the existence of language specific rules or structures (Chomsky, 1988). If (13) exists in Romance, then the same operation, yielding grammatical results, should be possible in English, for an NP adjoined to VP (independently of its D-Structure position) can receive nominative case from INFL, cf. (13a), even in the absence of Category Switching. The absence of inversion in English, cf. (9c), evidences that the effect known as "Romance Inversion" is not produced by adjunction to VP. The subject can probably be freely generated to the left or right in a SPEC of VP position, but only in languages where Category Switching applies, will it be accessible to nominative case assignment.

5 The notion of Economy of Derivation (Chomsky, 1988) is particularly relevant here. Given the choice of strategies for the extraction of WH phrases from VP, the use of VP₂ as an escape hatch will be more economical than the creation of an adjunction, and therefore preferred.

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