NON-OCCURRENCE OF SUBJECT AND ADJUNCT PARASITIC GAPS*

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Parasitic gaps have become one of the most discussed topics in generative grammar. In previous work I have posited an analysis of these constructions in Romance in which a base-generated operator in [Spec, CP] is coindexed at S-Structure with *pro* in object position. That analysis accounted not only for the clause-boundedness constraint but also for the finite-ness constraint in Spanish parasitic gaps vs their English counterparts. This paper analyzes parasitic gaps in subject and adjunct positions in both languages. The data show that language particular properties explain the absence of parasitic gaps in these positions. A possible revision of the notion of *barrier* and the validity of the *Anti-C-Command* condition for adjunct parasitic gaps are also considered.

1. INTRODUCTION

Parasitic gaps have become one of the most discussed topics in generative grammar over the last decade (cf. Taraldsen 1980, Chomsky 1981, 1986, Kayne 1983, Engdhal 1983 and Browning 1987, among others). Their systematic distribution and the fact that they constitute a peripheral phenomenon makes them highly interesting. The parasitic gap phenomenon may be illustrated by the well-known example in (1). Besides the gap created by wh-extraction, indicated by t, there is a second gap, indicated by e, which is parasitic on the first one:

(1)   Which articles$_i$ did you file t$_i$ without reading e$_i$?

In (1) both t and e are understood as being linked to *which articles*, and NP in a non-argument (A') position. The reason for calling e parasitic on the trace is that its occurrence is indeed dependent on the trace. Consider the examples in (2):

(2)   a. *Anne filed these reports without reading e

       b. *Which reports did Anne go home without reading e?

(2a)   shows that e is not licensed if its antecedent is in a non-moved argument position whereas (2b) shows that extraction from the position of e itself is not allowed.

In previous work (García Mayo, 1992) I have posited an analysis of parasitic gap constructions in Spanish with a base-generated operator in [Spec,CP] coindexed with *pro* in object position, as illustrated in (3):

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(3)   ¿Qué artículos$_i$ archivaste t$_i$ [pp sin [CP Op$_j$ [IP PRO leer pro$_j$]]
                                    base-generated

This analysis accounted for the data illustrated in (4), the clause-boundedness constraint present in Spanish and other Romance languages, and (5a/b), the finiteness constraint in Spanish parasitic gap constructions vs their English counterparts:[1]

(4)   a. ¿Qué artículos archivaste sin leer?

        b.*¿Qué artículos pusiste en reserva sin convencer a los estudiantes de leer?

(5)   a$_1$. ¿Qué artículos archivaste sin leer?

        a$_2$.*¿Qué artículos archivaste después de que leíste?

        b$_1$. Which articles did you file without reading?

        b$_2$. Which articles did you file after you read?

This paper analyzes parasitic gaps in subject and adjunct position in English and Spanish and shows that the Empty Category Principle (ECP) and language particular properties explain the absence of parasitic gaps in these positions. A possible revision of the notion of *barrier* and the validity of the *Anti-C-Command condition* for adjunct parasitic gaps are also considered.

2. PARASITIC GAPS IN SUBJECT POSITION

Browning (1987, 287ff) observes that the three crucial configurations relevant to the subject gap question in English are: ECM verbs with infinitival complements, small clauses and embedded, tensed complementizerless clauses. The data in (6) show some examples with these configurations, whereas in (7) sentences with parasitic gaps in object position are provided for comparison (for Browning a single ? is the standard judgement for a well-formed parasitic gap construction):

(6)   a. ECM verbs with infinitival complements

        a$_1$??The horse that you bet on *t* because you expected *e* to win the race.

        a$_2$.*?The professor that you consulted *t* without believing *e* to understand the problem.

        b. Small Clause

        ? The person that you hired *t* without considering *e* really qualified for the job.

        c. Tensed complementizerless clause

        ??The person that you consulted *t* because you thought *e* understood the problem.

(7)   a. ECM verbs with infinitival complements

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[1]   The structure we posit for (5a) is the following:

[CP qué artículos$_i$ [IP (pro) [VP [VP archivaste t$_i$] [pp después de [CP Op$_j$ [CP Op$_i$ [C· que [IP (pro) [VP leíste e$_i$ t$_j$]]]]]]]]]

Op$_j$ stands for a temporal operator (cf. Johnson (1988)). The base-generated operator and the temporal properties of the adjunct clause interact in a very interesting way to explain the differ- ences in finiteness between English and Spanish PG constructions.

See García Mayo (1995) for a detailed analysis.

a₁ ?The horse that you bet on *t* because you expected Bill to ride *e*.

a₂ ??The problem that you presented *t* without believing him to understand *e*.

b. Tensed complementizerless clause

?The problem that you presented *t* because you thought he understood *e*.

Browning claims that the contrast between subject and object gaps is discernible but less sharp than a contrast expected from an ECP asymmetry. Besides, it is possible to find acceptable parasitic gap sentences with subject gaps when *be* or a modal are the verbs of an ECM complement:

(8)   a. ?The person$_i$ you hired t$_i$ without believing e$_j$ to be fully qualified.

        b. ?The professor$_i$ that you consulted t$_i$ because you thought e$_j$ would understand your problem.

After considering a large amount of data in English, Browning concludes that factors such as the nature of the verb, the depth of embedding and the islandhood of embedded tensed clauses are to be considered when accounting for the degree of ungrammaticality normally associated with subject parasitic gaps. She claims that the contrast in (6)-(7) shows that we are not dealing with an ECP violation but, more likely, with something closer to a Subjacency violation (due to the sensitivity to the choice of lexical item and to tensedness factors).

Some researchers (cf. Contreras 1988) have attributed the ungrammaticality of sentences with parasitic gaps in subject position (cf.(9)) to a violation of the ECP:

(9)   a. *Which papers$_i$ did you file t$_i$ right after e$_j$ arrived?

        b. *The person$_i$ that you telephoned t$_i$ before e$_i$ left the country.

The structure posited for (9a) is given in (10):
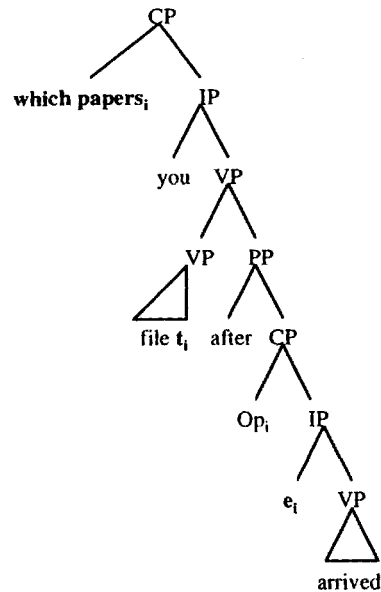
The empty category e_i in (10) would violate the ECP because, it is assumed, the null operator in [Spec,CP] position will not be able to antecedent govern it. Contreras claims that a wh-trace in Comp (cf. (11)) has, in a sense, the lexical content of its antecedent and, therefore, can antecedent govern an empty category in subject position:

(11)   Who$_i$ do you think [t$_i$ [e$_i$ will read the paper]]

A null operator, however, lacks that lexical content and cannot properly govern that same subject position.

The representation we posit for a sentence like (9a) above is provided in (12):
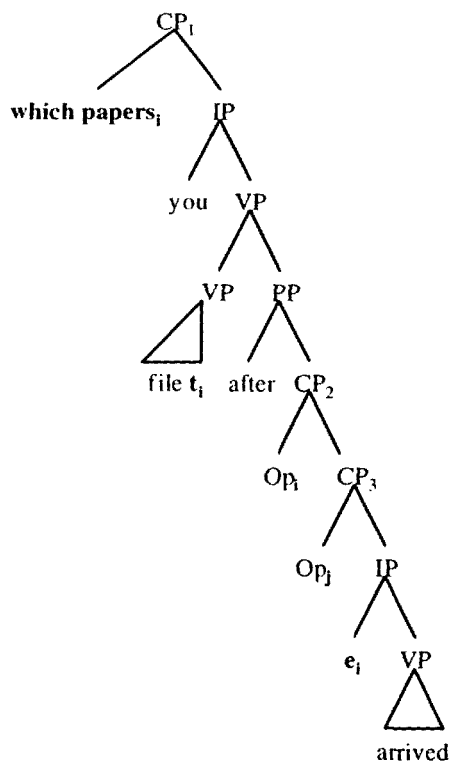
In (12) the null operator, like other empty categories, has to be licensed and identified. In (12) Op$_j$ will be head-governed by the preposition and it will also be identified by the overt operator *which papers* because there is just one barrier (PP) between the two. The parasitic gap operator Op$_j$ also governs its own trace since the CP, while not dominating the operator, does not exclude it either. Nevertheless, the sentence is ungrammatical.

Suppose, however, that antecedent government is not possible from an adjoined position. Then (12) would also be ruled out, as an ECP violation. Furthermore, structures with ungrammatical parasitic gaps in tensed adjunct clauses in Spanish (cf. (5a$_2$) and footnote 1)) would be ruled out on two grounds: failure of the parasitic gap null operator to be properly governed, and failure of the temporal operator to properly govern its variable.

On what grounds can we rule out government from an adjoined position? Two possibilities suggest themselves. First, we can attribute the ungrammaticality of (12) to relativized minimality (cf. Rizzi 1990): the operator in [Spec, CP] as a potential antecedent governor blocks government of the trace in subject position from its actual antecedent in the CP-adjoined position. Adjunction would then provide an escape hatch only for theta-governed objects which do not require antecedent government. Alternatively, the definition for barrier might be revised so that the crucial notion was not exclusion but rather failure of domination, as in (13):

(13) α governs β iff α m-commands β and there is no Γ, Γ a barrier for β,

(i) such that Γ does not dominate α (proposed revision)

(ii) such that Γ excludes α (*Barriers*)

Thus, with the revision in (13) we can account for the ungrammaticality of (12). Although the data considered so far are insufficient for deciding this revision, data from multiple wh languages such as Romanian provide stronger evidence (cf. García Mayo and Kempchinsky 1994).

Now, if one attributes the ungrammaticality of sentences like (12) in English to the lack of proper government of the empty category in subject position, a null subject language like Spanish should be able to allow this type of structures because the subject position is properly governed.[2] Consider (14), the Spanish counterpart of (9a) above:

(14) ¿Qué artículos$_i$ archivaste t$_i$ justo después de que ___$_{i/h}$ llegaron?[3]

However, the empty category in subject position cannot be considered a parasitic gap. Following our assumptions about the position of the temporal operator and the parasitic gap operator in Spanish (cf. footnote 1), (15) is the structure assigned to a sentence like (14):

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[2] This is shown in the possibility of 'long wh-movement' of subjects, as (i) illustrates:

(i) ¿Quién$_i$ piensas que e$_i$ vendrá?

*Who$_i$ do you think that e$_i$ will come?

[3] If an overt pronoun appears instead of the empty category the interpretation of the sentence changes because personal pronouns in Spanish can only be [+human]:

(i) Qué artículos$_i$ archivaron t$_i$ después de que ___$_{i/j}$ / ellos$_j$ llegaron?

CP
qué artículos$_i$ IP
              pro   VP
                   VP   PP
              archivaste t$_i$ después de   CP
                                      Op$_j$ C'
                                          que   CP
                                             Op$_i$ IP
                                                   e$_i$ VP
                                                        llegaron
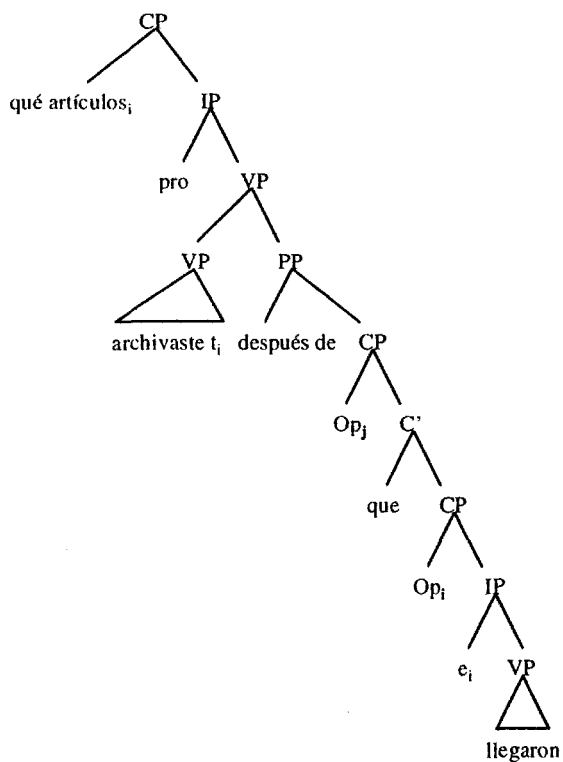
In (15) Op$_i$ is not head-governed and cannot be identified by the overt operator *qué artículos* because there are two barriers (PP and CP) intervening. Therefore, Op$_i$ will not be able to antecedent govern e$_i$ and the PG reading is ruled out. Thus, a parasitic gap reading in this type of sentence will be ruled out as simply another example of the finiteness constraint seen in (5a$_2$) above. Gaps like *e$_i$* in (15) in Spanish and other Romance languages are not parasitic gaps; these gaps are the 'standard' type of *pro* governed by Agreement and are interpreted as referring to a [+human] subject. If one interprets the subject gap as referring to *qué artículos* that does not mean that we are dealing with a parasitic gap; this could be due to the fact that embedded pronominal elements in Spanish have to be free in their governing category but preferably should have a sentence-internal antecedent (cf. Campos 1991).

3. Parasitic Gaps in Adjunct Position

Another environment in which parasitic gaps cannot be found in English or Spanish is adjunct position. Consider (16):

(16)   a. *How$_i$ did you fix the car t$_i$ after repairing the bicycle e$_i$? (Browning 1987:269)

        b. *¿Cómo$_i$ arreglaste el coche t$_i$ después de reparar la bicicleta e$_i$?

What rules out the possibility of adjunct gaps? Browning (1987) considers that the ECP or some related constraint is responsible for the lack of adjunct parasitic gaps. In

what follows we briefly explain her account of data such as (16) above and point out a possible shortcoming in that account. We posit an alternative solution at the end of this section.

Browning analyzes parasitic gap constructions as complex chains; the head of the chain is the overt operator. For her the parasitic gap null operator is base-generated as *pro* in object position of the adjunct clause and moves by S-Structure to the [Spec,CP] position of that same clause. The complex chain is constrained by the Subjacency Condition stated as in (17):

(17)   If (α_i, α_{i+1}) is a link of a chain, then α_{i+1} is 1 subjacent to α_i

A sentence like (16a) above is given the following S-Structure representation:

(18)   a. How$_i$ did you [$_{VP}$ t'$_i$ [$_{VP}$ fix the car t$_i$ [$_{PP}$ after [$_{CP}$ pro$_i$ [$_{IP}$ PRO [$_{VP}$ e'$_i$ [$_{VP}$ repairing the   bicycle e$_i$]]]]]]]

b. Complex chain: [how, t', t, pro, e', e]

According to Browning, at S-Structure the complex chain meets the Subjacency condition requirements and it is licensed. At LF, however, the requirements are stricter: Browning posits the Internally Consistent Chain Condition (IC*), stated as in (19):

(19)   IC*: For every link (α_i, α_{i+1}) of an internally consistent chain, α_i must govern α_{i+1}

The IC* is violated in (18) because PP is a barrier; besides, *t*, the real adjunct gap, does not m-command A'-*pro*; there is then a link in the chain in which α_i does not govern α_{i+1}.

The problem with this account of the lack of adjunct parasitic gaps is that one cannot clearly see what makes a standard parasitic gap construction like (20) (the structure adopted by Browning) different from an adjunct parasitic gap: in both (18) and (20) PP is a barrier and there is a link in the chain (t, A'-*pro*) in which α_i does not govern α_{i+1}; however, (20) is an acceptable structure:
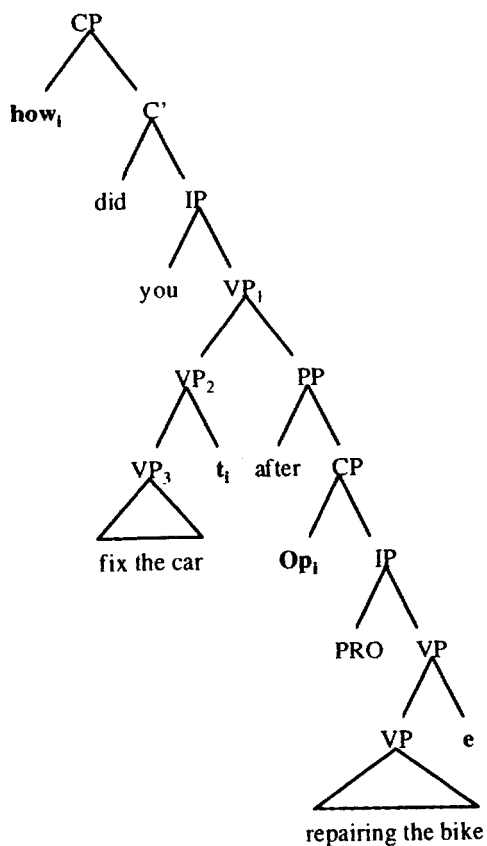
(20)   Which articles$_i$ did [$_{IP}$ you [$_{VP}$ [$_{VP}$ [$_{V'}$ file t$_i$]][$_{PP}$ without [$_{CP}$ pro$_i$ [$_{IP}$ PRO reading e$_i$]]]

Let us then consider the alternative representation in (22) for adjunct parasitic gap structures of the type of (16), repeated below as (21):

(21)   a. *How$_i$ did you fix the car t$_i$ after repairing the bicycle e$_i$?

b. *¿Cómo$_i$ arreglaste el coche t$_i$ después de reparar la bicicleta e$_i$?

(22)   is ruled out simply because t_i c-commands the parasitic gap e_i: the first maximal projection dominating t_i is the highest IP. The VP immediately dominating t_i (VP$_2$) does not dominate it in the sense of Chomsky (1986b) because not all segments of VP dominate t_i. The same happens with VP$_3$. Thus, the structure in (22) violates the Anti-C-Command condition because the first maximal projection dominating t_i (IP) also dominates the parasitic gap e_i.[4] The same would apply to the structure of the corresponding sentence in Spanish.

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4   One of the characteristic properties of parasitic gap constructions is the requirement that the licensing gap must not c-command the parasitic gap. The Anti-C-Command condition is invoked in order to account fo the inabiliby of subject traces to license parasitic gaps, as (i) exemplifies:

(i) *Which man$_i$ [t$_i$ [$_{VP}$ spoke to you [$_{PP}$ before you recognized e$_i$]]]

Tree diagram:

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              CP
             /  \
         how_i   C'
                /  \
              did   IP
                   /  \
                 you   VP_1
                      /   \
                   VP_2    PP
                  /   \   /  \
               VP_3  t_i after  CP
              /___\           /  \
           fix the car      Op_i  IP
                                 /  \
                               PRO   VP
                                    /  \
                                  VP    e
                                 /___\
                            repairing the bike
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4. CONCLUSION

This paper has shown how language particular properties play a role when explaining the lack of parasitic gaps in certain positions. As for parasitic gaps in subject position, we have seen that Spanish, as a null subject language, does not allow them: subjects that are nominative and governed by Infl cannot be considered parasitic gaps in this language.

As for the lack of adjunct parasitic gaps both in English and Spanish, we saw that the explanation follows from a violation of the Anti-C-Command condition. The fact that this constraint is at work in adjunct parasitic gap constructions provides an argument for its validity, which has been called into question in previous analysis.

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