

THAT-TRACE EFFECTS IN PORTUGUESE

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1. INTRODUCTION

One of the main discoveries made by the investigation on ECP-related effects in the beginning of the 80s was Rizzi's (1982): he found out that there was a relation between the absence of *that-t* effects in null subject languages and the fact that they have 'free' subject inversion; more specifically, Rizzi showed that subjects are *wh*-extracted from a *postverbal* position in Italian. This finding was corroborated afterwards by evidence from many languages (non-standard dialects of Italian, cf. Brandi & Cordin, 1989; Modern Arabic dialects, cf. Kenstowicz, 1989, etc.).

However, it was soon claimed (Chao, 1981, Zubizarreta, 1983) that Portuguese might be a counterexample to Rizzi's discovery: Portuguese looked like a normal null subject language in not having superficial *that-t* effects, and yet it has no 'free' subject inversion either. Many concluded from this that Portuguese, unlike languages like Italian or Spanish, does *not* extract subjects from a postverbal position. The purpose of this squib is precisely to argue *against* this conclusion: it will be shown that Portuguese does have *that-t* effects and that, just like Italian, it avoids superficial *that-t* configurations by extracting subjects from a postverbal position.¹

¹ The first draft (entitled "WH-Extraction of Subjects in Portuguese") of this paper appeared in 1994, and it has circulated as such among Brazilian linguists for some time. The fact that it has received some attention in recent literature about null subjects in Portuguese (see Figueiredo Silva 1997, Simões 1997) seemed to me to indicate that the argument it contains still deserved public appearance. The present squib is a slightly revised version of the 1994 draft. I would like to thank Carlos Mioto and João Costa for their suggestions to the first draft. Usual disclaimers apply.

2. INVERTED AND WH-EXTRACTED SUBJECTS

Taraldsen (1978) and Chomsky (1981) established the prevailing view in the beginning of the '80s that the *Null Subject Parameter* (NSP) should cover the pattern of variation exemplified in (1) and summarized in (2) (where 'NSL' means *Null Subject Language*):

- (1) a. It.: *ec* verrà
 Eng.: * *ec* will come
 b. It.: *ec* verrà Gianni
 Eng.: * *ec* will come Gianni
 c. It.: Chi_i credi che *ec*_i verrà
 Eng.: * Who_i do you believe that *ec*_i will come

(2)	NSLs	Non-NSLs
a. Null Subjects in Tensed Clauses	Yes	No
b. Free Subject Inversion	Yes	No
c. <i>That-t</i> Effects	No	Yes

The classic ECP explanation of this pattern of variation assumed that in NSLs INFL was a proper governor for the subject position, but not in non-NSLs; hence, the grammaticality of the Italian sentences, and the ungrammaticality of the English ones, in (1) above. Crucial for this squib is the observation that NSLs apparently have not *that-t* effects (due to Perlmutter, 1971, cf. Chomsky, 1981:160).

Another fundamental discovery made in the same period is due to Kayne (1981), who observed that *that-t* effects can also be found in LF structures. More specifically, he showed that when embedded in a complement clause, the French negative quantifier *personne* can scope over the whole sentence only if it is an object of the verb; if it is the subject, scope over the whole sentence is impossible. His conclusion was that the ECP applied at LF, a conclusion supported by abundant evidence afterwards

(see Chomsky, 1981, Huang, 1982 and Lasnik & Saito, 1984, among many others).

The first argument against Rizzi (1982a) raised against the idea that INFL is a proper governor in NSLs was based on Kayne's finding that negative quantifiers showed ECP effects at LF. As Rizzi noticed, the ECP approach to the NSP and Kayne's finding, put together, made the following prediction: NSLs should show no *that-t* effects at LF, just as they appear not to show them at S-Structure (cf. the Italian sentence in (2c) above). Of course, this conclusion follows because, if INFL is a proper governor for the subject at S-Structure (as Chomsky assumed for NSLs), then there should be so too at LF as well. Crucially, Rizzi showed, this prediction is incorrect. Specifically, the Italian negative quantifier *nessuno* shows the same subject/object asymmetry as *personne* in French: *nessuno* can be construed with the matrix *non* in (3a), hence being interpreted as having scope over the whole sentence; but the wide scope interpretation is not available in (3b) (where '#' means "interpretation unavailable"; see Rizzi for detailed discussion):

- (3) a. *Non* pretendo che tu arresti *nessuno*
 NEG require-1s that you arrest-2s anybody
 "I do not require that you arrest anybody"
 b. *Non* pretendo che *nessuno* ti arresti
 NEG require-1s that anybody you arrest-3s
 #"I do not require anybody to arrest you"

The ECP analysis of this contrast is the following: (i) if *nessuno* is QR-ed in (3a) to have scope over the whole sentence, the LF representation of the sentence is like (4a), where the trace of *nessuno* is properly governed by the verb; (ii) but the relevant LF representation of (3b) is (4b) below, where the trace of *nessuno* is in a *that-t* configuration; if it is assumed that the subject position is not lexically governed in Italian, just as it is not in English and French, the unavailability of the relevant interpretation for (3b)

is explained:

- (4) a. [*Non+nessuno*_i [pretendo che [tu arresti *t*_i]]]
 There is no person x such that I require that you arrest x
 b.* [*Non+nessuno*_i [pretendo che [*t*_i ti arresti]]]
 There is no person x such that I require that x arrest you

Rizzi concluded, therefore, that ungrammatical the subject position cannot be properly governed at LF in Italian, *contra* Chomsky's original suggestion. Furthermore, he noticed that the wide scope interpretation is available for *nessuno* if it is *postverbal*: this is shown in (5a) below, which contrasts with (5b), where the subject is *preverbal*:

- (5) a. *Non* pretendo che ___ sia arrestato *nessuno*
 "I do not require anybody to be arrested"
 b. *Non* pretendo che *nessuno* sia arrestato
 # "I do not require anybody to be arrested"
 c. [*Non+nessuno*_i [pretendo che [*ec* sia arrestato *t*_i]]]
 There is no person x such that I require that x be arrested

Why only in (5a) above can *nessuno* have the wide scope interpretation? For Rizzi, the LF representation of (5a) is (5c), where the trace of *nessuno* is inside the VP and is (properly) governed by the verb; (5b), on the other hand, would have a LF analogous to (4b) above, where there is a trace in the subject position — hence, an LF that violates the ECP. That is, the discovery of the contrast in (5) suggested to Rizzi a new explanation for the apparent absence of *that-t* effects in NSLs: the relevant property of these languages would not be the proper governor nature of their INFL but, rather, the availability of 'free subject inversion' — 'free inversion' would allow the subject to be lexically governed by the verb

and, hence, concluded Rizzi, properly governed.²

But the contrast in (5) above was not the only evidence adduced by Rizzi for the conclusion that subjects were extracted from a postverbal position in Italian: *ne*-cliticization with *wh*-extracted subjects provided him an even more striking argument. As described in Belletti & Rizzi (1982), the clitic pronoun *ne* is used in Italian for anaphoric reference to N' when the whole NP is in *object* position, as shown in (6a,b) below; N' cannot be simply elided, cf. (6c):

- (6) a. Mario ha preso [_{NP} alcune [_{N'} pietre]]
 Mario has taken some stones
 b. Mario *ne*_i ha preso [_{NP} alcune [_{N'} *ec*_i]]
 Mario *of-them* has taken some *ec*
 c. * Mario ha preso [_{NP} alcune [_{N'} *ec*]]

On the other hand, if the whole NP is in *subject* position, the situation is reversed: N' ellipsis is obligatory, and *ne* unacceptable:

- (7) a. Alcune pietre sono cadute in mare
 Some stones fell down into the sea
 b. * [Alcune *ec*_i] *ne*_i sono cadute in mare
 c. [Alcune *ec*] sono cadute in mare

² According to Rizzi, 'free subject inversion' is, in turn, derived from the nature of INFL in NSLs. Specifically, NSLs' INFL licenses null expletives, i.e., *pro* expletives (such as the *ec* in (5c) above), and the order [V Subject] is the surface manifestation of the structure [Expletive_i V Subject_i]. That is, extracted postverbal subjects are actually subjects in expletive-associate CHAINS (cf. Chomsky 1986a). In what follows, whenever necessary for perspicuity, I will use 'Expl' for *pro* expletives.

Note that if subjects in such configurations are properly governed by the verb, then they are expected to be extractable in the equivalent constructions of non-NSLs, of course. This appears to be true both for French (examples from Rizzi, 1982a) and for English (examples from Hoekstra & Mulder, 1990):

- (i) a. * Combien de gens_i crois-tu [_S que t_i sont arrivés]?
 b. Combien de gens_i crois-tu [_S qu'*il* est arrivé t_i]?
 (ii) a. * How many people_i do you believe [that t_i were there]?
 b. How many people_i do you believe [that there were t_i there]?

That is, if the subject is in *preverbal* position (Spec-of-IP), then *ne* is impossible. Now, what about *postverbal* subjects? The crucial case is that of subjects of *unaccusative* verbs: under standard assumptions, these subjects are in *object* position if they occur postverbally. The prediction would, then, be that postverbal subjects of unaccusatives should behave just like objects of transitives with respect to *ne* cliticization, that is, *ne* cliticization should be obligatory, and N' ellipsis unacceptable (cf. (6) above). This prediction is born out, as shown in (8):

- (8) a. Sono cadute [alcune pietre]
 Fell down some stones
 b. *Ne_i* sono cadute [alcune *ec_i*]
 c. *Sono cadute [alcune *ec*]

In short: what the contrast between (7) and (8) shows is that with unaccusative verbs *ne* cliticization is only possible with *postverbal* subjects, not with *preverbal* ones.

Now, consider from this perspective Rizzi's hypothesis that subjects can only be extracted from a *postverbal* position in Italian. If this is true, it follows that *ne* cliticization will be obligatory with *wh*-extracted subjects of unaccusatives (cf. (8b) vs. (7b) above).³

If, on the other hand, subjects could be extracted from Spec-of-IP in Italian (and, hence, the *that-t* configuration allowed in this language), *ne* cliticization should *not* be obligatory with *wh*-extracted subjects of unaccusatives, and N' ellipsis should be possible. As (9) below illustrates, the fact is that *ne* cliticization *is* obligatory:

³ Of course, this reasoning is valid only if *ne* cliticization with *wh* questions preserves the properties it shows in simple declaratives, which is true. For example, when an object is *wh*-questioned, *ne* cliticization is still the only option, as illustrated in (i) below:

- (i) a. [_{NP} Quante [_{N'} pietre]] _i hai preso _{t_i} ?
 How-many stones have(you) taken _t ?
 b.* [_{NP} Quante [_{N'} *ec*]] _i hai preso _{t_i} ?
 c. [_{NP} Quante [_{N'} *ec_i*]] _i *ne_j* hai preso _{t_i} ?

The pattern in (i) is analogous to the one in (6) above.

- (9) a. [Quante pietre] hai detto che sono cadute?
 [How-many stones] have(you) said that have fallen-down?
 b. *[Quante *ec*]_k hai detto che *t_k* sono cadute *t_k* ?
 c. [Quante *ec_i*]_k hai detto che *Expl_k ne_i* sono cadute *t_k* ?

This fact provides strong support for Rizzi's conclusion that NSLs appear not to show *that-t* effects for one reason: in such languages, subjects can be extracted from a postverbal position. Hence, 'free subject inversion', and not proper government by INFL, is the relevant property of NSLs.⁴ Let me call this *Rizzi's Generalization*:

(10) *Rizzi's Generalization*:

Because of 'free subject inversion', subjects can be extracted from a postverbal position in NSLs, in which case their trace is properly governed by the verb.

Quite compelling evidence for Rizzi's Generalization was found in other languages as well (see, for example, Brandi & Cordin, 1989 and Kenstowicz, 1989). Portuguese, however, was claimed to be a problem, to which we turn now.

⁴ A sceptical reader might have doubts about Rizzi's argument based on *ne* cliticization with unaccusatives, since postverbal subjects of unaccusatives are not actually 'freely inverted' but just happen to stay in their base position at surface. 'Freely inverted subjects' (i.e., postverbal subjects of intransitive and transitive verbs) are thought to be adjoined to VP, a position which is assumed *not* to be properly governed by the verb, given Huang's discovery of ECP effects with VP *adjuncts*. Rizzi was not aware of this fact when he wrote his (1982a) paper, in which he assumed, following Aoun & Sportiche (1981), that any constituent dominated by VP would be governed by the verb. If the conclusions of this squib are correct, though, Rizzi's conclusions can be maintained because subjects of intransitive and transitive verbs in Italian are not extracted from an adjunct position, but from some Spec position (of VP, or some functional head below AgrS, for example). See fn. 10 and section 5 below for relevant discussion.

3. PORTUGUESE: NO 'FREE' SUBJECT INVERSION; NO THAT-T EFFECTS?

Soon after the first appearance of Rizzi's paper it was noticed that Portuguese might be a problem for his generalization (cf. Chao, 1981, Zubizarreta, 1982). Portuguese is like a NSL in allowing both null subjects in tensed clauses, cf. (11), and apparent *wh*-extraction of subjects across *that*, cf. (12):

- (11) a. *ec* está chovendo
 (it) is raining
 b. *ec* é provável que o João chegue tarde
 (it) is likely that João arrives late
 c. *ec* {comi/comeste} todos os bombons!
 (I/You) {ate-1s/ate-2s} all the bonbons!
 d. O João disse que *ec* vai chegar tarde
 João said that (he) is-going to-arrive late
- (12) *Quem*_i o João disse que *ec*_i vai chegar tarde?
 Who João said that *ec* is-going to-arrive late

The problem, however, is that subject inversion is not 'free' in Portuguese. Although neither the judgments nor the restrictions observed in the literature are consensual, all dialects reported converge in one point: 'subject inversion' is possible but restricted. Consider the variety discussed by Zubizarreta: subject inversion with unergative and transitive verbs is possible both in matrix and embedded sentences only if the subject is *focused*, cf. (13) below; with passives and unaccusatives, however, subjects can freely invert, as shown in (14) (Zubizarreta notes that some speakers do not accept inversion with transitives, which might be due to the fact that objects tend to be the focus of transitive sentences, cf. her note 4, p.94):

- (13) a. Correm AS CRIANÇAS rapidamente
 Run the children fast

- b. Não lêem estes livros AS CRIANÇAS
Not read these books the children
- c. A polícia acreditava que tinham roubado aquela loja OS RAPAZES
The police believed that have robbed that shop the boys
- (14) a. Foram omitidos pormenores importantes pelo autor deste relatório
Were omitted details important by-the author of-this report
- b. Ele acredita terem sido omitidos pormenores importantes pelo autor deste relatório
He believes to-have been omitted details important by-the author of-this report
- c. Ele lamentou que tivessem acontecido coisas como essas
He regretted that have occurred things like that

Chao (1981), reporting on Brazilian Portuguese (BP), claims that subject postposing is found in “highly restricted contexts: contrastive focus, poetic language”. Moreover, “there is no free postposing in tensed embedded sentences, a requirement which is crucial if one is to derive *that-t* violations [from absence of subject inversion in languages like English]” (p.50). According to Chao, minimal pairs like the ones in (15) below would distinguish BP from a “true NSL” like Spanish:

- (15) a. BP: * Saíram eles
Sp.: Salieron ellos
Left they
- b. BP: * João disse que saíram eles
Sp.: Juan dijo que salieron ellos
Juan said that left they

Chao says that postverbal subjects in BP are possible, as in (16) below; but such cases are better analysed as subject-verb inversion because material between the inverted subject and the verb degrades the sentence, cf. (17) vs. (18):

- (16) a. Chegou o João
 b. Não sei quando chegou o João
 I do not know when arrive João
- (17) a. * Chegou ontem de avião o João
 arrived yesterday by plane João
 b. * O João disse que chegou ontem o Pedro
 João said that arrived yesterday Pedro
- (18) a. ??Chegou o João ontem de avião
 Arrived João yesterday by plane
 b. ??João disse que chegou o Pedro ontem
 João said that arrived Pedro yesterday

Recently, Figueiredo Silva (1997) described her dialect of BP as follows: inversion is out with transitive verbs with or without an overt object, cf. (19); with passives and unaccusatives an indefinite postverbal subject is possible, cf. (20); with some unergatives a postverbal indefinite subject is also possible, but others do not allow inversion, cf. (21):

- (19) a. O João comeu o bolo
 João ate the cake
 b. * Comeu o bolo o João
 c. * Comeu o João o bolo
 d. * Comeu o João
- (20) a. Foi morto {um/*o} homem
 was killed {a/*the} man
 b. Desapareceu {um/*o} livro
 disappeared {a/*the} book
- (21) a. Telefonou um cara aí pra você
 telephoned a guy to you
 b. Viajou uma mulher super gorda do meu lado
 travelled a woman very fat beside me

- c. * Tossiu um cara atrás de mim
coughed a guy behind me
- d. * Espirrou um cara durante o filme
sniffed a guy during the movie

As for my own judgments, I more or less feel most of the contrasts described by Chao and Figueiredo, but I am not sure about their significance: as sentences get more elaborated — e.g., if a different lexical choice is made, or if the utterance is put into context —, their level of acceptability changes considerably. In any event, it suffices for my purposes here to observe that in all dialects described, postverbal subjects are heavily constrained; hence, subject inversion is in no sense ‘free’ in Portuguese and the objection found in the literature against Rizzi’s Generalization in (10) above.

If, as suggested by Rizzi, NLSs are able to circumvent *that-t* effects because of free subject inversion, then Portuguese should rather show such effects. But, as we have seen in (12) above, it does not, apparently. As a matter of fact, Zubizarreta argued that subject *wh* extraction *cannot* be from a postverbal position in the Portuguese dialect she discussed. Let us briefly consider her argument, which is based on subject extraction from factive complement clauses.

As is well-known, English and French — both non-NSLs — have specific strategies to escape *that-t* violations: English resorts to a null complementizer, and French to the complementizer *qui*, cf. (21a,b), respectively (see Pesetsky 1981, among many others):

- (22) a. Who do you believe (\emptyset /*that) made that noise?
- b. Qui crois-tu {qui/*que} a fait ce bruit?

Subject extraction out of factive complements, however, cannot be saved by the above strategies, although object extraction from such complements is still fine, cf.:

- (23) a.* Who do you regret punished the children?
- b. ? Who do you regret that Mary punished?

- (24) a. * Qui regrettes-tu qui châtie les enfants?
 b. ? Qui regrettes-tu que Marie châtie?

On the other hand, Spanish (and Italian) — both NSLs with putative ‘free subject inversion’ — do not show such a subject/object asymmetry in the extraction from factive complement clauses, cf.:

- (25) a. ? Quién lamentas que no haya llamado?
 Who do you regret that did not call
 b. ? A quién lamentas que Juan haya llamado?
 Who do you regret that John called

Briefly, Zubizarreta’s interpretation of the contrast between (23)-(24) and (25) was as follows: (i) factive complements do not allow their COMP to be occupied by a *wh* phrase; hence, *wh* extraction of subjects in English and French cannot be saved from an ECP violation, since the strategies used by both depend on the *wh* subject’s landing on the intermediate COMP;⁵ (ii) Italian and Spanish, being NSLs, can always extract the subject from a postverbal position, where the trace will be properly governed by the verb (the mild marginality of (25a,b), according to Zubizarreta, is due to Subjacency).

Now, Zubizarreta’s argument continues, the Portuguese variety she describes behaves like English and French with respect to subject *wh* extraction out of factive complements: it shows a similar subject/object asymmetry (in the examples below, the subject is extracted from an inflected infinitive clause, but Zubizarreta explicitly claims that the same effects are found extraction from finite factive complements):

- (26) a. * Que meninos é que tu lamentas terem roubado aquela loja?
 Which boys is that you regret to-have(3p) robbed that shop

⁵ According to LGB’s analysis, absence of an overt complementizer in English allows the intermediate trace of the moving *wh* subject to c-command and, hence, antecedent-govern the trace in subject position. In French, the complementizer *qui* shows morphological agreement with the moving *wh* subject; this is taken to indicate that COMP is coindexed with the *wh* subject (cf. Pesetsky 1981) and can, therefore, play the role of an antecedent for the trace in subject position.

- b. ? Que loja é que tu lamentas os meninos terem roubado?
Which shop is that you regret the boys to-have(3p) robbed

Given the parallelism between (23)-(24) and (26), Zubizarreta concluded that subject extraction in this variety of Portuguese could not proceed from a postverbal position — otherwise, the pattern should more look like the Spanish and Italian ones, as illustrated in (25) above. For finite complement clauses in which a *that-t* configuration seems to be allowed in Portuguese (e.g., (12) above), Zubizarreta proposed a different analysis: these sentences would be grammatical because Portuguese would have a strategy analogous to the *que*→*qui* rule in French; in particular, she argues that the complementizer *que* in Portuguese can be an ‘agreeing complementizer’, though it does not show this morphologically.

As Figueiredo Silva (1997) notes, however, Zubizarreta’s analysis cannot be extended to BP: in BP extraction of subjects out of factive islands *is* acceptable (Figueiredo Silva detects a slight marginality in the sentences below, which she attributes to Subjacency; for me, they are fully acceptable):

- (27) a. ? Que meninos que você lamenta terem sido agredidos pela polícia?
Which boys that you regret to-have(3p) been beaten by the police
- b. ? Que garota que você lamenta que goste do João?
Which girl that you regret that like(Subj/3s) João

On the basis of (27), Figueiredo Silva suggested that BP has the Italian/Spanish strategy at its disposal, that is, BP allows extraction from a postverbal position.⁶ Of course we would like to have further evidence for this claim, given the claim that Portuguese is problematic. (Recall: according to Rizzi, subject extraction from a postverbal position derives from free subject inversion, and Portuguese is not a free subject inversion language.)

⁶ Another solution proposed in the literature for the absence of *that-t* effects in BP is that a *wh* subject might bind a resumptive *pro* in subject position in this language: see Chao (1981), Moreira da Silva (1984), Vitral (1992); see also Rizzi (1982b) for a similar observation concerning Italian.

Direct evidence that subject extraction proceeds from a postverbal position in Portuguese (or in BP, at least) has been hard to find, though: Portuguese does not have a partitive clitic like Italian *ne*, nor negative quantifiers with the properties of Italian *nessuno* and *niente*, so none of the evidence found by Rizzi in Italian can be reproduced in Portuguese.⁷ That is why arguments have tended to be comparative, as Zubizarreta's and Figueiredo Silva's (by "comparative" I mean arguments of the type: "X is what happens in language L; Portuguese is like L in the relevant respects; therefore, X happens in Portuguese as well). The aim of this paper is precisely to argue that Figueiredo Silva is correct, and show that there *is* direct evidence that Portuguese avoids *that-t* violations by extracting subjects from a postverbal position: as will be shown in the next section, the evidence comes from the distribution of floating quantifiers.

⁷ Negative quantifiers like *ninguém* 'nobody/anybody' and *nada* 'nothing/anything' behave as their Italian correlates in simple sentences: if they are in a postverbal position, they require the occurrence of the sentential negation *não*, and in preverbal position they preclude it:

- (i) a. O Paulo **(nã)* gosta de *ninguém/nada*
 Paulo **(not)* likes anybody/anything
 'Paulo does not like anybody/anything'
 b. *Ninguém/nada* **(nã)* agrada ao Paulo
 Nobody/nothing **(not)* pleases to Paulo
 'Nobody/nothing pleases Paulo'

But the pattern is different in embedded and polarity contexts. Italian negative quantifiers behave just like English polarity items like *anybody* and *anything* — they are interpreted as existential quantifiers under the scope of the relevant operator, negation or interrogation (see Rizzi: 121-4). Portuguese negative quantifiers, on the other hand, cannot be construed with a matrix negation if they are within an embedded clause (iia), nor as an interrogative existential (iib):

- (ii) a. * A Maria *nã* disse que o Paulo gosta de *ninguém/nada*
 Mary not said that Paulo likes nobody/nothing
 b. * A Maria *(nã)* sabe se o Paulo gosta de *ninguém/nada*
 Mary (not) knows whether Paulo likes nobody/nothing

4. SUBJECT WH EXTRACTION IS FROM A POSTVERBAL POSITION IN PORTUGUESE, TOO!

Since Sportiche (1988) floating quantifiers (FQs) like *all* and *each* have been taken as a virtual diagnosis detecting the positions through which a moving NP has passed in its way to a target position.⁸ Let me briefly sketch Sportiche's analysis: Quantifiers [Qs] like *all* and *each* are taken to form a constituent [_{NP} Q [_{NP} ...]] at D-Structure with the NP they are associated with. They can be moved together with this NP in its way to a Case position; under this type of derivation, the constituent [_{NP} Q [_{NP} ...]] is preserved throughout the derivation, as illustrated in (28) (note that Sportiche assumes that subjects are base-generated as specifiers of VP):

- (28) a. DS: [_{IP} ____ have [_{VP} [_{NP} all [_{NP} the boys]] left]]
 b. SS: [_{IP} [_{NP} all [_{NP} the boys]]_i have [_{VP} t_i left]]

But NP-movement may also affect only the minimal NP; a remnant structure [_{NP} Q t] is, then, left behind in any of the intermediate A-positions which the originally complete NP has occupied in its way up to a Case position; when this happens, we find an occurrence of a FQ, as illustrated in (29):

- (29) a. DS: [_{IP} ____ have [_{VP} [_{NP} all [_{NP} the boys]] left]]
 b. SS: [_{IP} [_{NP} the boys]_i have [_{VP} [_{NP} all t_i] left]]

As Sportiche demonstrates, this derivation is able to explain many properties of the distribution of FQs.

For my purposes here, the relevant point in Sportiche's analysis is this: the FQ's location signals a position that has been occupied by the dislocated NP during the derivation. For example, the fact that a FQ like *todos* in Portuguese may have the distribution in (30a) indicates that the subject NP has moved through the path in (30b) (of course, the FQ can

⁸ See, however, Doetjes (1993), Baltin (1995) for recent criticism of Sportiche's analysis

occur only once in such sentences):⁹

- (30) a. Os rapazes pareciam (todos) ter (todos) beijado (todos) a Maria (*todos) na festa (*todos)
 The boys seemed(3p) (all) to-have (all) kissed (all) Maria (*all) at the party (*all)
- b. Os rapazes_i pareciam [t_i ter [t_i beijado [t_i a Maria na festa]]]
 The boys_i seemed-3p [t_i to-have [t_i kissed [t_i Maria at the party]]]

Crucially, FQs can also be stranded by a *wh* NP in Portuguese, as shown in (31a,b) below. (31a) shows that the pattern illustrated in (30a) can be reproduced with a *wh* subject; this example, however, is not conclusive, as it might be argued that the *wh* subject is *in situ*. (31b), however, demonstrates that a *wh* subject does not need to be in the subject position in order to license FQs:

- (31) a. Que rapazes pareciam (todos) ter (todos) beijado (todos) a Maria na festa ?
 Which boys seemed(3p) (all) to-have (all) kissed (all) Maria at the party ?

⁹ In (30) and in what follows I leave aside one additional position in which a quantifier might occur in Portuguese and in which it might be taken as a FQ occurrence: the position between the subject and the inflected verb, as in (i) below:

- (i) Os rapazes *todos* pareciam ter beijado a Maria
 The boys (all) seemed to-have kissed Maria

For me, if a sentential adverb intervenes between the subject and the inflected verb, *todos* must precede the adverb, as in (ii) (the example was changed for the sake of pragmatic plausibility):

- (ii) Os rapazes (todos) provavelmente (*todos) queriam beijar a Maria
 The boys (all) probably (*all) wanted to kiss Maria

That is, there seems to be a requirement for adjacency between the subject and a FQ that precedes the inflected verb. This, of course, suggests that the position the quantifier *todos* occupies when it follows the subject (as in (i) and (ii) is *internal to the NP subject*, hence, it is not a case of a FQ at all, but an adjunct of the subject. See Vitral (1992) for different judgments, though.

- b. Que rapazes [o Paulo disse [que pareciam (todos) ter (todos) beijado (todos) a Maria na festa]]?
Which boys [Paulo said [that seemed(3p) (all) to-have (all) kissed (all) Maria at the party]]?

We may conclude, then, that *wh* subjects license FQs in whatever A-positions they happen to have occupied at some point in the derivation of the sentence. And, following Sportiche's analysis of FQs, we can deduce that wherever we find a FQ associated with a *wh* subject, there we also find a trace of that subject.

Before we proceed with the argument, it should be noted that quantifiers like *todos* 'all' and *cada um* 'each' can occur with an empty NP not only when they are FQs, but also when they are used pronominally:

- (32) a. *Os meninos tinham todos* beijado Maria na festa
The boys have all kissed Maria at the party
b. *Todos* tinham beijado Maria na festa
Everybody have kissed Maria at the party

while *todos* is interpreted as related to *os meninos* in (32a), in (32b) it has a pronominal interpretation, meaning something like 'everybody'. Of course, in this last interpretation *todos* is not a floating quantifier, that is, it is not anaphorically related to a dislocated NP.

Now, consider the following minimal pairs:

- (33) a. Que rapazes_i o Paulo desconfia que *ec* gostem [*todos* t_i] de Maria?
de Maria?
* Que rapazes_i o Paulo desconfia que [*todos* t_i] gostem t_i de Maria ?
Which boys_i Paulo suspects that (*all) like (like) Maria?
b. Que rapazes_i o Paulo desconfia que *ec* tenham beijado [*todos* t_i] a Maria?
Que rapazes_i o Paulo desconfia que *ec* tenham [*todos* t_i] beijado t_i a Maria

- * Que rapazes_i o Paulo desconfia que [*todos* t_i] tenham t_i beijado t_i a Maria
Which boys Paulo suspects that (*all) have (all) kissed (all) Maria ?
- c. Que rapazes_i o Paulo disse que *ec* parecem ter beijado [*todos* t_i] a Maria?
Que rapazes_i o Paulo disse que *ec* parecem ter [*todos* t_i] beijado t_i a Maria ?
Que rapazes_i o Paulo disse que *ec* parecem [*todos* t_i] ter t_i beijado t_i a Maria ?
- * Que rapazes_i o Paulo disse que [*todos* t_i] parecem t_i ter t_i beijado t_i a Maria ?
Which boys Paulo said that (*all) seemed (all) have (all) kissed (all) Maria ?

Most of the acceptable sentences in (33) have a *recherché* feeling about it, probably because the construction is not usual in colloquial style. Still, at the appropriate level of formality, the contrasts are clear. And the crucial observation about them is the following: *todos* is interpreted as anaphorically related to *que rapazes* only in the sentences in which it occupies a postverbal position; in the sentences it follows the complementizer *que* and precedes the inflected verb, *todos* cannot be interpreted as anaphorically related to *os rapazes*, but only as ‘everybody’, and the sentence becomes unacceptable, of course (since NP *que rapazes* gets no semantic role in the sentence, violating the θ -Criterion).

Thus, the contrasts illustrated in (33) all involve an asymmetry between pre- and postverbal subject positions as regards extraction, just like the contrasts Rizzi has discovered in Italian (cf. section 2 above). And, as the Italian contrasts, the ones in (33) can easily be explained under Rizzi’s approach. For this, all that is required are two quite unproblematic additional assumptions: (i) like in other NSLs, subjects in Portuguese may occupy (properly governed) postverbal positions if Spec-of-IP is occupied by a null expletive; (ii) as proposed by Sportiche, a FQ can only appear in

A-positions which have been occupied by the NP it is associated with.

Under these assumptions, the acceptable sentences in (33) can be derived by extracting the NP *que rapazes* from one of the *postverbal* positions it has occupied, which are signalled by the FQs. In such a derivation, the trace left by *que rapazes* is, by assumption, properly governed by a verb, and (28b) satisfies the ECP, as required.¹⁰

The unacceptable sentences in (33), on the other hand, can only be derived by extracting *que rapazes* from a *preverbal* position: because of assumption (ii) above, the FQ *todos* can only appear in Spec-of-IP if *que rapazes* has occupied this position. This, in turn, entails that there must be a trace of *que rapazes* in Spec-of-IP in the relevant sentences.

A *that-t* configuration arises, and if this configuration is excluded by the ECP in Portuguese as in Italian or in English, then the ungrammaticality of the unacceptable sentences in (33) follows. Hence, the Portuguese paradigm in (33) above seems to confirm Rizzi's finding in Italian and, in particular, Rizzi's Generalization in (10) above. Moreover, it offers an additional argument for Sportiche's analysis of FQs as resulting from NP-movement and, therefore, as being adjacent to a trace.

Actually, Portuguese provides an even stronger argument both for Rizzi's Generalization and for Sportiche's analysis of FQs: it can actually be demonstrated that FQs are not intrinsically incompatible with an embedded nominative Spec-of-IP position in Portuguese; hence, the trouble with the unacceptable sentences in (33) above seems to be really a

¹⁰ I am assuming here that 'postverbal positions' are properly governed if they are governed by a verb form, in the standard sense of 'government': hence, t_1 in (i) below is governed *beijado* 'kissed'; t_2 , by *ter* 'to-have', and t_3 , by *parecem* 'seem-3pl' (I assume a clause structure similar to the one proposed by Belletti 1990 for Italian and Figueiredo Silva 1997 for Brazilian Portuguese):

(i) *Que rapazes o Paulo disse que* t_4 *parecem* [_{Ag_rSP} t_3 *ter* [_{Ag_rOP} t_2 *beijado*
 [_{VP} t_1 *a Maria*]]?
 Which boys Paulo said that t_4 seem-3pl [t_3 to-have [t_2 kissed
 [t_1 Maria]]]?

For explicit proposals for the appropriate definition of *proper government*, see Rizzi (1982, 1990), Kayne (Kayne 1983), Lasnik & Saito (1992), among many others. Here, what matters is the empirical generalization. See section 5 below for further discussion.

consequence of the *that-t* configuration they contain. To see this, note that (28a,b) indicates that an FQ is possible whenever it is in a position which is properly governed by a verbal form — specifically, whenever the position is preceded and governed by this form (cf. fn. 10 above). If this is correct, the prediction is that an FQ should become possible in an embedded nominative Spec-of-IP position if this position is preceded and governed by a proper governor like a verb form, rather than by the complementizer *que*.

Of course, the relevant configuration should arise when V+INFL is moved to COMP. Thus, what is required is a context in which: (i) V+INFL is moved to COMP in an embedded clause, and (ii) the Spec-of-IP in this clause is assigned nominative. And, fortunately, Portuguese does have such contexts: they arise with non-finite complements of epistemic and declarative verbs; more specifically, they arise when such complements contain an *inflected infinitive*.

As is well known, Portuguese inflected infinitives are non-finite verb forms showing subject agreement morphology and licensing nominative subjects. As illustrated in (34) below, when epistemic and declarative verbs take an inflected infinitive clause as a complement in Portuguese, the inflected non-finite auxiliary has to precede the subject of the complement clause, or the sentence is excluded:

- (34) a. * O Manuel recorda/afirma [os rapazes terem dado um presente pr'a Maria]
 Manuel remembers/says [the boys to-have-3p given a present to Maria]
- b. O Manuel recorda/afirma [terem os rapazes dado um presente pr'a Maria]

Raposo (1987) has convincingly argued the contrast in (34) is due to the fact that epistemic and declarative verbs require the inflected non-finite auxiliary to move to the embedded COMP (see also Rizzi 1982c for similar observations in Italian); hence, the representation of (34a) in (35a)

below is ungrammatical, and the representation of (34b) in (35b) below is grammatical:¹¹

- (35) a. * O Manuel recorda [_{CP} [_{IP} os rapazes terem dado um presente pr'a Maria]]
 Manuel remembers [_{CP} [_{IP} the boys to-have-3p given a present to Maria]]
 b. O Manuel recorda [_{CP} terem_i [_{IP} os rapazes [_{I'} t_i dado um presente pr'a Maria]]]

For my purposes here, what matters is that (35b) instantiates precisely the configuration with which a possible incompatibility of FQs with nominative Spec-of-IP can be tested: if there is such an incompatibility, an FQ should be excluded if associated with a *wh* subject extracted from the embedded Spec-of-IP in a structure like (35b); if there is no such incompatibility — and, therefore, the ungrammaticality of the unacceptable sentences in (33) above is really a consequence of the *that-t* configuration they contain —, then an FQ should be possible in the embedded Spec-of-IP of (35b).

Note, however, that for the above test to work out, there is yet another factor to be controlled: since an FQ can occur in a position preceding a past participle and following the inflected verb (as in (33b,c) above), the FQ in (36a) below might, in principle, result either from the structure in (36b), or from the one in (36c):

¹¹ Specifically, Raposo's explanation for the obligatoriness of subject-verb inversion in (34b) above is based on two other facts he demonstrates: (i) inflected infinitives must be assigned Case; (ii) epistemic and declarative verbs can only take CPs as complements; hence, the representations in (35). Given these representations and Chomsky's (1986) definition of government, it follows that the inflected infinitive is not governed by the matrix verb in (35a), only in (35b); hence, it can be assigned accusative only in the latter; (34b) is grammatical, therefore; (34a), ungrammatical. With factive verbs, both possibilities are acceptable cf. (38a,c) below. This is so, according to Raposo, because factives can take either CPs or IPs as complements. If the complement is an CP, the pattern must be as with epistemic and declarative verbs; if it is IP, the embedded auxiliary can stay in INFL since this is the head of the complement and, therefore, it is governed by the matrix verb.

- (36) a. Que rapazes_i o Manuel recorda [_{CP} terem [_{NP} *todos* t_i]
comprado um presente pr'a Maria] ?
Which boys_i Manuel recalls [_{CP} to-have-3pl [_{NP} *all* t_i]
bought a present to Mary
- b. Que rapazes_i o Manuel recorda [_{CP} terem_k [_{IP} *ec* [_{I'} t_k
[_{NP} *todos* t_i] comprado um presente pr'a Maria]]] ?
- c. Que rapazes_i o Manuel recorda [_{CP} terem_k [_{IP} [_{NP} *todos* t_i]
[_{I'} t_k comprado um presente pr'a Maria]]] ?

Of course, the crucial structure is (36c). What is required, therefore, is some demarcatory material showing that the FQ is effectively preceding the position vacated by the inflected infinitive, hence indicating that we are really dealing with the structure in (36c). As shown in (37) and (38) below, the negative quantifier *nada* 'nothing' serves this purpose well:

- (37) a. [_{IP} João *nada*_i [_{I'} tinha [feito t_i para ajudar Maria]]]
[_{IP} João nothing_i [_{I'} has [done t_i to help Maria]]]
"João has done nothing to help Maria"
- b. *[_{IP} João [_{I'} tinha *nada*_i [feito t_i para ajudar Maria]]]
- (38) a. João lamentou [_{IP} os rapazes *nada*_i [_{I'} terem [feito t_i para
ajudar Maria]]]
João regretted [_{IP} the boys nothing_i [_{I'} to-have-3p [done
t_i to
help Maria]]]
'João regretted that the boys did nothing to help Maria'
- b. *João lamentou os rapazes terem *nada*_i feito t_i para ajudar
Maria
- c. ? João lamentou [_{CP} terem_k [_{IP} os rapazes *nada*_i [_{I'} t_k [feito t_i
para ajudar Maria]]]]

(37a) shows that *nada*, when interpreted as the object of the main verb, can be dislocated to a preverbal position between the subject and INFL (i.e., the position occupied by the inflected verb); (37b) shows that, when so dislocated, *nada* cannot occupy a position between INFL and the

participle. (38a,b) show that *nada* preserves this distribution in non-finite complements; it can, therefore, be deduced that *nada* still is in the same position if INFL-to-COMP applies, as in (38c) (unlike epistemic and declarative verbs, factives allow both structures, cf. fn. 11 above). Sentences like (38c) are stylistically marked, and appropriate only in formal styles; but, again, the contrast with (38b) is salient enough for us to recognize (38c) as a grammatical sentence.

The conclusion that the negative quantifier *nada* ‘nothing’ may occupy a position between Spec-of-IP and INFL can be extended, of course, to the case of INFL-to-COMP in non-finite complements of epistemic and declarative verbs:

- (39) ?Manuel afirma [_{CP} terem_i [_{IP} os rapazes *nada*_j [_{I'} t_i [feito t_j para Maria]]]]
 Manuel claims [_{CP} to-have-3pl_i [_{IP} the boys *nothing*_j [_{I'} t_i [offered t_j to Maria]]]]

Now a nominative Spec-of-IP position was isolated which is preceded and governed by a verbal form in COMP, and not by the complementizer *que*, namely, the position occupied by *os rapazes* in (39). This position can be used to test whether FQs are incompatible with nominative Spec-of-IP, or whether the ungrammaticality of the unacceptable sentences in (33) above is due to the *that-t* configuration they contain. The crucial question to answer is: is it possible for a *wh* subject to leave a stranded FQ in Spec-of-IP in (39) above? The answer is yes: (40a) below, with the structure in (40b), is fully grammatical in Portuguese (the observation about the level of formality required for the appropriate stylistic used of such sentences applies here as well):

- (40) a. Que rapazes_i o Manuel afirma terem *todos* nada oferecido de presente pr'a Maria no aniversário dela?
 Which boys Manuel claims to-have-3pl *all* nothing offered of present to Maria in her birthday

- b. Que rapazes_i o Manuel afirma [_{CP} terem_k [_{IP} [todos t_i] nada [_{IP} t_k oferecido de presente pr'a Maria no aniversário della]]]?
 Which boys_i Manuel claims [_{CP} to-have-3p]_k [_{IP} [all t_i] nothing [_{IP} t_k offered of present to Maria in her birthday]]]?

(40) not only shows that FQs are compatible with a nominative Spec-of-IP, but it crucially confirms that the unacceptability of the unacceptable sentences in (33) above comes from the *that-t* configuration they contain: once a verbal form is moved to COMP, the subject trace is licensed in Spec-of-IP. This is precisely what is predicted if, as Rizzi proposed, a trace in Spec-of-IP is never properly governed in *that-t* configurations, and if traces preceded and governed by a verbal form are It can, therefore, be concluded from the paradigm in (33) and from (40) that: (i) Portuguese does show surface *that-t* effects; (ii) it circumvents the problem by extracting the subject from postverbal position, just like Italian and Spanish.¹²

¹² Portuguese facts confirm another of Rizzi's findings (also corroborated by Brandi & Cordin 1989, and possibly by Kenstowicz 1989, cf. his note 4, p.275). As Rizzi observed, the interaction of *wh* extraction and *ne* cliticization in Italian provides evidence that even short *wh* movement of subjects in NSLs must proceed from a postverbal position. In declarative clauses unaccusative verbs are compatible with any of the patterns of N' pronominalization referred in section 2, that is, either *ne* cliticization with a postverbal subject, or a null N' with a preverbal subject, cf. (8) and (9) above. But, surprisingly, if the subject of an unaccusative verb is *wh* interrogated, only *ne* cliticization is acceptable (Rizzi 1982:151-4):

(i) Quante *(ne) sono cadute?

How-many *(of-them) fell down?

That is, short *wh* interrogation of unaccusative subjects must be from the postverbal position. As shown (ii) below, stranding of FQs in Spec-of-IP is impossible by short *wh* movement of the subject in Portuguese, which shows that subjects must be extracted from a postverbal position in Portuguese, too:

(ii) a. Provavelmente (*todos*) os rapazes tinham (*todos*) visto a Maria nua
 Probably (*all*) the boys have (*all*) seen Maria nude
 b. *Que rapazes provavelmente [*todos* t] tinham visto a Maria nua?
 c. Que rapazes provavelmente tinham [*todos* t] visto a Maria nua?

Just like in (33) above, *todos* is interpreted as "everybody" in (iib). See fn. 9 above on the role of *provavelmente* in demarcating the position of the FQ.

5. FINAL REMARKS

I have shown in the preceding section that Portuguese avoids *that-t* configurations by extracting subjects from a postverbal position. Let us now briefly consider some consequences of this finding. Recall that Rizzi's Generalization, repeated in (41) below, was supposed to hold only for NSLs because only these would also allow 'free inversion' of the subject — this condition, according to Rizzi, should be met in order for the subject to be able to be governed by the verb:

(41) *Rizzi's Generalization:*

In NSLs extraction of subjects proceeds from a position verbed by the verb.

According to the literature on Portuguese, however, this language seemed to be a problem for (41): like NSLs, it does not show surface *that-t* effects, and yet it does not have 'free inversion' of subjects. But note that 'free inversion' is *not* really necessary for (35) to hold in a language. All that (35) requires is that the language concerned permits configurations in which a verbal form governs the subject in the relevant sense. And, as we have seen, this is plainly the case of Portuguese. Actually, Portuguese offers a particularly strong argument for this conclusion: it shows that as soon as V+INFL to COMP turns Spec-of-IP a position governed by a verb form, subjects *can* be extracted from it.

But the Portuguese data discussed in this squib also indicate that Rizzi's observations must be extended, in particular in regards to the positions that allow subject extraction. In his (1982) paper, Rizzi considered subject extraction to be possible from only one position: VP-internal positions governed by the main verb. What the Portuguese data suggests is that: (i) neither the governing verb form needs to be the main verb — an auxiliary will do the job just as well, as in (33) above; (ii) nor the subject position needs to be VP-internal — any will do, as long as it is governed by a verb form, as shown by the extraction from Spec-of-IP in V+INFL-to-COMP contexts like in (40). Thus, whatever the definition of head-government turns out to be which is appropriate for the ECP (see fn. 10 above and

references cited there), it should incorporate both (i) and (ii).

It should finally be pointed out that none of the considerations above touch on the problem of why Rizzi's generalization holds only for NSLs. For English, absence of verb movement in the case of lexical verbs could explain partially the restriction — there would be never a configuration in which such verbs would both govern and precede a subject position. But note that this does not explain why English shows *that-t* effects with auxiliaries and modals, which presumably govern and precede the VP-internal subject position. And the problem is generalized in French, since even main verbs may move to INFL in French, in which case they would govern and precede the VP-internal subject position. So, it seems that some version of Rizzi's original explanation for the null subject parameter still holds: both in NSLs and in non-NSLs a subject can stay in a position governed and preceded by a verb form only if an expletive occupies Spec-of-IP (because, say, of the EPP); but in NSLs, expletives are null; hence, the appearance that no NP occupies Spec-of-IP and that, therefore, the subject has been extracted from it.

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