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PRO DROP LANGUAGES AND NONOBLIGATORY CONTROL

Wynn Chao

0. Introduction

This paper deals with null subjects and related phenomena in
Pro Drop languages. The language under study is Brazilian Portuguese,
which seems to display all of the typical characteristics of other Pro
Drop languages, with the exception of free subject postposing. Section 1
presents Rizzi's (1979) analysis of Pro Drop languages. Section 2
presents an alternative account for Portuguese, which is also consistent
with other Pro Drop languages. Section 3 contains some syntactic argu-
ments for this alternative.

1. Pro Drop languages are those languages which do not obligatorily
require the presence of phonetically realized subjects in tensed clauses.
In using the standard terms "Pro Drop" and "Subject Drop," however, I
do not mean to imply that a deletion process is involved.

It has been argued (Chomsky 1979, Rizzi 1979) that Pro Drop lan-
guages are characterized by the following properties, which are illustrated
in the following sentences in Italian:

1. a. <u>Subject drop</u> (SD) $[_{NP}$ e$]$ verrà.   '(he) will come'.

    b. <u>Subj. postposing</u> $[_{NP}$ e$]$ verrà Gianni. 'Will come Gianni'

    c. <u>that-t violations</u>   Chi credi $[_{S'}$ che $[_S[_{NP}$ e$]$ verrà?$]]$

            'Who do you believe $[_{S'}$ that $[_S[_{NP}$ e$]$ will come?$]]$'

None of these constructions are allowed in a non-Pro Drop language such
as English. These properties raise some interesting questions for the
Government Binding (GB) framework (Chomsky 1979, Koster 1979). The dis-
cussion of these questions, which follows, is based largely on issues
presented in the Third Pisa lecture and in Rizzi (1979).

The principle which in GB rules out <u>that-t</u> violations in English
is the <u>Empty Category Principle</u> (ECP), presented in (3). ECP presupposes
the definition of <u>government</u>, a version of which is given in (2) (adapted
from Chomsky, Fall 1979, MIT lectures).

2. α <u>governs</u> β in the structure $[_X \ldots \alpha \ldots \beta \ldots]$ or $[_X \ldots \beta \ldots \alpha \ldots]$, where X=NP or S, if:

    i.   α c-commands β and,

    ii.   α is either lexical (N,V,P,A) or INFL (the inflectional element generated as a daughter of S, whose features include tense and verbal agreement) and,

    iii. there is no φ, (φ = the maximal projection of a category, i.e., NP, VP, S'; such that φ dominates β and does not dominate α).

Here are some structures to illustrate the definition:

α governs β   e.g.,

α governs β

α does not govern β
(there is an φ which dominates β but not α)

α does not govern β
(α does not c-command β)
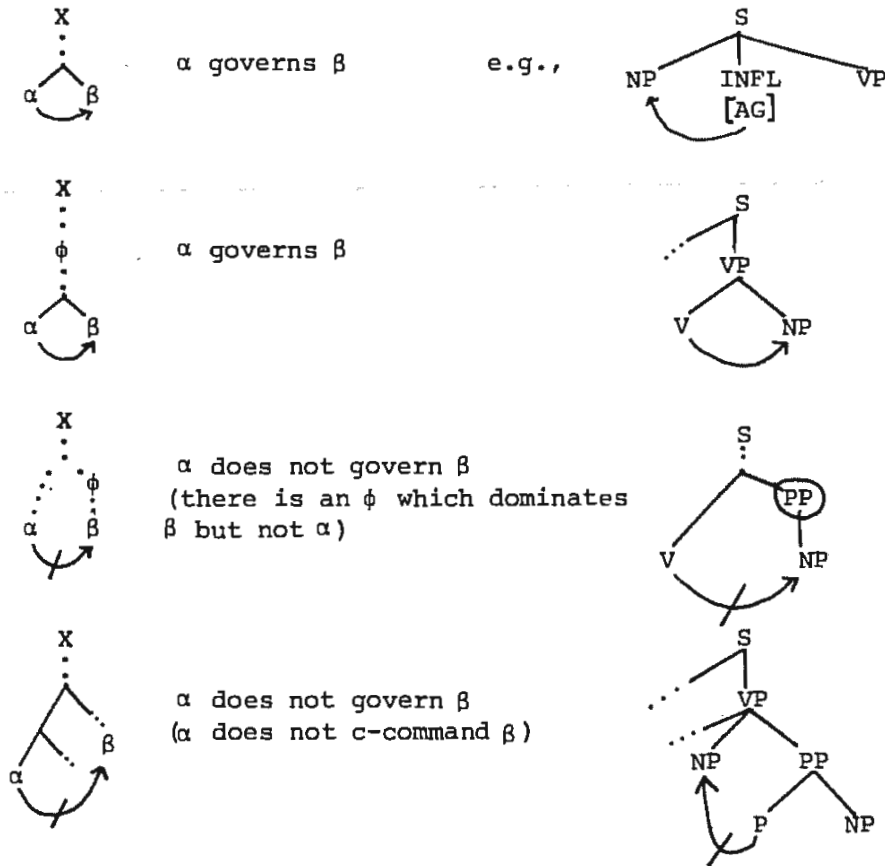
The Empty Category Principle is stated as follows:

3. <u>ECP</u> $[_{NP}$ e] must be <u>properly governed</u>.   (Pisa lect. 3,(47),(48))

4. α <u>properly governs</u> β iff:

    a. α governs β and either
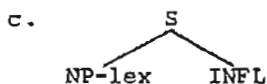   b. i. α is lexical, or
        ii. α and β are coindexed.

Again, we will illustrate with examples: (NP-e = $_{NP}[e]$)
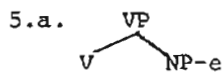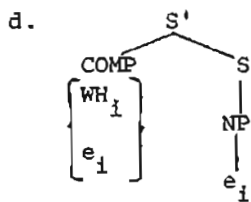
5.a. VP
      V   NP-e   allowed by ECP, NP-e is governed by a lexical
                                  governor.
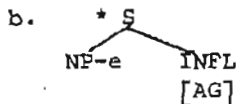
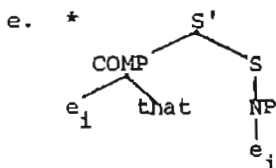b.   * S   ruled out by ECP; INFL = α, and α is not lexical.
     NP-e   INFL
            [AG]

c.   S   allowed, ECP applies only to empty categories
     NP-lex   INFL

d.   S'   allowed: $\{WH_i/e_i\}$ = α, and α is coindexed
     COMP   S   with NP-e.
    $\begin{bmatrix} WH_i \\ e_i \end{bmatrix}$ NP
                    e_i ex: Who_i did John think $[_{S'}[_{COMP} e_i]$ NP-e_i left?

                                       John wondered $[_{S'}[_{COMP} who_i]$ NP-e_i left.$]$

e. *   S'   ruled out: WH-e in COMP = α, and α does not
   COMP   S   c-command the trace of NP.
      e_i that   NP
                     e_i

Two characteristics of Pro Drop languages are problematic for GB
theory and for ECP. Subject deletion (Pro Drop) violates ECP (case (5b)),
and the permissible that-t sequences result in structures such as (5e).
Subject postposing will not violate ECP, if we assume the structure
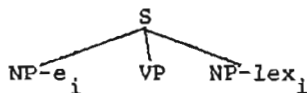
          S   , or even a base generated   S   (this was
     NP-e_i VP NP-lex_i VP NP_i
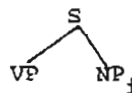
suggested by Edwin Williams, personal communication).

    Within the On Binding framework, Taraldsen (1978) proposed that in
Pro Drop languages the agreement marker (AG) coindexes with a trace in
subject position.

    ... $_{[nom]}NP-e_i...AC_i...$

Null subjects of tensed sentences will always be properly bound as a result
of this coindexing, so Pro Drop is no longer problematic for ECP. When

we try to extend Taraldsen's analysis to the GB framework, however, a further problem arises in connection with the extended case filter (ECF). ECF requires that NP-e's have case if and only if they are interpreted as 'variables', in the special sense in which they are used in GB: in LF they must be coindexed with some appropriate c-commanding quantifier. The problem arises when the null subject (which has been assigned nominative case by AG), refers either to another NP in the sentence or to some contextually determined antecedent (1a). Since there are no quantifiers involved, the extended case filter should rule out these sentences.
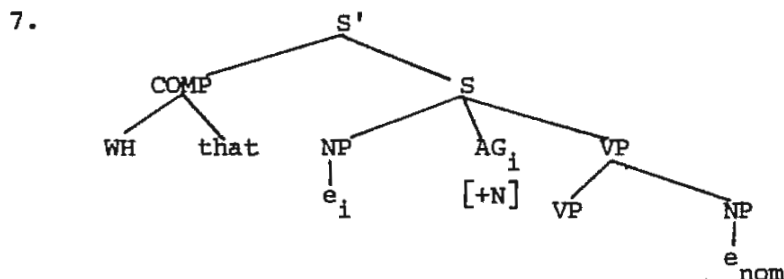
Rizzi's analysis

Rizzi's (1979) proposal addresses itself to this issue.[1] In the proposal, one of the parameters of UG is that AG can have either a $[+N]$ or a $[-N]$ feature specification. $AG[-N]$ is the only option allowed for languages which require obligatory subjects, such as English. $AG[-N]$ will assign nominative case to the NP that it governs, in accordance with the principle governing the assignment of abstract case: that case is assigned by $X^0[-N]$ categories (Vergnaud 1979). It will not, however, properly govern the subject NP, since it is nonlexical.

Languages like Italian allow AG to have either feature specification. $AG[-N]$ works as described above. $AG[+N]$ cannot assign case (because it is not $[-N]$), but will coindex with the preverbal NP-e, thus properly binding it. In this respect, Rizzi's AG is very much like Taraldsen's AG. In Pro Drop languages, then, out of the four possible configurations, two are wellformed:

6. a.   NP-lex...AG ...
         $[+nom]$ $[-N]$

   b.   NP-e$_i$...AG$_i$...
                  $[+N]$

The two remaining configurations, $[NP-lex...AG[+N]...]$, and $[NP-e..AG[-N]...]$ are ruled out by independent principles in the theory.)

If NP-e in (6b) is the trace of WH, the trace cannot now be interpreted as a variable because it is not case marked. Rizzi argues that in this case, the subject is first postposed by the same rule responsible for subject postposing, and only then moved into COMP (7).

7.

```
                    S'
             _____|_____
           COMP                     S
          __|__              _____|_____
        WH   that          NP      AG_i       VP
              |            |       [+N]     ___|___
             e_i                          VP      NP
                                                  |
                                                  e
                                                   nom
```

The postposed subject is assigned case by special rule, and can thus be

interpreted as a variable. The preverbal trace is coindexed with AG, and hence is properly governed.

There are some remaining complications, however. The basic notion of government must be changed in order for the NP in postposed position to be governed (and thus assigned case), since in this structure there is no available c-commanding lexical governor (this was pointed out by Yasuaki Abe). The indexing convention (coindex with movement) must likewise be changed. If the postposed NP is coindexed with its preverbal trace, the result is ruled out by the binding conditions: the postposed NP is an R-expression (R = referring), and so cannot be coindexed to a c-commanding NP in argument position. And since coindexing is sometimes also a means of preserving information about grammatical relations (cf. coindexing of surface subject of the passive sentence to the trace in object position), a convention which would change this index will destroy this information. In (7), for instance, it would become unclear how the postposed NP should be understood as the 'subject' of the sentence.

Finally, it should be noted that in order to generate that-t sentence the analysis crucially depends on the existence of subject postposing. If a language has Pro Drop but no subject postposing, the prediction is that it should not have any that-t violations either.

Portuguese

Brazilian Portuguese falsifies this prediction. The language allows both null subjects and that-t violations freely, and no subject postposing to speak of, except in highly restricted contexts: contrastive focus, poetic language. And there is no free postposing in tensed embedded sentences, a requirement which is crucial if one is to derive that-t violations.[2]

8. a. SD $\left\{\begin{array}{c}\text{eles}\\ \emptyset\end{array}\right\}$ sairam.   '(they) left.'

    b. that-t   As pessoas $\begin{bmatrix}\text{que}\\ \text{[+WH]}\end{bmatrix}$ João disse $_{S'}$[que $\emptyset$ haviam saido..]]...
          'The people [that João said [that $\emptyset$ had left...]]...'

    c. subject   *Sairam eles. (noncontrastive rdg.) 'left they.'
        postposing
                 *João disse [$_{S'}$ que sairam eles.] 'João said that left tl

The sentences in (8c) can be compared to their perfectly natural counter-parts in Spanish, which does allow postposing.

8c'. Salieron ellos.   'left they.'

      Juan dijo [$_{S'}$ que salieron ellos.]   'Juan said that left they.'

We do find cases of postverbal subjects in Portuguese (9a), but these are better analysed as cases of Subject-Verb inversion, which is attested independently of postposing (9b).(subjects are underlined).

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9. a. Chegou o João.   'Came João.'
      Não sei quando chegou o João.   'I don't know when came João.'

    b. No entanto, complicaram <u>outros fatores</u> a hipótese.
      'However, complicated (pl.) other factors the hypothesis.'

      Apesar da briga, deu <u>o João</u> muitos presentes a sua amada.
      'In spite of the fight, gave João many presents to his lover.'

     This hypothesis is supported by the fact that sentences such as
(9a), where the subject is in sentence final position, become consider-
ably worse if there is material intervening between verb and subject
(10a); and that some of these sentences become better if the subject is
placed immediately after the verb.

10. a. *Chegou ontem de avião <u>o João</u>.
      'João arrived yesterday by plane.'

      *Viu os caixotes <u>João</u>.
      'João saw the crates.'

      *Falou com a Maria <u>João</u>.
      'João talked with Mary.'

      *João disse que chegou ontem <u>o Pedro</u>.
      'João said that Pedro arrived yesterday.'

    b. ??Chegou <u>João</u> ontem de aviao.
      'Arrived João yesterday by plane.'

      ??Ontem chegou <u>o João</u> de avião.
      'Yesterday, arrived João by plane.'

      ??João disse que chegou <u>o Pedro</u> ontem.
      'João said that arrived Pedro yesterday.'

The sentences in (10a) can also be compared with similar sentences in
Spanish, which are grammatical:

11. Llego ayer Juan.   Same translations as (10a)
    Vio Los carrones Juan.
    Hablo con Maria Juan.
    Juan dijo que llego ayer Pedro.

     I conclude from these facts that subject postposing is not "free"
in Brazilian Portuguese; at least not in the same sense that it is free
in Spanish and, apparently, in Italian. It seems, then, that postposing
is not a necessary property of Pro Drop languages, while <u>that-t</u> violation
still seems to be. Given this fact, an analysis of <u>that-t</u> phenomena
should not be linked to subject postposing.

     The idea behind Rizzi's analysis is that the null subject in these
languages has a special status, which somehow allows it to violate the
binding conditions. This special status is realized via the close rela-
tionship between the null subject and the S category. It is this special

relationship which accounts for both the existence of null subjects and violations of _that-t_, and which also allows for subject postposing in some Pro-Drop languages. In Taraldsen's and Rizzi's analyses, this relationship is indicated by coindexing NP-e and AG (the head of the S category). However, coindexation brings with it other problems related to the binding conditions, as we have seen. In the following section, I will present an alternative way of viewing this relationship, which tries to put forth a unified analysis to account for the acceptability of _that-t_ violations in both postposing and nonpostposing languages.

2. In this section, I will propose an extension of the theory of Predication developed in Williams (1980) to account for the existence of null subjects in a Pro Drop language, Portuguese. I will then present an analysis of sentences containing _that-t_ violations, where certain aspects of the Predication theory play a crucial role.

In "Predication," Williams defines a level of representation which he calls _predicate structure_. This level is defined within the model of the revised extended standard theory; it is also consistent with the more recent GB theory. The theory of predication defines certain constituents as _predicates_, and indicates the subject-predicate relation which holds between an NP and a predicate by means of coindexing. Below are some examples of NP and some other constituent standing in predication relation (numbers in parentheses correspond to Williams 1980):

12. <u>simple predicates</u>

$..NP_i..AP_i..$ John ate <u>the meat</u>$_i$ <u>raw</u>$_i$.   (W 1b)

                          I presented <u>it</u>$_i$ to John <u>dead</u>$_i$.   (W 3a)

$..NP_i..NP_i..$ John made <u>Bill</u>$_i$ <u>a doctor</u>$_i$.   (W 14)

$..NP_i..PP_i..$ John kept <u>it</u>$_i$ <u>near him</u>$_i$.   (W 14)

$..NP_i..VP_i..$ John$_i$ <u>died</u>$_i$.   (W 14)

<u>complex predicates</u>

$..NP_i..[PRO\ VP]_i$ <u>John</u>$_i$ promised Bill [PRO to leave]$_i$ (W 31)

                          John persuaded <u>Bill</u>$_i$ [<u>PRO to leave</u>]$_i$ (W 31)

                          <u>John</u>$_i$ died [<u>PRO waiting for a bus</u>]$_i$ (W 32)

In complex predicates, PRO is interpreted as the predicate variable. All of the examples given above contain predicates in <u>obligatory control</u> (OC) environments.

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Obligatory control

OC is required when the predicate is in a predication position (i.e., must be interpreted as the predicate of some specified NP). As we shall see, this is not always the case. There are also cases of predicates in nonpredication positions--structures which do not uniquely specify the 'subject' NP. These will be discussed in the next section, under nonobligatory control.

Predication positions include predicates (underlined) in these structures: $[_{NP} \underline{VP}]$, $[_{NP} VP \underline{X}]$, $[_{NP} be \underline{X}]$, etc. The predication rule (omitting a sub-rule which is not directly relevant) is:

13. Coindex NP and $\underline{X}$.
    (NP must c-command either X or its trace)

Obligatory control is characterized by the following properties:

14. OC1. lexical NP cannot appear in the position of PRO.

$$\underline{John}_i \text{ promised Bill } [\underline{PRO \text{ to leave}}]_i.$$
$$\text{*John promised Bill } [\text{Peter to leave}].$$

OC2. the antecedent precedes the controlled PRO.

OC3. the antecedent c-commands the controlled PRO.

$$\text{*Bill was promised } [by \underline{John}_i] [\underline{PRO \text{ to leave}}]_i.$$

OC4. the antecedent is thematically (a) or gramatically (b,c) uniquely determined.

a. *John promised $\underline{Bill}_i$ $[\underline{PRO \text{ to leave}}]_i$.
b. John saw $\underline{Mary}_i$ $[\underline{PRO \text{ waiting for the bus}}]_i$.
c. *$\underline{John}_i$ saw Mary $[\underline{PRO \text{ waiting for the bus}}]_i$.

   (NB: (c) is supposed to be ruled out by the stipulation that the controller of a predicate inside a VP must be the theme. However, some speakers accept this sentence, so the stipulation on theme control may have to be changed.)

OC5. there must be an antecedent.

$$\underline{John}_i \text{ died } [\underline{PRO \text{ waiting for the bus}}]_i.$$
$$\text{*It rained } [\text{PRO waiting for the bus}].$$

Cases of OC are represented as predication at the level of predicate structure. That is to say, the predication rule applies to them. Predicates in nonpredication positions do not undergo the rule, and show none of the above-mentioned properties.

Nonobligatory Control (NOC)

NOC has none of the properties which characterize OC. For example, in a case such as (15), the antecedent need neither precede nor c-command the controlled PRO. PRO can also alternate with a lexical NP (15b); a lexical antecedent within the sentence is not necessary (15c), and if there is an antecedent, it is not uniquely determined (15d).

15. a. [PRO to leave] would be $_{NP}$[my pleasure].

    b. [For John to leave] would be a pleasure.

    c. [PRO to leave before the rush hour traffic] is always a pleasure.

    d. John told Bill that [PRO leaving early] was better than waiting for Fred.

In NOC cases, the predicate receives the index arb (arb stands for 'arbitrary') at the predicate structure level. Arb can be seen as the default index given to a predicate which could not undergo the predication rule. On the way to defining LF, arb rewriting rules can apply to rewrite the arb index to the index of some other NP in the sentence.

There are two rewriting rules. The first is obligatory, and ordered before the second.

16. Arb rewriting I (W 59)

    rewrite arb as coindexed with an NP which commands it, and which it commands.

This rule will apply to sentences such as:

17. I want [PRO to leave]$_{arb}$.

    [PRO to leave]$_{arb}$ would be my pleasure.

18. Arb rewriting II (W 63)

    if an NP commands arb, coindex NP and arb. (optional)

In (19), the controller can be either John, Mary, or neither, if the rule does not apply.

19. John told Mary that it was important [PRO to leave early].

The model, with the predication level added, looks as follows:

20. (W 58)

DS ⟶ SS ⟶ PS ⟶ LF
    move α   predication   arb. rewriting,
                              reflexivization, etc.
                c-command   opacity

Pro Drop

Now let's assume that Portuguese, and Pro Drop languages in general, allow $[\emptyset \text{ VP}_{tns}]_S$ to be interpreted as a predicate. (I am using $\emptyset$ instead of PRO for the predicate variable of tensed predicates because using PRO now would raise questions about government and case marking. I would like to postpone discussion of these issues for later sections.). A non-pro drop language, then, allows [PRO to VP]'s (infinitival clauses without lexical heads) as predicates. A pro drop language allows the more general case, [PRO/$\emptyset$ VP] (i.e., any clause without a lexical NP head, regardless of presence or absence of tense) as a predicate.

At PS, two things can happen to a [$\emptyset$ VP] predicate. If it is not in a predication position, it will receive an <u>arb</u> index; if it is in an obligatory control position, it will be coindexed with the NP which controls the position.

Obligatory control (OC)

A case of OC in Portuguese involving tensed predicates is:

21. João aconselhou [aos seus amigos]$_i$ que [$\emptyset$ deveriam acordar cedo]$_i$.

    'João advised [his friends]$_i$ that [$\emptyset$ should$_{3pp}$ wake up early]$_i$.

    Variants of this sentence where the $\emptyset$ position cannot be interpreted as controlled by 'a NP' are unacceptable.[3] These variants include both cases where the subject is lexical (22), and cases where the inflection in the embedded verb is incompatible with the OC reading (23).

22. *João aconselhou [aos seus amigos]$_i$ que [Pedro deveria acordar cedo.]

    'João advised his friends that [Pedro should wake up early.]'

23. $^{\pm}$João aconselhou [aos amigos]$_i$ que [$\emptyset$ deveríamos acordar cedo.]

    'João advised his friends that [$\emptyset$(we) should$_{1ppl}$ wake up early.]'

When the subject of the embedded sentence is a pronoun which can be interpreted as bound to the controller, the sentence is somewhat redundant, but still acceptable.

24. João aconselhou [aos amigos]$_i$ que [eles$_i$ deveriam acordar cedo.]

    (same as (21))

The sentence becomes even better if the controller is a quantified NP.

25. João aconselhou [a todo o honem]$_i$ que [ele$_i$/$\emptyset$ deve acordar cedo.]

    'João advises [every man]$_i$ that [he$_i$/$\emptyset$ should wake up early.]'

Nonobligatory control (NOC)

The paradigmatic examples of NOC in $[\emptyset\ VP]$ structures are : (li) matrix sentences with null subjects (26a), and (ii) embedded sentences in nonpredication positions (26b,c).[4]

26. a. $[\emptyset\ \text{saíram.}]$ '$\emptyset$ left$_{3ppl}$.'

     b. João disse que $[\emptyset\ \text{saíram.}]$ 'João said that $\emptyset$ left$_{3ppl}$.'

     c. João disse a amiga deles que $[\emptyset\ \text{provavelmente ainda não haviam}$ chegado.$]$
        'João told a friend of theirs that $[\emptyset$ (they) probably hadn't arrived yet.$]$'

The interpretation of these predicates proceeds as follows:

$$\text{PS (NOC)} \begin{cases} \text{a.} & [\emptyset\ \text{saíram}]_{arb} \\ \text{b.} & J_i\ \text{disse que } [\emptyset\ \text{saíram}]_{arb}. \\ \text{c.} & J_i\ \text{disse } [\text{a amiga } [\text{deles}]_k]_j\ \text{que } [...\emptyset\ \text{não haviam chegado}]_{arb} \end{cases}$$

$$\text{arb rewriting} \begin{cases} \text{a.} & \text{cannot apply, no NP antecedent} \\ \text{b.} & \text{cannot apply, features conflict} \\ \text{c.} & \text{J. disse } [\text{a amiga } [\text{deles}]_k]_j\ \text{que } [...\emptyset\ \text{não haviam chegado}]_k. \end{cases}$$

$\emptyset$: generic vs. definite readings

Williams takes an <u>arb</u> index which has not been rewritten by arb rewriting rules to be interpreted either as 'generic' or free in reference.

27. $[\text{PRO to study}]_{arb}$ is fun.

In (27), PRO does not refer to anyone in particular. In contrast, null subjects, so goes the standard claim, must always be interpreted as definite pronouns, whose reference is determined by verbal inflection and by context. This is certainly true of sentences (26a-c). If PRO and $\emptyset$ must indeed always receive different interpretations, then an analysis of both as predicate variables of S would seem rather unnatural. However, it seems that both free and definite readings are available to PRO and $\emptyset$. A PRO without a sentence internal controller will be interpreted as definite when the proper context is provided.

28. context: John has been hobbling around for two weeks with a sprained ankle. One of his friends asks another:

     A: So what did the doctor tell him yesterday?

     B: He said that it was not advisable $[\text{PRO to run so soon after injuring himself}]_{arb}$

Here it would be hard to interpret the predicate as referring to anyone
other than John. Note also that the form of the reflexive is <u>himself</u>,
not the generic <u>oneself</u>.

It is also not the case that ∅ must always receive a definite or
referential reading. In impersonal constructions, the (obligatorily)
null subject is best translated as the nonreferential 'it', or the indefi-
nite 'one'.

29. a. Parecia que ninguém vinha
    'It seemed that no one would come.'

    b. Aqui se vive muito bem.
       'Here one lives very well.'

Another construction which allows indefinite interpretation is a null sub-
ject with the verb in the 3rd person plural. (39a) and (30b) illustrate
a case where a sentence with a null subject does not have the same range
of possible readings as its counterpart with the corresponding pronominal
subject.

30. a. <u>∅</u> mataram o pobre coitado (...e ninguém sabe quem é o assassino).
       '(someone) killed the unfortunate man (and nobody knows who the
          killer is).'

    b. <u>Eles</u> mataram o pobre coitado (#...e ninguém sabe quem é o
          assassino).
       'They killed the unfortunate man (# and nobody knows who the
          killer is).

(30a) allows in principle of two readings: the one corresponding to (30b),
in which there is more than one killer; and the indefinite one, where all
we know is that the man has been killed. This second reading is similar
to the indefinite use of <u>they</u> in English ('Stay here. <u>They</u>'ll kill you
is you go out!') In the relevant reading, there is no implication that
more than one person will do the killing, nor that the speaker has any idea
who the killers might be. The continuation to (30a) forces the indefinite
reading in two ways: first, it refers to the killer in the singular
(<u>o assassino</u>, as opposed to <u>os assassinos</u>), and second, it negates the
definite reading, by saying that the killer is unknown.

This 'indefinite <u>someone</u>' reading is not available to the corresponding
pronominal forms. We cannot continue (30b) in a way that forces an indefinite
reading for the subject definite pronoun. This reading is also not avail-
able to definite object clitics:

30. a. Um assassino <u>os</u> matou.
       'A killer killed them'
       *'A killer killed someone.'

One might argue that both the 'indefinite <u>one</u>' reading in (29b)
and the 'indefinite <u>someone</u>' reading in (30a) are roughly equivalent to the
<u>arb</u> reading in (27). The "equivalence" is still very rough, but I hope

to have shown in this section that PRO and $\emptyset$ are not quite as different as it has been assumed.

With regard to which of the possible interpretations is realized in each case, it is important to realize that context plays a crucial role in determining whether a referential or an <u>arb</u> reading will be selected. In pro drop languages, the inflection on the verb determines both tense and person (although not uniquely), and will restrict the context even when the sentence is presented in isolation. This alone can make a definite reading of $\emptyset$ in tensed clauses far more plausible than a definite reading of PRO in uninflected tenseless clauses.

<u>Empty Category Principle</u> (ECP)

Now, what kind of null element is $\emptyset$? The theory allows two basic types of null elements: PRO, which contains semantic features characteristic of pronominal elements (person, number, etc.), but lacks phonological realization, and NP-e ($[_{NP}\ e]$), the empty category. If $\emptyset$ were like NP-e, then ECP (5) would rule out this analysis, since $\emptyset$ would not be properly governed (NP-e lacks a lexical governor).[5]

However, since there is no deletion rule in this analysis, $\emptyset$ need not be empty. I will assume that $\emptyset$ is more like PRO, in that it contains pronominal features. ECP, since it applies only to empty elements, will not rule out $\emptyset$ for the same reason that it does not rule out PRO: these are not considered empty categories. Once $\emptyset$ is considered to be a PRO-type element, the question of whether it is governed arises. I will assume that $\emptyset$, unlike PRO, is not an anaphoric element, and thus, unlike PRO, can be governed and assigned case. (See section on PRO and Government for further discussion). The discussion will now turn to how the arb-rewriting analysis presented earlier can account for the WH-interpretation of <u>that-t</u> structures.

<u>Resumptive pronouns, base generating WH in COMP</u>

I will assume that at least in pro drop languages resumptive pronouns arise when regular pronouns are coindexed to the index of a WH-phrase in COMP which binds no other variable in the sentence. When that WH-phrase is of the NP category, it must bind a variable in argument position in order to get interpreted. It must be possible to generate the WH-phrase directly under COMP, since resumptive pronouns are often found inside islands from which extraction should be impossible. For example, it is possible to associate a WH in COMP to a resumptive pronoun inside a complex NP (31):

31. Aqui estão $[_{NP}$ os livros $[_{S'}$ <u>que</u>$_i$ [João gosta $[_{NP}$ dos autores
$[_{S'}$ que$_j$ $[e_j$ <u>os</u>$_i$ escreveram]]]]]]
'Here are the books <u>which</u>$_i$ João likes $[_{NP}$ the authors $[_{S'}$ that$_j$
$[_S$ e_j <u>them</u>$_i$ (clit) wrote.]]]'

From a reindexing treatment of resumptive pronouns it follows that they should have the same phonetic form as personal pronouns. This fact has no natural explanation in a trace spell-out analysis (we might expect that there, traces would be spelled out as reflexives: the language's bound pronominal forms).

A very rough approximation to a rule creating resumptive pronoun readings in Portuguese might be:

32. resumptive pronoun interpretation

$$[_{COMP} [...WH...]_i]_S[...he_j...] \qquad [_{COMP}[...WH...]_i]_S[...he_i...]$$

(where he stands for the appropriate pronominal form)

The output of this rule must be further restricted. Resumptive pronouns are not usually allowed when the WH-phrase binds a site within the immediate clause.

33. *Quem é que João falou isso dela?
     'Who did João say this about her?'

     *Quem é que João lhe deu o livro?
     'Who did João to him(clit) give the book?'

(NB: é que, literally 'is that', seems to be analogous to the French est-ce que. I will leave it out of the glosses to make the translation less cumbersome.)

Perhaps some reformulation of the domain within which disjoint reference can apply will account for these facts. But this is a separate issue, which will not be pursued here.

That-t structures

Recall the Empty Category Principle (5). ECP will block WH-extraction from embedded subject position in Portuguese. Yet S's such as (34) are perfectly acceptable:

34. O honem $[_{S'}$ que João disse $[_{S'}$ que ___ chegaria a tempo]] foi o último a chegar.
     'The man [that João said [that __ would arrive on time]] was the last one to arrive.'

Recall also that a certain amount of machinery has been presented, which has been independently argued for: $[\emptyset\ VP_{tns}]$ configurations are treated as predicates and may undergo arb-rewriting, and WH-phrases may be generated in COMP. Now, the following structure could be base-generated:

$$[...[_{COMP} WH...]...[_{S'} \emptyset\ VP]]...]$$

In this example, I will assume that there is no gap in the sentence corresponding to the WH-phrase, and also that there are no pronouns which

could be construed as resumptive. At S—structure, ECP will not rule the
sentence out, since ∅ is not an empty category. At PS, [∅ VP] will be
indexed arb. The WH—phrase will not receive an interpretation unless
it is associated with a variable in argument position. Arb-indexed
predicates are subject to arb rewriting rules. These rules identify their
index with that of an NP in the proper configuration. If the rules pick
any NP other than the WH-phrase in the example above, the result will be
ill-formed, since WH will bind no variable. If they pick out the WH-phrase
as the controller NP, the output is:

$$[_{COMP}[WH\ldots]_i]\ldots[_{S'}\ldots[_S \emptyset\ VP_{tns}]_i]$$

By convention, the index of the predicate variable is identified with the
index of the WH-phrase, so WH will eventually be interpreted as the 'subject
of the embedded clause.

　　　　To summarize: the only change made in the theory so far has been to
introduce $[\emptyset\ VP]_S$ as a predicate. Given a predication analysis of null
subject sentences, Perlmutter's original generalization falls out: that
if a language has pro drop, then it also allows 'that-t' sequences
(Perlmutter (1971)).

3.　The analysis outlined in the previous section makes some predictions
which I would now like to explore.

Extractability out of islands: subject-object asymmetry

　　　　An analysis of that-t violations as arb rewriting predicts that it
should be possible to interpret WH-phrases as subjects of sentences
inside structures which are supposed to be islands for extraction, since
arb rewriting does not obey island constraints. In pro drop languages,
then, subject "extraction" will seem unbounded, while object extraction
will be restricted in accordance with the island constraints.

　　　　In Portuguese, when-type indirect questions are islands with respect
to extraction. A WH-phrase in a higher COMP can, however, be interpreted
as the subject of the when-clause (35b).

35.　a.　*$[Que\ livro]_i$ é que Pedro não sabia $[_{S'}$ quando Maria leu $e_i?]$
　　　　　'Which book$_i$ did Pedro not know $[_{S'}$ when Maria read $e_i?]$'

　　　b.　$Quem_i$ é que Pedro não sabia $[_{S'}$ quando $[\emptyset\ havia\ saido]_i]$?
　　　　　'Who$_i$ did Pedro not know $[_{S'}$ when $[\emptyset\ had\ left]_i]$?'

(35b) is derived as follows:

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(base generated)	$[_{COMP}$quem] Pedro não sabia $[_{S'}[_{COMP}][_{S}\emptyset$ saiu quando]]
(move: <u>when</u>)	" " " " $[_{S'}[_{COMP}$quando]$[_{S}\emptyset$ saiu e]]
(PS: arb indexing)	" " " " " $[_{S}\emptyset$ saiu e$]_{arb}$
(LF: arb rewriting)	$[_{COMP}$quem$_i$] " " " " $[_{S}\emptyset$ saiu e$]_i$

A similar asymmetry is noted for Italian in Rizzi (1978). For additional discussion, see section 4.

Not all cases of WH-phrases coindexed to <u>arb</u> are grammatical in Portuguese. For example, interpreting a relative clause pronoun with a predicate which is inside another relative clause is ungrammatical.

36. *O homem $[_{S'}[\underline{que}_i]$ João ainda não leu $[_{NP}$ o livro $[_{S'}[que_j]$
     $[\emptyset$ havia escrito $e_j]_j]_i]]]$ saiu.

     'The man $[[\underline{that}_i]$ João hasn't yet read $[_{NP}$ the book $[_{S'}[that_j]$
     $[\emptyset$ had written $e_j]_j]_i]]]$ Left.'

For the argument to go through, however, it is sufficient that cases such as (35a,b) exist, i.e., cases where construal of WH to a constituent inside an extraction island be possible for subject, but not for object position.[6] The ungrammaticality of (36), I am forced to attribute to independent reasons. Note that one cannot appeal to the nature of relative clause islands themselves for the explanation, since the same "island" allows WH-$\emptyset$ construal when WH is a question word:

37. $[\underline{Que\ autor}]_i$ é que $[_S$ João ainda não leu $[_{NP}$ o livro $[_{S'}$ que$_j$ $[_S\emptyset$
     havia escrito $e_j]_i]]]$?
     '$[\underline{Which\ author}]_i$ didn't João read $[_{NP}$ the book $[_{S'}$ that$_j$ $[\emptyset$ had
     written $e_j]_i]]]$?'

(The above point was noted by Elizabet Engdahl, personal communication.) Compare (37) with the unacceptable (38), which differs from it only in that the embedded object, rather than the subject, has been questioned:

38. *$[\underline{Que\ livro}]_j$ é que João ainda não havia conhecido $[_{NP}$ o autor
     $[_{S'}$ que$_i[_S\emptyset$ havia escrito $\underline{e}_j]_i]]$?
     '$[\underline{Which\ book}_j]$ had João not yet met $[_{NP}$ the author $[_{S'}$ that$_i$ $[_S\emptyset$ had
     written $\underline{e}_j]_i]]]$?'

Since arb rewriting is an unbounded rule, we also expect that subject dependencies can be obtained across any arbitrary number of S's or S̄'s. (38) illustrates this.

39. Que senadores$_i$ é que Maria não sabia [$_{S'}$ quando [$_S$ os investigadores
     [+WH]
     descobriram [$_{S'}$ com quem$_j$ [$_S$Ø haviam falado e$_j$]$_i$]]?
          [+WH]
     'Which senators did Maria not know [$_{S'}$ when the investigators discovered
          +WH
     [$_{S'}$with whom$_j$ [$_S$Ø had spoken e$_j$]$_i$]]?'
          [+WH]

If we were to assume an extraction analysis, the tree structure would be:
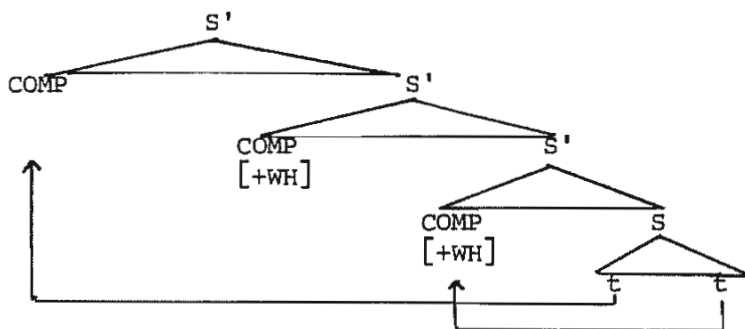
Defining S' as the bounding node for subjacency (as Rizzi 1978 has proposed
for Italian) would not help here, since there are two intervening filled
COMPs in (39). Any extraction to the highest COMP will have to cross two
S' boundaries.

     And again, object extraction out of these structures is ill-formed:

40. *Quem$_i$ é que Pedro não sabia [$_{S'}$ quando João descobriu [$_{S'}$ que
          [+WH]   +WH
     investigadores$_j$ [$_S$ e$_j$ haviam visto e$_i$]]]?
     'Who$_i$ did Pedro not know [$_{S'}$ when João discovered [$_{S'}$ which investigators
                              [+WH]   [+WH]
     [$_S$ e$_j$ had seen e$_i$]]]?

     We have seen that in Portuguese, the constraints on WH extraction
from nonobject NPs pattern very much as in English. An arb rewriting
analysis of the unbounded subject dependencies explains why it is that only
subjects can escape these constraints, and allows us to maintain that sub-
jacency is in fact obeyed in every case of actual extraction.

Comparative deletion and subdeletion

     Portuguese, like English, obeys island conditions. In particular,
it obeys the Complex NP and the WH-island constraints. As we have seen,
the only cases involving a WH-dependency across an island are cases which
can be analyzed as arb-rewriting. For arb-rewriting to apply, the empty
position must be interpretable as the subject of the arb-predicate. It
follows that there should be no extractions of nonsubject constituents
out of islands. In particular, no extractions out of nonsubject left
branches are allowed.

Comparative deletion (CD) and Subdeletion (SD) were first discussed in Bresnan (1972). I am assuming, however, that CD and SD arise as a result of WH-movement, as proposed in Chomsky (1977).

41. CD   The teacher assigned as many books as the students could read ___ .

    SD   John reads as many books as Bill reads $[_{NP}$___ comics].

CD and SD can also take place in embedded clauses (42a), but not if the clause constitutes an island (42b,c).

42. a.[7] The students stole as many books as $[_S$ the librarians claim

        (that) $[_S$ they borrowed ___]]   CD

        (that) $[_S$ they borrowed [___ periodicals]]]   SD

  b. *The students stole as many books as the librarians made

      $[_{NP}$ the claim $[_{S'}$ that they borrowed ___]]   CD

      $[_{NP}$ the claim $[_{S'}$ that they borrowed [___ periodicals]]] SD

  c. *The students stole as many books as the librarians couldn't remember

      $[_{S'}$ when they borrowed ___]   CD

      $[_{S'}$ when they borrowed [___ periodicals]]   SD

In Portuguese, arb-rewriting should be able to apply to clauses within those islands, so long as the clause is a predicate of the form $[\emptyset\ VP_{tns}]$. The prediction is that CD should be acceptable within islands if the null site is interpreted as the subject, and not anywhere else. SD should never be possible in those configurations, since neither $[_S [\_N'] VP]$, nor $[_S NP V [\_N']]$ are possible predicates.

The evidence is not as clear-cut as one would like. All the crucial sentences seem awkward, perhaps because of the complexity of the construc- tions. There seems to be a contrast, however, between sentences with null subjects, which are relatively acceptable, and sentences with deleted objects and subdeletion, which are unquestionably bad. The following sentences show judgements for when CD and SD apply inside complex NPs.

43. a. CD_{subj} ? Quase tantas pessoas haviam morrido quanto João
                      nos havia dado $[_{NP}$ notícias que $[_S \emptyset$ haviam

                      sobrevivido]].
                      'Almost as many people had died as João had given us
                      $[_{NP}$ the news that $[_S \emptyset$ had survived]].'

b. CD$_{obj}$ *Tantas pessoas haviam morrido quanto João nos havia dado [$_{NP}$ as notícias que [$_S$ os guardas matariam___]]

'As many people had died as João had given us [$_{NP}$ the news that [$_S$ the guards would kill___]]

c. SD$_{subj}$ *Quase tantos guardas haviam morrido quanto João nos havia dado [$_{NP}$ notícias que [$_S$[$_{NP}$ ___ guerrilheiros haviam sobrevivido]]

'Almost as many guards had died as João had given us [$_{NP}$ the news that [$_S$[$_{NP}$___ guerrilas had survived]].'

d. SD$_{obj}$ *Quase tantos guardas haviam morrido quanto João nos havia dado [$_{NP}$ as notícias que [$_S$ o exército havia matado [$_{NP}$___ guerrilheiros]]].

'Almost as many guards had died as João had given us [$_{NP}$ the news that [$_S$ the army had killed [$_{NP}$___ guerillas]]'

Norwegian

At first sight, Norwegian is a problem for this analysis. The language has no pro drop, but allows [som t] sequences, where som is equivalent to the English 'that'. The arb-rewriting analysis presented here says that if a language has that-t sequences, then these are either ruled out by ECP, or obtained via arb rewriting a tensed S predicate to the WH-phrase. A language which has no subject deletion gives one no reason to assume that it should have tensed S predicates. However, there is reason to believe that that-t sequences are grammatical for completely different reasons. That-t can only arise when there is a 'local' dependency between the trace and either the WH pronoun or the WH trace. (S's from Taraldsen, date unknown)

44. a. Per$_j$ kjenner jeg ingen$_i$ som e$_i$ liker e$_j$.

'Peter, know I no one$_i$ that e$_i$ likes e$_j$.'

b. Per$_j$ lurer jeg på hvem$_i$ som e$_i$ liker e$_j$.

'Peter$_j$, wonder I who$_i$ that e$_i$ likes e$_j$.'

Long distance dependencies, on the other hand, are ungrammatical with som.

45. a. Per$_j$ kjennen jeg ingen$_i$ (*som) e$_j$ liker e$_i$.

'Peter$_j$, know I no one$_i$ (*that) e$_j$ likes e$_i$.'

b. Per$_j$ lurer jeg på hvem$_i$ (*som) e$_j$ liker e$_i$.

'Peter$_j$, wonder I who$_i$ (*that) e$_j$ likes e$_i$.'

Taraldsen (1977) analyzes Norwegian as having two COMP positions:

```
                        S'
                      /    \
                  COMP      S
                   |       /  \
                   |    COMP   NP
                   |     |     |
cf. (41)  ⎡   hvem_i   som ⎤  e_i
          ⎢                ⎥
cf. (42)  ⎣   hvem_j   e_i ⎦
```
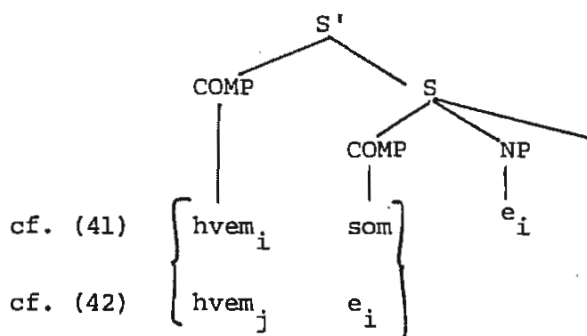
If this is the correct structure, then both $[_{COMP} e_i]$ and $[_{COMP} hvem_i]$ are in a position to properly govern the NP trace, and ECP will not rule out either of them. The fact that Norwegian has no SD is not a problem for this analysis. 'som' cannot be present in (42a, b) because its presence would mean that there is no slot for the WH trace in the second COMP.

4. Remaining issues and speculations (RIS)

PRO and Government

In the Pisa framework, PRO cannot be governed because it is a pronominal anaphor. The binding conditions require that pronominals (pronouns such as he, they, us, et.c) be free in their minimal governing category. In other words, within the lowest NP or S which dominates them, they cannot be coindexed with a c-commanding NP-argument. Anaphors, on the other hand, must be bound in their minimal governing category. Since the binding conditions require that PRO be both bound and free within its minimal governing category (m.g.c.), the only places where PRO can surface without violating the binding conditions are configurations where it has no governing categories. This is possible only when PRO is the subject of a tenseless sentence. If we take tense (or AG) to be the governor and case assigner of the subject NP in tensed sentences, then Ø has a m.g.c. and is assigned nominative case. If Ø, like PRO, is also a pronominal anaphor, then the binding condition for anaphors is violated.

There are at least two possible ways of getting around this objection. One fits straightforwardly in the present framework; the other requires very different assumptions about the grammar and the interpretation, so I will merely discuss it.

First we note that the stipulation of PRO as a pronominal anaphor does not follow directly from the characterization of PRO as a non-empty null element--a NP with pronominal features and no phonological matrix. There are pronouns which are not anaphors, and there are anaphors which are phonologically realized (reflexives, etc.) A minimal change which could be made within this framework would be to stipulate that Ø has pronominal features, but is not an anaphor. This means that it can be both governed and assigned case, and that it must be free in its minimal governing category. It means, in effect, that it should act like other pronouns with respect to disjoint reference and crossover. Since it is assigned case, it can also be interpreted as a variable bound to a WH-operator (cf. discussion on Extended Case Filter).

If $\emptyset$ is like other pronouns, we might expect it to have the distribution of other pronouns; for instance, why not $[V \; \emptyset]_{VP}$, or $[P \; \emptyset]_{PP}$? An answer might be: because an object $\emptyset$ does not stand in the 'subject' relation to the constituent which contains it; thus the language will not treat that constituent as a predicate. This leads us back further to the question of what kinds of things can be predicates, and what kinds of things can be their subjects. I have no ready answer for this question. Intuitively, there seems to be a notion of "aboutness" involved. A VP is "about" a subject NP, a PP can be "about" a NP, but a sentence with the object of a PP missing is not "about" that object (in non WH cases).

Another possible alternative is to recast the analysis by assuming that $PRED_{arb}$ is interpreted as $\lambda x[PRED'(x)]$, i.e. that the predicate variable is built into the interpretation of the predicate. Then it is no longer necessary to have in the tree structure a NP node corresponding to the predicate variable. The base rule for S in Pro drop languages contains the optional expansion $S \rightarrow AG \; VP$, which is interpreted as a predicate. Thus $S_{PRED} \Longrightarrow S_{arb} \Longrightarrow \lambda x[PRED'(x)]$, etc.

Arb rewriting coindexes arb to the index of a NP--this is equivalent to supplying an appropriate argument to $\lambda x[PRED'(x)]$. The result of arb rewriting will be either a nonanaphoric pronominal, or a variable bound to a WH operator $(WH_i[...[\lambda x[...x...]](x_i)])$, depending on the nature of the NP which supplies the argument. (But see Engdahl (1980) for discussion of sentences where this would not be a correct translation for WH expressions.) If arb rewriting does not apply, we might want another rule to supply some discourse constant as argument to the predicate. In having no NP node realized in the tree structure, subjectless tensed sentences are now quite parallel in structure to other PRED's (AP, PP,(cf. (12))), which contains no structural $[_{NP}PRO]$. In this connection, it is worth noting, however, the results reported in Frazier and Clifton (this volume) which indicate that subjects treat the PRO position in infinitival complements in English as another NP gap. This seems to argue for the $[_S \; NP \; to \; VP]$ analysis for predicates of this sort.

Subject-object asummetry: $\emptyset$-resumptive pronouns?

Rizzi (1978) notes that in Italian, WH-phrases in COMP can be construed with empty subject positions even in structures where they cannot be construed with gaps in object position. (46a,b) illustrate examples of object and subject extractions out of relative clauses. The tree structures that follow show the dependency relations that hold between WH-phrases and empty positions.

46. a. object extraction (Rizzi (21b))

*il tu libro, che Gianni non si ricorda più chi ha detto che ha lasciato sul tavalo, è ormai introvable.

'Your book, $[_{S'3}$ that Gianni doesn't remember anymore $[_{S'2}$ to whom he said $[_{S'1}$ that he left ___ on the table]]], isn't to be found anymore.'

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b. <u>subject dependency</u> (Rizzi (22b))

?Il tuo libro, <u>che</u> Gianni non si ricorda più a chi ha detto
 che è rimasto a casa mia, è ormai introvable.

'Your book,$[_{S'3}$ <u>that</u> Gianni doesn't remember $[_{S'2}$ to whom he
said $[_{S'1}$ that __ had been left in my house,]]] isn't to be
found anymore.'

(46a')   ✱ S'3(RC)   (46b')   S'3
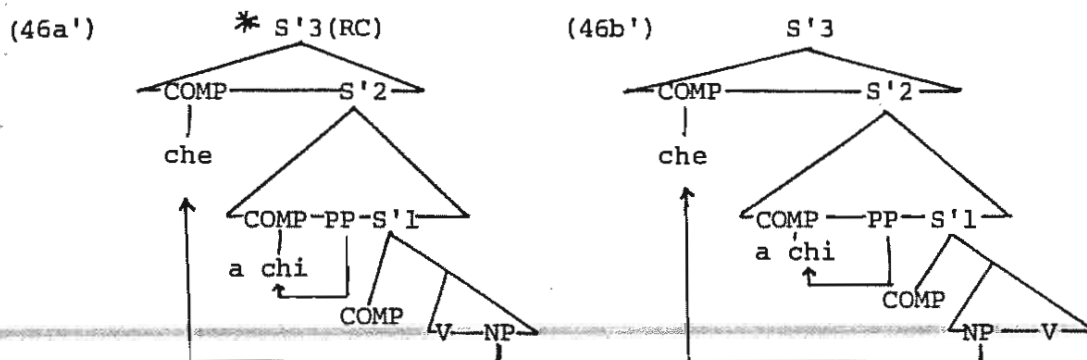
Rizzi suggests that (46b) is acceptable because it is the result of
the interaction of two independently existing processes: resumptive
pronoun strategy and subject deletion (or alternatively, the phonologically
null realization of unstressed subject pronouns). As is the case with
many languages, Italian allows WH-phrases to be construed with resumptive
pronouns embedded in structures from which WH extraction cannot take
place. Rizzi marks these examples '%' for 'substandard stylistic level."

47. a. %Questo incarico, <u>che</u> non sapevo la novità che <u>lo</u> avrebbero
         affidato a te,...

         'This task, <u>that</u> I didn't know the news that they would
         entrust <u>it</u>(clit.) to you...'

     b. %Tuo fratello, <u>che</u> temo la possibilità che <u>gli</u> abbiano
         raccontato tutto,...

         'Your brother, <u>that</u> I am afraid of the possibility that they
         have told everything <u>to-him</u>(clit)...'

In Rizzi's account, a dependency between WH-phrase in COMP and an empty
subject position is captured by first generating a resumptive pronoun,
and then having it show up as null at the surface. Two principles which
he proposes guarantee this: in Italian, (i) resumptive pronouns must be
unstressed, and (ii) unstressed subject pronouns must be phonetically
realized as ∅. The first principle seems uncontroversial.

    The second cannot hold for Portuguese. There we find that unstressed
subject pronouns can be realized as either ∅ or as a definite pronoun.
One ready source of examples are left dislocations and topic-comment

structures such as those described by Pontes (1980). In these structures, both subject pronouns and Ø may appear:

49. a. Êsse João, eu dei o dinheiro pra ele, e <u>ele</u>/Ø sumiu com o troco.

     'This João! I gave him the money and <u>he</u>/Ø disappeared with the change.'

     b. Os livros, acho que <u>eles</u>/Ø estão em cima da mesa.
         'The books, (I) think that <u>they</u>/Ø on top of the table.'

There is no reason to assume that these pronominal copies are themselves stressed (although the topic constituent, which serves as its antecedent, may be). And the presence or absence of the subject pronouns does not change the interpretation of the above sentences in any way.

If realization of unstressed subject pronouns as Ø is optional in Portuguese, and if the subject-object asymmetry in Portuguese is a result of the application of the (unbounded) resumptive pronoun strategy, then we expect to find null resumptive pronouns (Ø-rps) and 'regular' resumptive pronouns (rps) in free alternation. This expectation is contradicted in two ways: (i) there are configurations where <u>rps</u> are allowed, but <u>Ø</u> is not, and (ii) there are configurations (involving <u>that-t</u> violations) which allow Ø, but not <u>rps</u>.

One of the configurations where Ø is not allowed involves relative pronouns cointerpreted with positions inside a lower relative clause, as in (36)(repeated here).

36. *O homem $[_{S'}$ $[\underline{que}_i]$ João ainda não leu $[_{NP}$ o livro $[_{S'}$ $[que_k]$ $[\emptyset$ havia escrito $e_k]_i]]]$ saiu.

     'The man $[[\underline{that}_i$ João hasn't yet read $[_{NP}$ the book $[_{S'}$ $that_k$ $[\emptyset$ had written $e_k]_i]]]$ left.'

The presence of a resumptive pronoun makes the sentence more acceptable.

49. % O homem $[[\underline{que}_i]$ João ainda não leu $[_{NP}$ o livro $[[que_k]$ $[\underline{ele}_i$ havia escrito $e_k]]]]$ saiu.

The second expectation is also contradicted. If the WH-phrase is too "close" to the NP position with which it should be interpreted, resumptive pronouns are not allowed in subject position, but Ø is.

50. a. $[$Qual dos guerrilheiros$]_i$ é que João acha que $[\emptyset$ havia escapado vivo fora do país$]_i$?

b.　*[Qual dos guerrilheiros]$_i$ é que João acha que [ele$_i$ havia escapado vivo fora do pais]?

'Which of the guerrillas$_i$ did João think that Ø/*he$_i$ had escaped out of the country alive?'

Note that the well-formed (50a) is a that-t configuration. I.e., extraction from the preverbal subject position would violate ECP. This rules out an extraction analysis for (50). Extraction is ruled out for (36) as well: movement out of a complex NP violates subjacency. A unitary resumptive pronoun analysis (one which allows both Ø-rps and rps) will not work either, since in Portuguese Ø and phonetically realized unstressed subject pronouns are in free alternation. Given structures such as (50), one might want to explain the lack of Ø/rp alternation by appealing to a general principle such as Avoid Pronoun. But the Avoid Pronoun Principle cannot apply in this structure: for we do find Ø/pronoun alternation in the left dislocated examples in (48), and in cases which do not involve WH-structures (51).

51.　João disse a Gloria que Ø/ele ia chegar tarde.
'João said to Gloria that Ø/he would come late.'

It seems reasonable to conclude, then, that the subject-object asymmetry facts cannot be accounted for by simply postulating a Ø resumptive pronoun. And although I do not have a worked out explanation for either the constraints on the construal of WH-phrases with Ø, or for the conditions on resumptive pronouns, the different distribution of Ø and rps indicate that they are best seen as two distinct processes. This conclusion is consistent with the analysis of null subject sentences presented in this paper.

5.　Conclusion

The model assumed by the analysis presented here is as shown below:

```
                    base
                     |  move α (and index)
                     |
              S-structure   case assignment, ECP'

                       OC, arb assignment

                        PS
                          \   QR, WH interpretation, anaphora,
                           \   arb rewriting
        PR                 LF  opacity, Extended Case Filter
```
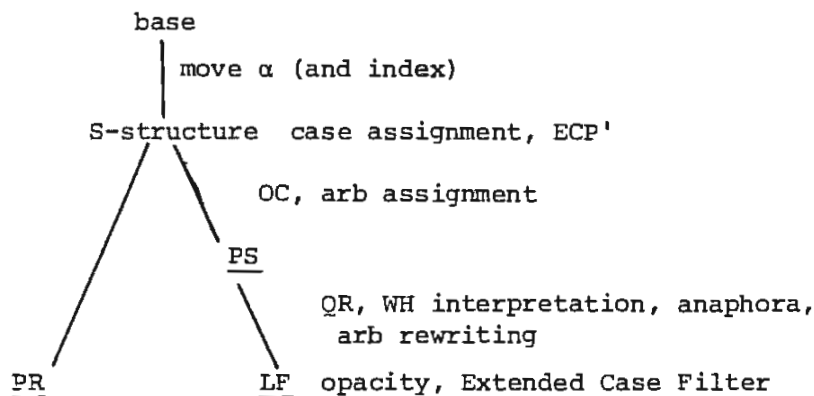
In this paper I have attempted to show how an analysis of null subject sentences as cases of nonobligatory control would work. Coindexation of subject trace with AG, and the further NP options of [+ N], such as

proposed by Taraldsen and Rizzi, are unnecessary. Unnecessary also is the index changing convention for postposed subjects. All of these were machinery which was developed solely to deal with Pro drop phenomena in the first place, so their loss will not create too many undesirable repercussions for the theory.

In the present proposal, both the acceptability of ∅ and that-t sequences are explained by an independently needed Predication theory, once one accepts that both tensed and tenseless clauses without overt sub-jects can be analyzed as predicates in pro drop languages. Accepting this proposal also allows us to explain the asymmetric violations of subjacency in Portuguese, and to explain those without having to relax or change the statement of island conditions (this is not to imply that these conditions will not have to be changed in any case, to deal with the extraction possibilities of other languages: Italian and Swedish, for example.)

NOTES

[1] According to Rizzi (1980 (draft) and personal communication). The analysis has undergone and is still undergoing revision, so not all remarks in this section may be relevant to his final analysis.

[2] Other dialects of Portuguese may be freer in this respect. An informant who speaks the Azores dialect finds the following sentences good:

i.	Chegou o João	'Came João.'
ii.	Chegou ontem o João	'Came yesterday João.'
iii.	Falou com a Maria o João	'Spoke with Maria João.'

But the following were not accepted:

iv.	*Queremos que durma o João.	'(we) want that João slept.'
v.	*Ele disse que havia trazido os caixotes o João.	'He said that João had brought the crates.'
vi.	*Ele disse que havia pagado pelos caixotes o João.	'He said that João had paid for the crates.'

The question raised by the difference in the two dialects is: how freely must the postposing rule apply before it ceases to count as stylistic and begins to be considered an application of move α? For one could constrain the output of a "free" postposing rule with various filters and conditions on the left side of the grammar so as to allow exactly the cases that will be accepted by speakers, but this would hardly be illuminating Should it be decided that the Azores dialect has free (nonstylistic postposing), then Subject postposing can be extended to account for that-t violations in that dialect, but not for the same violations in the more restrictive, non-postposing dialects.

[3]The status of the a preceding the NP is unclear. It is used as
an indirect object marker: o darei a Maria, '(I) will give it to Maria.'
It is also used with what seem to be direct objects. Respeitar, 'to
respect,' takes a+NP objects, and direct object clitics. Eg., respeito
a ele, '(I) respect him,' and o respeito, the same sentence, but with the
object in clitic form. Note also that a contracts with the definite article:
a + os ⟹ aos. It may be that a is cliticized to the article, rather than
sister-adjoined to NP. This allows a+NP to still c-command the predicate
S at Predicate Structure.

[4]A problem for the claim that $[\emptyset \text{ VP}_{tns}]$ is a predicate is the fact
that the same verb may require obligatory control of the tenseless [PRO to VP]
predicates, while not requiring it of tensed predicates. For example,
with persuadir, 'to persuade,' the infinitival complement must be con-
trolled by the direct object. This is easy to establish, since in Por-
tuguese the tenseless verb may agree with the 'subject' in this structure.
(ib), where the predicate requires a masculine plural controller, is
ungrammatical.

(i)a. João persuadiu a Maria$_i$ a [PRO ser examinada]$_i$.
       'João persuaded Maria [to be$_{sing}$ examined$_{3sg.f.}$].'

   b. *João persuadiu a Maria a [PRO serem examinados].
       'João persuaded Maria [PRO to be$_{3ppl}$ examined$_{3ppl.m.}$].'

The tensed complement, on the other hand, need not be controlled, and can
alternate freely with lexical subjects. In this respect, persuadir
behaves very much like the English 'to persuade.'

(ii) João persuadiu a Maria que [eles/∅ deviam ser examinados].
      'João persuaded Maria that [(they) should$_{3ppl.m}$ be examined$_{3ppl.m.}$].'

One expects this distinction in English, where tensed S's are not predicates
and cannot undergo OC. Since they are predicates in Portuguese, the
present analysis cannot explain this distinction.

[5]ECP (5) would still rule out an arb rewriting analysis if we assume
that PRO is an empty element. Under this assumption, ECP could be restated,
to apply at S-structure, and to look only at empty NPs which have an index
at that time.

(i) ECP' $[_{NP_i}$ e] must be properly governed (at S-structure)

ECP' as revised will affect only traces left by move α, which is the only
process which will have assigned indices to constituents by S-structure.
PRO and ∅, which I assume to be base generated, will be exempt from this

principle, while traces in traditional that-t environments will be ruled
out as before, both in English and in Portuguese. Note that given this
reformulation, it is no longer necessary to distinguish between PRO and
trace, i.e., null elements with semantic features as opposed to null
elements which are really empty.

ECP' also predicts that there should be no asymmetry in the possible
scope assignments to quantifiers originating in subject and object positions
At S-structure, the quantified NP is still lexical, so ECP' will not apply
to it. Quantifier raising rules (cf. May 1977) will apply later, but
ECP' will not affect their scopes. In English, for instance, many
quantifiers can bind both subject and object positions in embedded sen-
tences.

(ii)   a.   Everyone hoped that two candidates would be selected.

narrow scope $\forall e_i$ [e_i hoped that (two candidates$_j$) [e_j would be...]]

wide scope (two candidates$_j$) $\forall e_i$ [e_i hoped that [e_j would be...]]

   b.   Everyone hoped that the jury would select two candidates.

narrow scope $\forall e_i$ [e_i hoped that (two cand.$_j$) [the jury would sel. e_j]]

wide scope (two candidates$_j$) $\forall e_i$ [e_i hoped that [the jury would sel. ϵ

Stated as a condition on logical form, ECP produces that-t type phenomen
on variables in subject position. In order for a variable in that position
to be properly bound, its operator must locally c-command it, as in (iiia).

(iii)   a.   b.
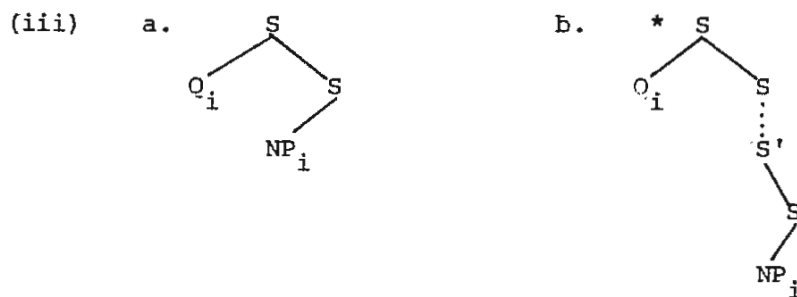
ECP in its original formulation rules out (iiib) because NP$_i$ is not properly
governed in its minimal governing category. A variable in object position,
on the other hand, will not be subject to the same kind of scope restric-
tions, since it is always properly governed by the verb.

That-t restrictions still seem to hold for cases when a quantifier is
associated with an overt surface marker (eg, Italian non...nessuno, 'nobody')
(see Kayne 1979 for French, and Rizzi 1980 for Italian). But quantifiers
without overt scope markers are not so restricted. Cf. (iv) corresponding
to (iia):

(iv)   Todos esperavam que dois candidatos seriam escolhidos.

   (two candidates$_j$) $\forall e_i$ [e_i hoped that [e_j...]]

It seems, then, that in the general case, ECP' makes the correct predic-
tions about quantifier scopes. Williams (personal communication) has pro-

posed an alternative analysis for the French and Italian cases which involves binding rather than ECP and proper government.

[6]Topicalization is an exception. Both subjects and objects can be topicalized out of WH-islands. Rivero (1978) notes that in Spanish, WH movement is subject to more restrictions than Topicalization. In particular, Topicalization observes neither WH island nor Superiority. She concludes that Topicalization in Spanish cannot involve WH movement. The facts are the same for Portuguese, and I think that Rivero's arguments carry over unchanged.

[7]Some speakers do not accept (39a) unless _that_ has been deleted. This does not affect the argument presented in this section.

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