Asymmetries on Wh-movement and Specific DP-s

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0. Introduction*

The purpose of this paper is to examine some of the syntactic properties of a phenomenon that has often been considered as belonging to the domain of semantics or pragmatics, that of the specificity of nominals, in the light of its property of constraining movement from within its domain.

The paper will not consider but a very reduced subset of phenomena related to the topic; in concrete, I will restrict myself to cases of Wh-extraction asymmetries in connection with specific nominals introduced by the definite article *el/la* ('the') in Spanish; thus, neither specificity domains introduced by a determiner other than the definite article nor the scope of quantifiers base-generated within these domains will be considered. Nevertheless, the consequences of the analysis might hopefully extend to other related contexts.

The analysis I will present reduces the asymmetric behavior of the different arguments with respect to their extraction possibilities from a specific DP, which I call the *Det(erminer)-trace effects*, to the *that*-trace phenomenon, and subsumes these cases of the specificity constraint to the ECP. The apparent differences between the two paradigms are then derived from the distinct nature of the functional head involved in each system.

Section 1. presents the basic relevant data and briefly considers the possible connection of this phenomenon with other restrictions on Wh-movement of NP-internal arguments, what is usually called Cinque's generalization, as well as an

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attempt of unification proposed by Torrego (1987). Departing from previous analyses, section 2. develops the core of our analysis, which treats the specificity constraint as unified to the *that*-trace effects. Based on several facts related to pied-piping in Romance languages, I first argue in section 2.1. for a projection higher than DP in the nominal system that displays properties similar to CP in its sentential correlate. Given this, an analysis where the strong determiner *el/la* ('the') moves to the head of that projection gives the right configuration to explain the asymmetries under discussion in terms of Minimality and the ECP. Extending Lasnik & Saito's (1984) mechanism of γ-marking to the DP-system, it is argued that the argument/adjunct distinction with regard to the level of application of that mechanism is also supported by the behavior of agent arguments of nominals, despite apparent evidence to the contrary given in the literature. It is argued that only if we treat agents of NPs as true arguments with respect to γ-marking can we explain the lack of specificity effects when such an agent is moved not directly from the specific nominal but from a generic DP embedded in a specific one, reconstructing an argument that was central in Lasnik & Saito's discussion of the *that*-trace paradigm.

Finally the discussion in section 3. of some general remarks and further implications of the analysis closes the paper.

1. The "Opacity" of Specific DP-s

A difference that distinguishes Spanish from other Romance languages is that specific DPs introduced by the definite article *el/la* ('the') constitute a domain from which extraction of certain types of elements is impossible. Compare the grammaticality of the French example in (1a) with its Spanish counterpart in (1b):[1]

(1) a. Rembrandt, dont$_{ag}$ j'ai vu [$_{DP}$ le portrait d'Aristote t$_{ag}$]...
b. *Rembrandt, del que$_{ag}$ he visto [$_{DP}$ el retrato de Aristoteles t$_{ag}$]...
Rembrandt, of (by) whom I have seen the portrait of Aristotle

As already observed in the literature, these specific domains are not absolutely opaque to movement, and the different elements in the nominal behave differently with respect to Wh-extraction, depending on the thematic relation they bear to the nominal head: thus, while Wh-movement of subjects and adverbials from these domains are totally out, objects can more easily move out of specific DPs. These differences are exemplified in (2a, b and c) respectively:

(2) a. De qué cantante$_{obj}$ salieron publicadas [$_{DP}$ *LAS*/algunas fotos t$_{obj}$]?
Of what singer were the/some photos published?

(1) The examples in (1) are taken from Torrego, who attributes the French version to Ruwet (1972). A caveat is necessary here with respect to the contrast in (1) since, as observed by Koldo Sainz (personal communication), examples involving non-restrictive relative clauses do not constitute a totally satisfactory check for extraction out of a specific DP, and it is not so clear that the same restrictions on movement do not show up with Wh-phrases in other Romance languages as well. Observe that even in Spanish, sentences involving non-restrictive relative clauses, such as (1), are considerably better than their Wh-parallels, like the ones considered immediately below. A more detailed study of the particular structures where these specificity effects appear remains to be done. See section 2 for discussion of some other cases; see also Giorgi & Longobardi (1991, ch. 2, fn. 10) and Torrego (1987, fn. 15) for discussion.

b. De qué $autor_{ag}$ has leído [$_{DP}$ *LOS*/varios libros t_{ag}]?
By what author have you read *THE*/some books?
c. De qué $país_{adv}$ conoces [$_{DP}$ *LAS*/muchas ciudades t_{adv}]?
From what country do you know *THE*/many cities?

The asymmetry between complements, on the one hand, and subjects and adjuncts, on the other, is rather familiar from other domains of syntax in various languages, and seems closely related to those cases of Wh-movement out of IP that are commonly accounted for by the ECP. There has been considerable discussion, however, on whether this specificity restriction on Wh-movement can be unified with a second well studied phenomenon concerning Wh-movement out of nominals. The general observation, which is sometimes called Cinque's generalization, is that, among the elements present in a nominal, only the highest one with respect to the hierarchy in (3) can be the target of a cluster of transformations; these include Wh-movement, possessivization, and genitive-cliticization, exemplified in (4-6) respectively.[2]

(3) Possessor > Agent > | Object |
| Adverbial |

(4) a. [De qué pintor]$_{ag}$ han robado [$_{DP}$ varios retratos t_{ag}]?
[Of (by) what painter]$_{ag}$ have they robbed [several portraits t_{ag}]?
b. * [De qué pintor]$_{ag}$ han robado
[$_{DP}$ varios retratos t_{ag} [de ese coleccionista]$_{poss}$] ?
[Of (by) what painter]$_{ag}$ have they robbed
[several portraits t_{ag} [of that collector's]$_{poss}$]?

(5) a. [$_{NP}$ $SU_{obj\ ag\ poss.}$ retrato] b. ?* [$_{NP}$ SU_{obj} retrato [de Picasso]$_{ag}$]
his-clitic portra his-clitic$_{obj}$ portrait [of Picasso]$_{ag}$
c. *[$_{NP.}$ SU_{ag} retrato [de Picasso]$_{poss}$]
his-clitic$_{ag}$ portrait [of Picasso]$_{poss.}$

(6) a . [Ne]$_{obj}$ è stato scoperto [$_{NP}$ il furto t_{obj}
[Of-it]$_{obj}$ has been discovered [the theft t_{obj}]
b. * [Ne]$_{obj}$ è stato scoperto [$_{NP}$ il furto t_{obj} [del custode]ag]
[Of-it]$_{obj}$ has been discovered [the theft t_{ob} [of the guardian]$_{ag}$]

This observation has been the center of much attention, especially among romanists, during the past years,[3] and different hypotheses have been entertained in an attempt to deal with the problem. Most of these works assume some condition that blocks direct movement from any internal position, forcing this argument then to "externalize" in some relevant sense. Since the property of being the most external argument is univocal, no element lower in the hierarchy can move if a more

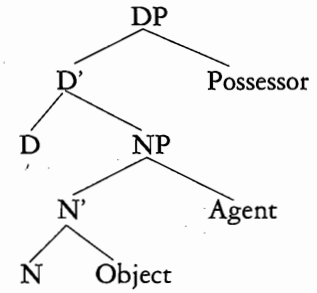
(2) Spanish lacks genitive clitic (It. *ne*, Fr., Cat. *en*); the Italian examples of *ne*-cliticization in (6) are taken from Cinque (1980).

(3) See, among others, Ruwet (1972), Milner (1977), Cinque (1979, 1980), Zubizarreta (1979), Aoun (1982), Torrego (1985, 1987), Pollock (1989), Ormazabal (1991), Giorgi & Longobardi (1991), and references cited in these works.

"prominent" element, the external(ized) one, is present. In practice, this requires any argument within the nominal to move successive cyclically through any available higher specifier.[4]

Torrego (1987) assumes a DP-structure like (7), where the hierarchical order in (3) is structurally captured in X-bar and θ-theoretical terms:[5]

(7)



She then appeals to Minimality to force the Wh-movement through the specifier positions, which accounts for most of the facts covered by Cinque's generalization.[6] If a higher element is present, (i.e., base generated in an intervening specifier), successive cyclic movement is blocked and the trace left behind, unable to be γ-marked (in Lasnik & Saito's (1984) sense), violates the ECP.

In order to extend this account to the specifity constraint on extraction exemplified in (2), Torrego (1987) argues that the determiner *el* ('the'), when in its 'strong' version, raises to the Spec of DP at LF in Spanish.[7] Adapting Lasnik & Saito's (1984) mechanism of γ-marking, she proposes that the complement/non-complement asymmetries triggered by the presence of the article are due to a crucial distinction in the level at which the different types of traces are licensed: while object-traces are γ-marked at S-structure, prior to the movement of the article to the specifier of DP, the traces of the moved adverbials and, according to her analysis, those of subjects are not licensed until LF. Although the movement is basically the same in all cases,

(4) This assumption is common, as far as I know, to all the approaches to the topic, except for Pollock (1989) and Ormazabal (1991) [see the end of section 3. below], although the principles and conditions appealed to in order to force these results differ from one analysis to another. Cinque's (1980) original proposal was made in terms of Opacity conditions. Subsequent work in the literature, however, has shown that Wh-traces are not subject to Binding Condition A [see especially Rizzi (1980) and Freidin & Lasnik (1981); Cinque himself acknowledges this problem in the mentioned paper]; therefore, the generalization has to be captured in different terms. Although different proposals have been made in the literature (see references in the previous footnote), I will center my discussion on Torrego's hypothesis, where a unified account is proposed for these and the asymmetries that concern us more directly.

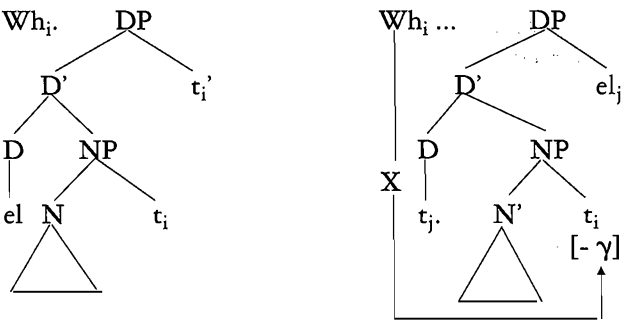
(5) To be precise, Torrego (1987, sect. 5) argues that the possessor is base-generated within NP, in a predication relation with the noun, and then raises to the specifier of DP in the syntax. Since the position of the possessor will not be central to the discussion in this paper, I will not consider this possibility here.

(6) See Torrego (1987) for details and discussion; see also Stowell (1989) for a similar approach in terms of Subjacency.

(7) As Torrego observes, there are some configurations where despite the presence of the determiner *el/la* ('the') heading the DP, the nominal is interpreted as generic, and extraction is therefore possible (see section 2.3. and especially footnote 20. below). The terminology *strong/weak determiners* is thus a descriptive device to distinguish those determiners that induce specificity effects from those that do not.

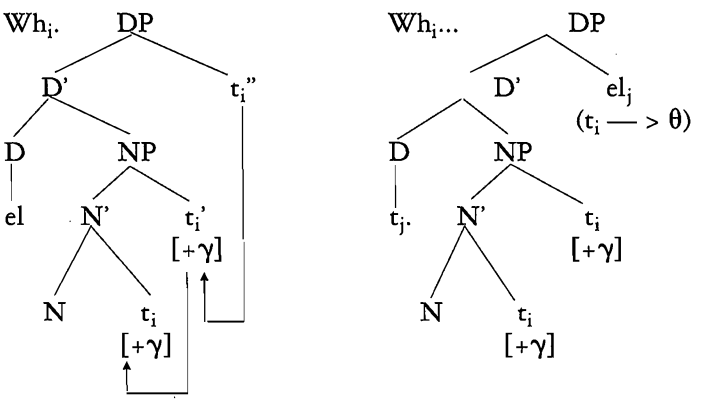
the raising of the determiner to the specifier position of DP at LF blocks antecedent government of the trace in subject position since, under Torrego's approach, this subject trace will not be γ-marked until LF. Examples (8a-b) show the relevant S-structure and LF representations obtained from the extraction of the subject or adverbial Wh-phrase:

(8) a. S-Structure b. LF



The trace of the object, on the other hand, is assigned [+γ] at S-structure by the intermediate trace in [Spec, NP] which, in turn, is also γ-marked by the trace in [Spec, DP], prior to the deletion of this trace and the raising of the determiner at LF:

(9) a S-Structure b. LF



In this analysis, then, the two phenomena are unified by resorting to the unaccessibility of the specifier of DP as an intermediate landing site for the Wh-phrase when a possessor or the strong determiner occupy that position; at the same time, the two phenomena yield different results, since the determiner, unlike the possessor, does not occupy that position until LF. The theoretical implications of this approach have multiple ramifications which cannot be considered at length here; let me briefly discuss, however, some of the consequences that follow from the auxiliary

assumptions the hypothesis is forced to make concerning, especially, the argument structure of nominals.

1.1. *The Argument Structure of Nominals*

The question of what the argument structure of nouns consists of and how it is realized in the syntax has played an important role in generative grammar in the last two decades. Its theoretical interest is in part due to the fact that an underlying assumption of the theory since Chomsky (1970) is that the thematic structure of verbs and the related nouns is basically the same; at the same time, and despite this thematic relationship, NPs have shown a considerable resistance to reduce to well behavior in several respects under current assumptions about argument structure and its syntactic realization. As is usually the case, the study of related areas of research can bring some light to the problems at stake. In what concerns us in this paper, there are two fundamental respects where arguments of nouns and verbs are assumed to differ under the standard approach to extraction outlined above.

The first assumption concerns the status of the nominal subject with respect to g-marking: in order to obtain the right object/subject asymmetries with respect to extraction out of specific DPs, it is assumed that subjects are g-marked at LF rather than at S-Structure. This property of NP-subjects not only distinguishes them from objects but also from VP-subjects and, more generally, from arguments. There is, in fact important evidence that some classes of nouns do not take thematic arguments at all,[8] but in those cases neither the agents nor the objects form part of the argument structure of the nominal and, therefore, these nouns are irrelevant with regard to the object/subject asymmetries at stake. In the remaining cases where the nominal head has its own argument structure, however, the main motivation for pairing subjects along with adjuncts with respect to γ-marking seems relatively weak and rather a mere redefinition of the problem in different terms. Chomsky (1986) suggests that this could be due to the optionality of these arguments in the NP system; notice, however, that *de (of)*-agents in Romance behave as true arguments in most respects; moreover, their apparent optionality seems to be due to a systematic ambiguity of argument-taking nouns, which can also be used in a non-eventive reading, as largely argued by Grimshaw (1990). Furthermore, assimilating *de*-agents to adjuncts would undermine the necessary distinction between these arguments and their *por* ('by') counterparts, which behave as true adjuncts in all respects.

A closely related matter concerns the status of internal complements with regard to proper government; the analysis of Cinque's asymmetries in terms of Minimality forces the assumption that objects, like subjects and adjuncts, have to be governed by their antecedent from the immediately higher specifier and cannot be lexically governed. If lexical government were to be eliminated altogether and the disjunctive definition of proper government reduced to antecedent government, we still would need some mechanism that permits the less local movement of the complements of

(8) See Grimshaw (1990) and references cited there for extensive discussion of this and related topics.

verbs (and, presumably, VP-subjects in Romance languages), as compared to adjunct or preverbal subject Wh-movement. Suppose, for instance, that this is achieved by means of antecedent government of the complement trace by an intermediate trace adjoined to VP, as proposed by Chomsky (1986, sect. 11.). The question then would be whether there is any independent motivation, other than the empirical observation on Wh-extraction over a realized specifier itself, to prevent the same mechanism in NP; the lack of such a principled way to distinguish the two systems in this respect raises some questions about the stipulative character of that move. In the works I am considering here, on the other hand,[9] the hypothesis that complements of nouns have to be antecedent governed implies the assumption that nouns, unlike other lexical heads, are not able to lexically govern their complements. It has been sometimes argued that nouns and adjectives do not have the ability to directly assign θ-roles to their complements and they need the support of a prepositional element that "transfers" the θ-roles that they have to discharge to the complement. If so, the impossibility of lexically governing their complements could be derived from their defective character as θ-assigners.[10] Whether these are the correct results is a question that depends to a large extent on other theory internal matters; in the specific cases discussed here, this conclusion is directly connected to the first assumption concerning γ-marking of agents discussed above: since, by assumption, objects in the DP system are not lexically governed and, therefore, they have the same status as subjects with regard to proper government, this difference between objects and subjects cannot be appealed to to derive the asymmetric behavior of the two types of elements with respect to their extractability from specific DPs; since, on the other hand, the movement is basically the same except for the first step in the derivation of the object Wh-movement, the difference must be attributed to some independent licensing condition of the traces that distinguishes objects from agents. This is Then achieverd stipulating a difference in the level at which object and subject traces ara γ-wasked.

If, on the contrary, we assumed that objects can be properly governed also within NP, the object/subject asymmetries could be accounted for by this difference in rather familiar terms, without making the additional (and, from my point of view,

(9) See especially Torrego (1987) and Chomsky (1986, sect. 8.). Torrego does not make any explicit mention of the concrete definition of the ECP she is assuming. Notice, however, that in order for her hypothesis to work properly, that hypothesis has still to distinguish between VP and NP-objects in the way their traces are licensed; otherwise, Wh-movement of objects in the IP system would always be blocked via Minimality.

(10) Another possibility worth exploring is to make the ability of a lexical head to properly-govern its object dependent on its Case-assignment possibilities. This approach would be consistent with the difficulty of moving elements that are assigned inherent Case, discussed in Chomsky (1986a). Moreover, several works in the literature (see Lasnik & Saito (1984) and Chomsky (1986), among others) explore the relationship between lexical-government and Case-assignment.

There is, however, a crucial difference between these approaches and the assumption we would have to make in order to derive the right results with respect to the object of the NP: in the former, Case assignment is incorporated into the definition in a disjunctive way, in order to allow lexical-government of some traces that otherwise would be incorrectly predicted to violate the ECP. In order for the trace of the NP-complement not to be lexically governed, however, Case-assignment would have to be introduced as an additional condition narrowing the configurations where the relevant relation between the head and the trace applies. Although not totally impossible a priori, such a definition of 'lexical-government' seems to be too narrow for other configurations.

problematic) stipulation that subjects also differ in the two systems with regard to γ-marking. This second approach is indeed supported on empirical grounds: as already noted by Torrego (1987), movement of agents or adjuncts across an occupied specifier yields much more severe violations than complement extraction in the same configurations, contrary to what the Minimality hypothesis would predict. Observe the contrast in (10a-b); the object extraction in (10a), though degraded, is far better than (10b) where the extracted element is an agent:

(10) a. ?? [De qué obra]$_{obj}$ has leído
[$_{DP}$ varios ejemplares t_{obj} [de Juan]$_{poss}$]? (=1b)
[Of what work]$_{obj}$ have you read
[$_{DP}$ several copies t_{obj} [of John's]$_{pos}$s]?

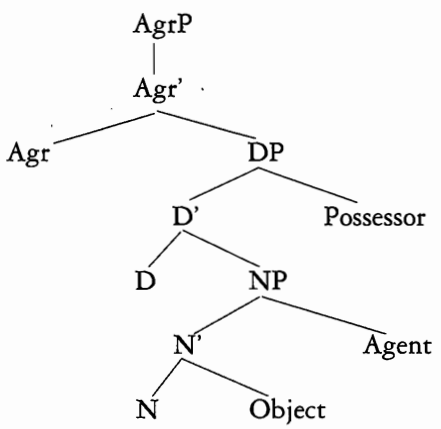
b. * [De qué pintor]$_{ag}$ han robado
[$_{DP}$ varios retratos t_{ag} [de ese coleccionista]$_{poss}$]? (=2b)
[Of (by) what painter]$_{ag}$ have they robbed
[several portraits t_{ag} [of that collector's]$_{poss}$]?

The milder character of the violation when object-extraction is involved suggests, in turn, a subjacency-based explanation of these effects, a matter to which I briefly return in section 3.

2. The Determiner-trace Effect

Torrego, in work in progress, already sets the basis for a possible alternative approach that overrides various undesired consequences of the theory sketched in the previous section: she argues for a functional projection, AgrP, that under her analysis would be immediately dominating DP; according to her analysis, the structure of the nominal would then be as in (11):

(11)



Taking advantage of this additional position, Torrego (personal communication) slightly reanalyzes the difference between the 'strong' version of the definite article and other determiners in the following terms: in opposition to other determiner

heads, which remain in their base-generated position within DP, the strong definite article incorporates into the AGR head at LF. The LF-movement of the definite article (or, to be more precise, the complex [Det+Agr] head resulting from this movement) is what makes AgrP (rather than DP) a barrier for subject and adjunct extraction out of the nominal, basically in the same terms proposed in the previous analysis. Thus, following that line of reasoning, there is one step in the movement up that crosses AgrP; since this projection is made a barrier by the incorporation of the definite article to the Agreement head position at LF, there is (at least) one trace in the resulting chain that fails to be antecedent-governed at that level. Following the previous assumption, extraction of an agent or an adverbial is then ruled out by the ECP since, the original trace being γ-marked at LF, all the traces in the chain (including the offending one) have to be present.

It is worth mentioning that Torrego's proposal is not the only case in the literature where an additional functional projection over DP has been proposed. Based on some extraction phenomena in Greek, Horrocks & Stavrou (1985) argue for a structure of NP that would mirror that of the CP projection, and work by Szabolsci (1987) and Abney (1987) also suggests that such a projection is needed. In what follows, I will present some new facts related to pied-piping of DPs in Wh-movement in Spanish that also seem to support the claim that there is a functional projection over DP that can be used as the landing site for Wh-phrases.

2.1. *Pied-piping and the Structure of DP.*

In Spanish, the linear order in which the different elements appear within a nominal is quite free, apparently as the result of an optional scrambling process that adjoins the most embedded complement to the right of the nominal; thus, when more than one element appears modifying the nominal, these elements can show up in almost any order to the right of the noun head:

(12) a. El cuadro [de las Meninas] [de Velazquez]
The painting [of the Meninas] [of Velazquez]
b. El cuadro [de Velazquez] [de las Meninas]
The painting [of Velazquez] [of the Meninas]
"The painting of the Meninas by Velazquez"

Two apparently complementary restrictions can be observed with respect to the optional scrambling rule: in multiple Wh-constructions where the DP-internal Wh-element is not fronted to the Wh-Comp until LF, this phrase has to remain in situ at S-structure and cannot scramble over another element at this level; observe the following contrast between (14a-b), comparing it with the free order in (13):

(13) a. Pedro conocía [el retrato [de Las Meninas]$_{obj}$ [de Picasso]$_{ag}$]
Pedro knew [the portrait[of the Meninas] [of Picasso]]

b. Pedro conocía [el retrato [de Picasso]$_{ag}$ [de las Meninas]$_{obj}$]
Pedro knew [the portrait [of Picasso] [of the Meninas]]
"Pedro knew the portrait of the Meninas by Picasso"

(14) a. Quién conoce [el retrato [de quién]$_{obj}$ [de Picasso]$_{ag}$]?
Who knows [the portrait [of whom]$_{obj}$ [of Picasso]$_{ag}$]?
b. * Quién conoco [el retrato [de Picasso]$_{ag}$ [de quién]$_{obj}$]?
Who knows [the portrait [of Picasso]$_{ag}$ [of whom]$_{obj}$]?
"Who knows the portrait of whom by Picasso"

As an alternative strategy to extraction out of DP, Spanish allows, at least marginally, pied-piping of the entire DP containing the Wh-element to the Wh-Comp, as represented in (15):

(15) [$_{DP}$ El retrato [de quién]]$_i$ ha dicho Juan que vieras t_i en el museo?
[$_{DP}$ The portrait [of whom]]$_i$ has said Juan that see-you t_i at the Museum?
"Who told you Juan to see the portrait of at the Museum?"

When this alternative strategy is used, the Wh-element that triggers this operation has to show up necessarily in the rightmost position within the nominal, and it cannot remain in situ:[11]

(16) a. [La estatua [en el jardín]$_{adv}$ [de qué diosa]$_{obj}$]$_i$
te ha dicho Juan que había reconocido t_i]?
[The statue [in the garden]$_{adv}$ [of what goddess]$_{obj}$]$_i$
has Juan told you that he recognized t_i]?
"What goddess has Juan told you that he recognized the statue of
in the garden?"
b. * [La estatua [de qué diosa]$_{obj}$ [en el jardín]$_{adv}$]$_i$
te ha dicho Juan que habia reconocido t_i?
[The statue [of what goddess]$_{obj}$ [in the garden]$_{adv}$]$_i$
has Juan told you that he recognized t_i?
"What goddess has Juan told you that he recognized the statue of
in the garden?"

An obligatory scrambling operation that adjoins the Wh-element to the right whenever pied-piping is involved could be responsible for the contrast in (16), but there seems to be no obvious reason why this rule should be obligatory just in that context, especially when Wh-phrases do not seem to scramble in other contexts, as shown in (14). Moreover, an analysis in that direction would in addition have to guarantee that in these particular constructions non-Wh-elements (say, *en el jardín* in (16)) must stay 'in situ' and cannot scramble over the (already adjoined) Wh-element since, otherwise, a sentence like (16b) would be incorrectly ruled in with a representation like (17):[12]

(17) [$_{DP}$[$_{DP}$[$_{DP}$La estatua t_{obj} t_{adv}] [de qué diosa]$_{obj}$] [en el jardín]$_{adv}$] ...

(11) It should be kept in mind that, as structurally represented in the example, the reading of (16b) relevant for the discussion is the one in which *de qué diosa* and *en el jardín* do not form a constituent; in other words, the intended meaning of the DP is that 'there is a statue that represents a goddess and the statue is located in the garden', and not that 'there is statue that represents a goddess in the garden', which would be the reading of the DP if *de que diosa en el jardín* formed a single constituent.

(12) For the sake of exposition, I assume that the scrambled element adjoins to DP, although it is not totally clear to me whether this is the right assumption.

A more plausible hypothesis seems to be an obligatory "fronting" of the Wh-phrase within the DP as a condition for pied-piping to take place;[13] i.e. a Wh-type movement of the phrase to the specifier position of the highest projection in the nominal. That this projection is higher than DP is, in turn, suggested by the contrast between (18a) and (18b) below, where the specifier of DP is filled by the possessor element:[14]

(18) a ??[La fotocopia t_{obj} [de Pedro] [de qué libro]$_{obj}$]$_i$ dices
que has visto t_i?
[The fotocopy t_{obj} [of Peter] [of what book]$_{obj}$]$_i$ say-you
that have-you seen t_i?
"Peter's fotocopy of what book do you say you saw?"

b. * [La fotocopia [de qué libro]$_{obj}$ [de Pedro]]$_i$ dices
que has visto t_i?
[The fotocopy [of what book]$_{obj}$ [of Pedro]]$_i$ say- you
that have-you seen t_i?

Although, as expected, the sentence (18a) is already marginal, due to the intervention of the specifier of DP between the Wh-element and its NP-internal trace, it sharply contrasts with (18b), where the Wh-element appears before the possessor, presumably in situ.

The functional projection over DP, thus, is playing the same role that CP is playing at the sentential level; in particular, its specifier is the landing site for Wh-phrases in pied-piping configurations. If this is correct, it seems reasonable to generalize these results and to assume that it is also a position through which the Wh-phrase moves on its way out of the nominal, in the same way specifiers of intermediate CPs are landing sites for the Wh-element in Comp-to-Comp movement at the sentential level.

2.2. *Det- vs. That-trace Effects.*

In the light of this discussion, we can now reconsider the asymmetries presented in (18) above with regard to the specific DPs headed by the definite article *el/la* ('of') in Spanish. More concretely, let us assume, with Torrego, that what distinguishes this determiner from the others is that it moves to the functional head that governs it (following terminology by Horrocks & Stavrou (1985), I will denominate this maximal projection dominating DP *K(omp)P*);[15] but, contrary to Torrego's assump-

(13) The term 'fronting' is used only in order to suggest the parallelism between this process and movement to [Spec, CP]. It goes without saying that it should not be understood in its strict sense, which seems to suggest a specific directionality of the process.

(14) As in the cases in (16) above (see footnote 12), (18b) has to be distinguished from (i), where *Pedro* is the possessor or, preferably, the author of the book, and not the possessor of the copy. The sentence with this particular reading is, of course, absolutely perfect:

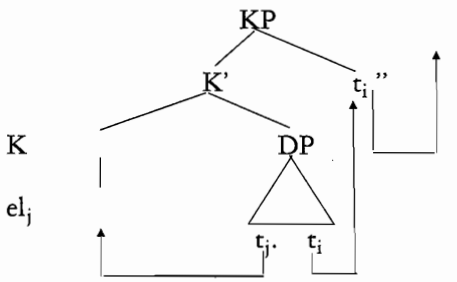
(i) [La copia [de qué libro [de Pedro]]]$_i$ dices que has visto t_i?
[The copy [of what book [of Pedro]]]$_i$ say-you that have-you seen t_i?
"The copy of what book by Pedro/of Pedro's what book did you say that you saw?"

(15) Not to be mistaken with K(ase) Phrase, used in various other works in the literature.

tion, let us assume that this movement takes place at S-structure. Furthermore, suppose that Wh-phrases have to move successive cyclically through the specifier of that projection. With those rather natural assumptions, the S-structure derivation of sentences like (2) above, repeated here under (19), would be roughly as in (20):

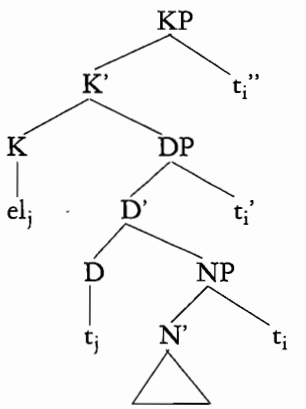
(19) a. De qué cantante$_{obj}$ salieron publicadas [$_{DP}$ *las*/algunas fotos t_{obj}]?
Of what singer were the/some photos published?
b. De qué autor$_{ag}$ has leído [$_{DP}$ **LOS*/varios libros t_{ag}]?
By what author have you read **THE*/some books?
c. De qué país$_{adv}$ conoces [$_{DP}$ **LAS*/muchas ciudades t_{adv}]?
Fom what country do you know **THE*/many cities?

(20) De qué$_i$...



Restricting our attention to the subject extraction in (19b) for a moment, its S-structure representation would be as in (21):[16]

(21) De qué$_i$..



Assuming the Minimality Condition proposed in Chomsky (1986) to hold for antecedent government, the trace t_i' in (21) is protected from being antecedent-governed

(16) I will leave aside here several issues related to the successive movement through (Spec, DP) assumed standardly; for the sake of simplicity, I will assume that agent Wh-phrases move through this position in their way out, although the motivations for this obligatory movement are in this case due to more general considerations independent of Wh-movement, having to do with Case theory; see Ormazabal (1991) for discussion. If that possibility is correct, the intermediate trace in (Spec, DP), being the element that receives Case in an A-chain, is not deletable, contrary to what has been assumed in the standard approach. Alternatively, it could be argued, contrary to the standard theory, that (Spec, DP) as well as (Spec, NP) are not possible positions for Wh-movement. I will come back in section 2.3. and 3. to the status of the (Spec, DP) position with respect to movement.

from (Spec, KP) by the K head if the strong determiner *las* ('the') has raised at S-structure, before γ-marking of the agent traces takes place.

From this perspective, the asymmetries with regard to extraction out of specific DPs is clearly reminiscent of a well known phenomenon in English and other languages: the *that*-trace effect. Both phenomena involve similar object/subject asymmetries, which suggests an ECP account of the distinction; in both cases the intervening factor blocking the relationship between the subject trace and its antecedent is the presence of an overt head (the complementizer *that* or the determiner *el/la*) in the projection from where the antecedent would otherwise succeed in governing the trace.[17] Considering all this, let us explore in more detail the parallelisms and, more important, the differences between these two phenomena. Compare the *that*-trace paradigm in (22-24) with the one in (25-27) involving the asymmetries at stake, which I will dub *Det(erminer)-trace effect*:

(22) a. Who$_i$ do you think [$_{CP}$ t$_i$' [$_{IP}$ t$_i$ left early]]?
b. * Who$_i$ do you thin [$_{CP}$ t$_i$' that [$_{IP}$ t$_i$ left early]]?

(23) a. What$_i$ do you think [$_{CP}$ [$_{IP}$ he bought t$_i$]]
b. What$_i$ do you think [$_{CP}$ that [$_{IP}$ he bought t$_i$]]?

(24) a. Why$_i$ do you think [$_{CP}$ t$_i$' [$_{IP}$ he left early t$_i$]]
b. Why$_i$ do you think [$_{CP}$ t$_i$' that [$_{IP}$ he left early t$_i$]]

(25) a. De qué autor$_{ag}$ has leído [$_{DP}$ varios libros t$_{ag}$]?
By what author have you read some books?
b. * De qué autor$_{ag}$ has leído [$_{DP}$ *LOS* libros t$_{ag}$]?
By what author have you read the books?

(26) a. De qué artista$_{obj}$ han salido publicadas [$_{DP}$ algunas fotos t$_{obj}$]?
Of what artist have some photos been published?
b. De qué artista$_{obj}$ han salido publicadas [$_{DP}$ *LAS* fotos t$_{obj}$]?
Of what artist has the photo been published?

(27) a. De qué país$_{adv}$ conoces [$_{DP}$ muchas ciudades t$_{adv}$]?
From what country do you know a lot of cities?
b. * De qué país$_{adv}$ conoces [$_{DP}$ *LAS* ciudades t$_{adv}$]?
From what country do you know the cities?

There is an obvious respect where the parallelism between the two paradigms breaks down: while one of the most characteristic properties of the phenomenon in (22-24) is the lack of *that*-trace effects with adjuncts, which pair together with complements, adverbial elements can be grouped together with agents, and not with objects, with respect to the Det-trace effects. When examined in detail, however, this difference seems to be more apparent than real, even if its solution, of course, depends in a lot of respects on the particular account we assume to explain the better known *that*-trace effect phenomenon. Following (a slightly modified) proposal by

(17) The parallelism between these two phenomena and, more generally, the similarities between the determiner and the complementizer are already pointed out by Torrego, though her concrete proposal does not pursue this relationship to a full extent.

Lasnik & Saito (1984), a difference between the two systems that could account for that fact immediately comes to mind:

Suppose with standard approaches that the *that*-trace asymmetry between subject and adjunct is due to the failure of the subject trace in the specifier of CP to γ-mark the original trace through the overt complementizen *that* at S-structure, but that γ-marking of adjunct-traces at LF is possible once the complementizer *that* has deleted. If some mechanism like that is correct, we can account for the different behavior of adjuncts in each paradigm by appealing to the distinct nature of the intervening head in both cases: while the complementizer *that* does not seem to have any intrinsic semantic content and, therefore, it has to delete at LF according to the principle of Full Interpretation, the import of the definite article in the semantic interpretation of the nominal is far from being null; in fact, it is partially responsible, among other things, for the specific interpretation of the DP. If, accordingly, the determiner cannot delete at LF, the same structural condition that blocked antecedent-government of the subject-trace at S-structure in the DP-system remains at LF (the level at which adjunct-traces have to be γ-marked) and, consequently, the Det-trace effects will also show up with adverbials.

The distinction that the impossibility of deleting the determiner at LF introduces in the system, then, accounts for the different extraction possibilities between CP and DP in a straightforward way: while the whole system conspires to separate complements and adjuncts from subjects in the *that*-trace phenomenon, the presence of the determiner *el/la* at LF will pair together subjects and adjuncts, distinguishing them from complements, which are lexically governed.

It has to be noticed that the analysis does not depend on the concrete mechanism we assume for blocking antecedent government of the subject in *that*-trace configurations, but it crucially relies on two independent assumptions: first, that subject and adjunct traces differ in the level at which their traces are licensed (by means of γ-marking or some other similar mechanism); second that the blocking effect of the head, whatever the concrete way of achieving it is, differs in the two systems, i.e. that it remains at LF in the DP system but not in the IP one. This second assumption seems well motivated under any account of the *that*-trace phenomenon that relies on Full Interpretation and the lack of semantic relevance on the part of the complementizer, as argued above. With respect to the first assumption, apart from being the null hypothesis from a theoretical point of view,[18] it also gives the correct empirical results with regard to extraction of the subject when we take a closer look at other relevant data. Section 2.3. will present a domain where the predictions made by our hypothesis crucially depends on this particular assumption.

2.3. *Avoiding the Specifity Constraint*

Observe that the hypothesis I have just presented derives the right results with respect to the set of empirical facts covered by the standard analysis; however, the theoretical assumptions underlying each proposal are different in several respects.

(18) See Lasnik & Saito (1984, in print) and Chomsky (1986) for discussion.

Moreover, contrary to what could appear at a first glance, the two hypotheses do not have exactly the same empirical scope and relevant configurations can be found where the two proposals differ in their predictions. In order to see this difference, we have first to consider a more complicated structure where the *that*-trace effect is also relevant.

Lasnik & Saito (1984) noted that in order for the *that*-trace effect to show up, the original trace of the subject and the filled complementizer have to be in the same embedded sentence. If, on the contrary, the subject has moved from a sentence in which the head of the CP projection is not realized, the presence of a *that* complementizer in a higher CP intervening between the Wh-phrase and the trace does not yield an ECP violation. The relevant examples are illustrated in (28a-b), their structural configuration being as in (28'a-b) respectively:

(28) a. * Who do you think that left early?
b. [Who [do you believe [that [Mary said [t_i [t_i left]]]]]]

(28') a. * WH_i... [$_{CP}$ that [$_{IP}$ t_i]]
b. WH_i... [$_{CP}$ that [$_{IP}$ ... [$_{CP}$ e [$_{IP}$ t_i]]

Under Lasnik & Saito's theory the contrast in (28) follows straightforwardly from the fact that in (28b) the complementizer *that* is absent from the most deeply embedded COMP. Given this, the trace t_i in subject position can be γ-marked at S-structure by the intermediate trace in the most embedded COMP (t_i' in (28")). Although this intermediate trace is not antecedent governed and, therefore, is assigned [-γ], it can in turn delete in the mapping from S-structure to LF:

(28") WH_i... [$_{CP}$ t_i" that [$_{IP}$ ... [$_{CP}$ t_i ' [$_{IP}$ t_i]]

X

-γ +γ

If the parallelism between the simple cases of *that*-trace and Det-trace effects is on the right track, we will expect the same asymmetry to arise when the relevant configurations of Det-*trace* effects parallel to those in (28) above are constructed at the DP level. Consider now the abstract structure in (29), the DP counterpart to Lasnik & Saito's structure in (28'b) above:

(29) WH_i... [$_{KP}$ el [$_{DP}$ ... [$_{KP}$ e [$_{DP}$ t_i]]

Given that the two theories of the Det-trace effects under analysis differ with respect to the level at which the trace of the subject is licensed, the predictions are different in each case: although under both theories the original trace can be antecedent governed from [Spec, KP] ([Spec, DP] in Torrego's system), in either analysis there must be one trace in the chain which is not antecedent governed. If γ-marking of the subject-trace takes place at LF, as assumed in the standard analysis, a Wh-extraction of the subject out of a configuration like the one in (29) should be ruled out by the ECP. This is so because the offending intermediate trace has to be present at that level, and it cannot be deleted. If, on the other hand, the initial subject-trace

is γ-marked at S-structure, as proposed here, the offending intermediate trace can be deleted prior to LF and the sentence is predicted to be grammatical. Indeed, this prediction is born out; compare (30a) with (30b):[19]

(30) a. * [De qué pintor]$_{ag}$ has visto [$_{DP}$ los cuadros t_{ag}]
'By Which painter have you seen the paintings?'
b. (?) [De qué autor]$_{ag}$ has visto
[$_{DP}$ la reproducción de [$_{DP}$ algunos cuadros] t_{ag}]
'Of which author have you seen
the reproduction of some paintings?'

It is a well-known fact that the specificity of a DP considerably decreases, or even disappears, when some types of complements modify the nominal element, even if this nominal is introduced by the definite article. As we would expect, when the definite DP is more likely to be interpreted as generic, as in the case of (31b), the specificity effects tend to disappear, contrasting with (31a) where the preferred reading is the specific one and extraction is not possible:

(31) a. * De qué orador has oído los discursos?
By which orator have-you heard the speeches?
b. ?? De qué orador has oído los discursos más interesantes?
Of which orator have-you heard the speeches most interesting
By which author have you heard the most interesting speeches?'

In (31b), although the definiteness effect of the complement NP introduced by the definite article is maintained, the interpretation given to the NP tends to be the non-specific one, and Wh-extraction improves considerably.[20]

Considering this, one could argue that the improvement in the extractability of the agent argument out of the definite DP when it moves from a more embedded DP that is non-specific, as in (30b), can be due to the fact that the non-specific complement from where the Wh-subject moves makes the whole definite DP non-specific, as in the case of the comparative element in (31b). In order for our argu-

(19) Although the concrete grammatical status of (30b) is not totally clear (it goes from "good" to "marginal" depending on the speakers), all speakers I have consulted (including myself) agree that there is a sharp contrast between the totally ungrammatical (30a) and (30b), which improves considerably. This improvement also contrasts with cases where the moved element is an adjunct, as in (36b) to which I will immediately come back.

As for the marginality of (30b), two factors can plausibly be playing a role here: on the one hand, even with objects, Wh-movement out of a DP already embedded within another DP is slightly marginal, independently of whether the DPs are specific or not (see also footnote 24. below).

On the other hand, it could be the case that although the original trace is γ-marked and, consequently, no violation of the ECP occurs, crossing of the KP in which the determiner is incorporated results in a subjacency violation. It is not clear to me at this point what the relevant factor (if any) is.

(20) As noted by Koldo Sainz (p. c.), this (not totally well understood) fact is even true with some elements, such as demonstratives, which typically yield much stronger specificity effects than definite articles, as can be observed in minimal pairs like (ia-b) [the latter adapted from Giorgi & Longobardi (1991), who report some similar contrasts in Italian (see their footnote 10. to chapter 2.)]:

(i) a. * De qué autor has leído [los/esos libros t]?
'By which author have-you read the/those books?'
b. ?? De qué autor has leído [los/esos libros t con la cubierta azul]?
'By which author have-you read the/those books with the blue cover?'

ment to go through, thus, we have to guarantee that this is not true in this case, and that the complement does not affect the specificity of the upper DP. That the specificity of the DP is not affected by its non-specific complement can be seen, however, by comparing sentences like (44a-b), where the only difference is the position from where the agent-argument is extracted:

(32) * [De qué cantante]$_{ag}$ has visto [la actuación t_{ag}]
Of which singer have you seen the performance?

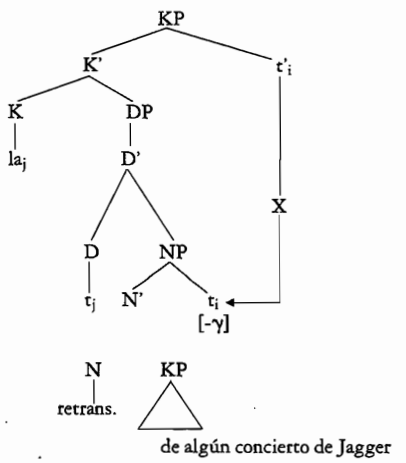
(33) a. (?) [De qué cantante]$_{ag}$ has visto
[la retransmisión de varias actuaciones t_{ag}]
Of (by) which singer have you seen
[the transmission of several performances t]?

b. * [De qué televisión]$_{ag}$ has visto
[la retransmisión [de varios concierto(s) de M.Jagger] t_{ag}]?
[Of (by) which TV-channel] have you seen
[the transmission [of several concerts by M. Jagger] t]?

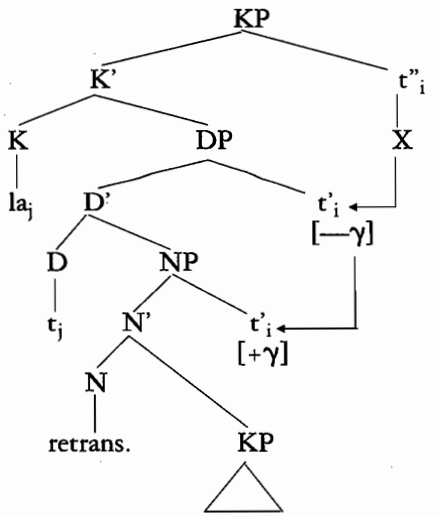
The contrast between (32) and (33a) basically reproduces the one observed between (30a) and (30b) above. The difference between (33a) and (33b), however, shows that the contrast is not due to the effects of the embedded DP-complement on the specificity of the higher-most definite DP: as illustrated by (33b), when the moved Wh-phrase is the subject of the main DP, i. e. when this movement takes place directly from the DP introduced by the definite article *la*, the sentence is uniformly perceived as strongly deviant, even if the non-specific complement is still present. The hypothesis presented in the paper accounts for this contrast by attributing it to the failure of the intermediate trace in [Spec, KP] to antecedent-govern the (Spec, DP) trace of the subject in (33b) when the determiner has incorporated to the head of KOMP, as represented in (34):[21]

(21) Alternatively, if the second hypothesis in footnote 17. is correct, it would be the *original* trace in (Spec, NP) the one that is assigned [-γ] as in (i); see immediately below and section 3. for discussion:

(i)



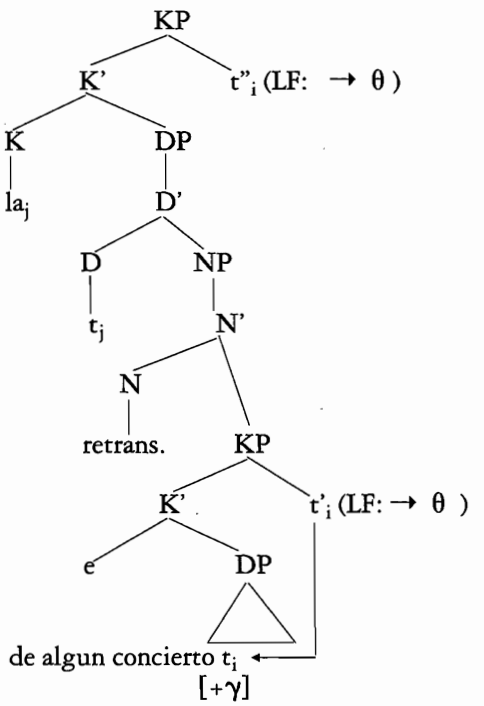
(34)



de algún concierto de M. Jagger

In (33a), on the other hand, the trace of the subject can be governed by its closer antecedent in the Spec position of the embedded KP which in turn deletes in the mapping from S-Structure to LF and the *Det-trace* effects can be avoided. This is represented in (35):

(35)



Notice that if the explanation of the contrast between (34) and (35) is correct, this suggests that either there is no intermediate trace of agents in (Spec, DP) (that is, the agent Wh-phrase does not move through that position) or, alternatively, that trace cannot delete from S-structure to LF (see footnotes 17. and 22.); otherwise, under our assumptions, this trace could γ-mark the original trace in (Spec, NP) and then delete in the mapping between S-structure and LF, and the specificity constraint would never affect overt Wh-movement of agents. The second alternative, in fact, seems the right conclusion; there are independent facts related to the distribution of agents in nominals suggesting that argumental agents have to raise to a functional projection to get Case. If so, this raising operation is required independently of the successive cyclic character of Wh-movement out of nominals and the intermediate trace in the Spec of that functional projection, whether DP or some Agreement phrase, is forced under Full Interpretation to remain undeleted through the derivation. In addition, the raising of the agent to that functional projection could explain the asymmetries between agents of nominals, which show Det-trace effects, and the lack of *that*-trace effects and Superiority on the part of subjects of sentences in Romance languages:[22] if, as Rizzi (1982) and Jaeggli (1982, 1985) argue, the lack of *that*-trace effects is due to the fact that subject extraction in these languages takes place from the post-verbal position and the trace in that position is lexically governed, agents of nominals within NP would also be, under our assumptions, in a configuration of lexical government If, on the other hand, this argument has raised to a Case-position outside NP at S-structure, wh-extraction would take place from a position where the agent cannot be lexically governed, similarly to the case of subjects in English sentences, and the trace left behind would have to be antecedent-governed, showing then Det-trace effects. Finally, observe that if that raising operation is not motivated by the Wh-movement itself, one could argue that neither is it forced in the case of complement and adverbial traces by the successive cyclic nature of Wh-movement, a conclusion also well motivated on conceptual grounds.

To finish, as a consequence of the argumentation above, the hypothesis defended here predicts after all an asymmetry between agents and adjuncts also in the Det-trace paradigm, although in this case in the opposite direction to the observed *that*-trace contrasts: since the Det-trace effect (unlike the *that*-trace effect) also shows up at LF, Wh-extraction of adjuncts should have the status of an ECP violation, no matter how many intervening projections are between the definite DP and the original adjunct-trace; this is so because the trace of the adjunct being γ-marked at LF, all the traces in the chain have to be present, and the trace marked [-γ] by the failure of antecedent-government through the overt determiner cannot thus be deleted in the mapping from S-Structure to LF. We therefore expect a sharp contrast between agent and adjunct extraction in this respect.

(22) I am indebted to Myriam Uribe-Etxebarria (personal communication) for bringing this point to my attention.

Although the relevant data are somehow obscured by independent reasons, the prediction also seems to be born out:[23]

(36) a. * [De qué países]$_{adv}$ conoces [$_{DP}$ las banderas t_{adv}]
[Of what countries] do you know [the flags t]?
b. * [De qué países]$_{adv}$ has visto
[$_{DP}$ la expulsión [$_{DP}$ de algunos inmigrantes t_{adv}]]
[Of what countries[have you seen
[the expulsion [of some inmigrants t]]

If this is correct, we then have strong evidence supporting the view that the relevant constraint on specificity is not a condition on movement as Chomsky (1977, 1981) suggests, but rather an LF condition that can be subsumed under the ECP.

3. Conclusions and Further Consequences.

Some more general conclusions are also suggested by the new contrast introduced in (30-36). First of all, the fact that the familiar three-way distinction adjunct /subject/complement reappears also here with a different 'make up', indirectly supports an analysis of the ECP where arguments and adjuncts differ in the level at which they are licensed, on the lines of Lasnik & Saito's (1984) proposal. Moreover, independently of whether the concrete mechanisms proposed in this section are right or not, the paradigm also suggests that the distinction uniformly divides complement-subject vs. adjunct in both the IP and the DP systems and, more concretely, that subjects behave as real arguments also within the DP system. On the other hand, the three way distinction observed at the DP level forces us to revise the status of the object trace: this is so because the necessary distinction between subject and adjunct traces, supported by the paradigm in (30a-b), is captured in terms of the different level at which each element is licensed (i. e. γ-marked). A different explanation is thus needed that derives the asymmetric behavior of object and subject traces with regard to the Det-trace effects. Once again, the null hypo-

(23) As observed to me by Juan Uriagereka and Myriam Uribe-Etxebarria (personal communications), extraction of adverbials out of doubly embedded NPs is already ungrammatical even in those cases where both of them are generic. Even so, it seems to me that the extraction is considerably worse if the adverbial moves from a specific DP, as in (ia), than if this movement takes place from within two bare NP-s (but compare it to the grammatical (ic), where the adverbial modifies the higher nominal):

(i) a. * De qué países conoces las leyendas?
'From which countries do you know the legends?'
b. ?* De qué países conoces [algún libro [de leyendas t]]?
'From which countries do you know some book of legends?'
c. De qué países conoces [algún libro [de leyendas] t]?
'From which countries do you know some book of legends?'

As can be expected, if any of the nominals is specific the sentence is hopeless:

(ii) a. * De qué países$_{adv}$ conoces [los libros [de leyendas t_{adv}]]?
'From which countries do you know the books of legends?'
b. * De qué países conoces [algún libro [de las leyendas t]]?
'From which countries do you know some book of the legends?'

thesis, that object-traces can be locally licensed within NP just like verbal complements are in VP, gives the right result. Insofar as all these conclusions seem to be the 'least costly' ones for the theory (they do not require any additional assumption other than the ones already needed for the IP-system), the approach presented in this section appears to be on the right track.

Notice, moreover, that the consequences of this parallelism between the two systems go farther: if the object trace within the nominal is properly governed, there is no obvious way to maintain an ECP approach to the set of asymmetries that fall under Cinque's generalization when the element extracted over a filled specifier (agent or possessor) is the internal argument of the nominal. The Minimality approach to "movement-through-Spec" argued for by Torrego (1985, 1987) and Chomsky (1986) then does not seem directly available for object extraction.

A possible solution, proposed by Stowell (1989), is to accommodate the analysis and make the ungrammatical cases follow from Subjacency when the intermediate Spec positions are not available for successive cyclic movement.[24] Apart from the difficulty of making the approach consistent with any current theory of Subjacency, this hypothesis inherits most of the problems faced by the classic approach, especially those regarding the legitimacy of the successive cyclic movement through the specifiers of NP and DP itself.[25] A more promising line of research, which cannot be developed at length here,[26] seems to me a Subjacency approach that makes use of the barrier-inducing character of specifiers, following the directions proposed by Fukui & Speas (1986). Such an approach is well motivated on the basis of other Subjacency configurations in various languages, and it has the advantage of making it possible an analysis of extraction out of DP that does not appeal to the necessity of successive cyclic movement through the different (argumental) positions of the nominal, while maintaining the blocking effects of the specifiers.

Summarizing, the analysis proposed here presents a way to characterize the syntax of the specificity constraint on extraction, unified with the *that*-trace effect and, consequently, falling under the ECP. The paper also presents evidence for an additional functional projection in the nominal system, located higher than DP, that shows some properties similar to the complementizer phrase at the sentential level. The analysis indirectly supports a thematic structure of nominals parallel to that of verbs, where the thematic arguments of nouns maintain the same relation with their head with regard to government; in particular, their traces behave in consonance with the argumental traces in other subsystems with respect to proper government and γ-marking. Several details and problems remain to be worked out,[27] but the

(24) See Stowell (1989) for details and discussion. It has to be pointed out that Stowell's proposal on object extraction is only indirectly related to the main topic of his paper and, therefore, the analysis presented there is not fully developed.

(25) See Pollock (1989) and Ormazabal (1991) for discussion of these problems from different points of view.

(26) See Ormazabal (1991) for extended discussion and some problems.

(27) In concrete, the connections between the syntax and semantics of specific DP-s remains mostly unsolved; in a framework like the one I have been assuming through the paper where the input for semantic interpretations is the LF-representation, it is plausible to assume that the movement of the strong determiners is related to its quantificational nature which, in turn, can be related to the specific reading of these nominals. The details of how these relations can be made, however, have to be worked out.

main line of argumentation seems to have the right theoretical consequences and opens a promising path to a study of the similarities and differences between the verbal and nominal systems.

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