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The Characterization of Clause-types:
 Scope, Obviation and Independent Tense
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1. Introduction*

Recent work in Government-Binding has suggested that different clause-types (indicative, infinitival, etc.) can be characterized by the features [+Tense, +AGR(eement)], where a tensed clause contains [+Tns, +AGR], and an infinitival clause [-Tns, -AGR]. The features chosen, in turn, are held to interact with principles of GB in varying ways. For example, the Binding theory proposed in Chomsky (1981) specifies the domain of an accessible SUBJECT as the domain in which anaphors must be bound and pronouns must be free. [+AGR] and NP constitute potential SUBJECTs; therefore it is predicted that possibilities for realization/interpretation of a subject NP will differ according to whether or not agreement is present. For example, in a tensed clause, the pronoun he/him can refer to the subject of the main clause, while in an infinitival clause such reference is not possible:

- 1a. John_i believed that he_{i/j} had won.
 1b. John_i believed him_{*i/j} to have won.

Picallo (1983¹, 1984) and Meireles and Raposo (1983) (henceforth M&R) provide evidence from Catalan and Portuguese respectively which shows that the Binding theory does not, however, make the correct predictions for subject pronoun reference in subjunctive and inflected infinitive clauses, both of which exhibit agreement morphology. In the sections which follow, I will first present (section 2) the data and analyses suggested by Picallo to account for subject pronoun reference, quantifier scope and sequence-of-tense phenomena in Catalan subjunctive clauses. In section 3, Meireles and Raposo's claims for Portuguese will be discussed. In section 4, data from French and further data from Portuguese will be provided which show that neither Picallo's nor Meireles and Raposo's analyses correctly account for the interpretation of subject pronouns, scope of quantifiers and sequence-of-tense phenomena in these two languages. It will be concluded that in and of themselves, neither [+Tense] (or Meireles and Raposo's corresponding [+Independent Tense]), nor [+AGR], nor a combination thereof, is sufficient to distinguish between moods, or determine the referential properties of subject pronouns; rather, these are dependent on the lexical properties of the matrix verb.

2. Catalan

Working in Catalan, Picallo (1983) addresses three areas in which subjunctive clauses are distinguished from indicative. She points out that, as in English (cf. (1a)), a subject pronoun in an indicative complement is free in reference to the matrix subject; that is, it can co-refer with or fail to co-refer with the matrix subject:

2. En Joan_i creu que pro_{i/j} hi va.
 John believes that (he)_{i/j} there goes-IND
 'John believes that he's going there.'

However, in Catalan subjunctive clauses a subject pronoun in an embedded subjunctive clause is obligatorily disjoint in reference to the matrix subject; i.e., it must refer to someone/thing other than the matrix subject:

3. En Joan_i vol que pro_{*i/j} vingui.
 John wants that (he)_{i/j} come-SBJN
 'John wants that he come.' (P's (1))

Second, Picallo (1984) argues against Rizzi (1982)'s proposal in which he maintains that in Null-Subject languages like Spanish, Italian, Portuguese and Catalan, subject position is not properly governed,² contrary to other proposals, and that extraction of an NP from this position is restricted by the Empty Category Principle (ECP).² Although it is possible to extract a wh-phrase from this position in these languages, Rizzi suggests that this is due to the existence in these languages of free inversion (movement of the subject to post-verbal position). The structure of (4a) would thus be (4c), not (4b):

- 4a. Chi credi che verrà?
 who think-PR-2S that come-FUT-3S
 'Who do you think that will come?' (R's (84))
 4b. [_Schi_i [_Scredi [_Sche [_St_i verrà]]]]
 4c. [_Schi_i [_Scredi [_Sche [_St_i [_{VP} [VP verrà] t_i]]]]]]

A subject wh-phrase is thus not extracted from pre-verbal position, where its trace would not be properly governed, but from post-verbal position, where it has been moved, and where its trace is properly governed by V. The pre-verbal trace in (4c) is pro_i: it is not properly governed and therefore cannot be trace, but it is governed, and as such can't be PRO. In (4b), however, t_i cannot be pro_i, since if it were, chi_i would have no variable to bind, and the sentence would be ruled out by virtue of containing a vacuous operator. Therefore, pre-verbal t_i in (4b) is a trace, subject to the ECP, while that in (4c) is pro, and not subject to the ECP.

Rizzi cites as evidence for this analysis the movement of quantifiers in LF.³ At this level, free inversion is not

available, and it is assumed that quantifiers/negatives are raised to COMP to be interpreted. If raised to an embedded COMP, the quantifier/negative will have narrow scope (i.e., scope over the embedded clause only):

- 5a. S-structure: I require that you not arrest anyone.
- 5b. LF: I require that [there is no x such that
[you arrest x]]

If raised to the matrix COMP, however, the quantifier/negative will have wide scope (scope over the entire sentence):

- 6a. S-structure: I do not require that you arrest anyone.
- 6b. LF: There is no x such that [I require that
[you arrest x]]

Thus, a quantifier in subject position would leave a trace in this position when raised at LF, which must be properly governed. If the quantifier is raised to the matrix COMP, the trace would not be properly governed since it would lack a local antecedent; thus it is predicted that only narrow scope interpretation is possible for quantifiers in embedded subject position. Rizzi asserts that this is true for Italian; (7a) can be interpreted only as (7b), a totally irrelevant meaning where non and nessuno are interpreted independently of each other. A narrow scope reading (7c) is out due to the presence in the matrix clause of the scope marker non, and a wide scope reading (7d) is unacceptable:

- 7a. Non pretendo che nessuno ti arresti.
not require-PR-1S that no one you arrest-PR-3S
- 7b. [It is not the case that [I require that
[there be no x such that [x arrest you]]]]
- 7c. *[I require that [there is no x such that
[x arrest you]]]
- 7d. *[There is no x such that [I require that
[x arrest you]]]

In Catalan, however, Picallo notes that Rizzi's analysis does not uniformly obtain. While it is true that in subjunctive clauses, only narrow scope interpretation of a quantifier in subject position is possible, in indicative clauses, a quantifier in subject position may have either narrow or wide scope interpretation:

- 8a. Tots els estudiants senten que alguns examens
all the students regret that some exams
siguin difícils.
are-SBJN difficult
'All students regret that some exams are difficult.'
- 8b. *For some x, x an exam [all students regret that
[x are difficult]]

- 8c. All students regret that [for some x, x an exam
[x are difficult]]
- 9a. Tots els estudiants saben que alguns examens
all the students know that some exams
són difícils.
are-IND difficult
'All students know that some exams are difficult.'
- 9b. For some x, x an exam [all students know that
[x are difficult]]
- 9c. All students know that [for some x, x an exam
[x are difficult]]

A narrow scope interpretation (8c, 9c) would be one where, for each student, the exams in question are different, whereas in a wide scope interpretation (8b, 9b), the exams would be the same for each student. As seen above, an indicative clause allows both interpretations, while only narrow scope reading is possible in the subjunctive clause.

Next, Picallo notes that subjunctive and indicative clauses differ in the range of tenses allowed in the embedded clause. An embedded indicative clause may have a verb in virtually any tense:

10. Sap que $\left\{ \begin{array}{l} \text{porta (PRS)} \\ \text{portava (IMP)} \\ \text{portara (FUT)} \\ \text{ha portat (PST)} \end{array} \right\}$ un llibre.
IND
'S/he knows that s/he brings/used to bring/
will bring/brought a book.' (P's (42))

However, the tense of a verb in subjunctive mood is dependent on the tense of the matrix verb; the verbs must match in tense, present-present, past-past:

11. Desitja que $\left\{ \begin{array}{l} \text{porti} \\ \text{*portés} \end{array} \right\}$ un llibre.
desire-PRS-3S that bring- $\left\{ \begin{array}{l} \text{PRS} \\ \text{*PST} \end{array} \right\}$ -3S-SBJN a book
'S/he desires that s/he bring a book.'

In order to account for this sequence-of-tense phenomenon, Picallo proposes that subjunctive clauses are characterized by [-Tns, +AGR], and must therefore receive their time-frame reference from the matrix verb. This characterization distinguishes subjunctive clauses from indicative, which would be [+Tns, +AGR], and from infinitival clauses, which would be [-Tns, -AGR]. Picallo suggests furthermore that the difference in subject pronoun reference between indicative and subjunctive clauses (cf. (2),(3)) can also be accounted for via the [+Tns]/[-Tns] distinction if it is assumed that the binding domain for pronouns is defined by [+Tns], rather than [+AGR].⁵ Thus, a

Thus, IT defines the domain for pronoun binding, accounts for sequence-of-tense effects, and distinguishes between indicative and subjunctive moods. Since it is the matrix verb which specifies the presence/absence of IT in its complement, it follows that pronoun reference and sequence-of-tense effects will be the same for all the sentential complements of a verb, be they finite or infinitival. Moreover, six types of sentential complements are predicted to exist: finite clauses with [+IT] (indicative), finite clauses with [-IT] (subjunctive), inflected infinitives (PI) with [+IT] (cf. (13b)), inflected infinitives with [-IT] (cf. (14b)), uninflected infinitives with [+IT], and uninflected infinitives with [-IT].

To summarize Picallo's and Meireles and Raposo's analyses, both predict that subject pronoun reference and independent tense reference are linked: the subject pronoun of a clause without independent tense reference will obligatorily be disjoint in reference to the matrix subject, while that of a clause with independent tense will be free. Picallo accounts for this by postulating [+Tns] as the feature which defines the binding domain of pronouns and to which a clause with [-Tns] must go to receive tense specification. Since it is the [-Tns] characterization of subjunctive clauses which accounts for subject pronoun reference and the lack of independent tense in these clauses, Picallo's analysis predicts that other clauses characterized by [-Tns], such as infinitives, should parallel subjunctive clauses with respect to pronoun reference and IT. Indeed, Picallo suggests that the Portuguese PI is a stylistic variant of the subjunctive, characterized by [-Tns, +AGR], and identical to the subjunctive in the relevant respects. Finally, Picallo's analysis predicts that only narrow scope interpretation is possible of quantifiers in subject position of subjunctive clauses, since she takes [+Tns], but not [-Tns], to be a proper governor.

Similarly, M&R account for the link between pronoun reference and independent tense reference by means of a tense-operator, generated in COMP, termed IT. The lack of IT ([-IT]) in a subordinate clause results in that clause's having no independent tense reference, and in the transparency of subject position for pronoun binding. They do not, however, link Portuguese subjunctive and PI. Rather, they suggest that a verb may sub-categorize to allow: 1) a finite (indicative or subjunctive), PI or uninflected infinitive clause, and 2) presence or absence of IT in the COMP of the sentential complement. It follows that the pronoun reference and IT facts will be identical for all types of clausal complements of any given verb.

4. Further Data

Given Picallo's analysis for Catalan, it would be reasonable to assume that it could extend to account for phenomena in analogous clause-types in closely related languages such as Portuguese and

French. Similarly, it would not be unreasonable to expect Meireles and Raposo's analysis for Portuguese to account for corresponding phenomena in French. The predictions made by the two proposals sketched above do not, however, hold when further data from Portuguese are taken into consideration, nor do they extend to analogous constructions in French. A preliminary examination of the characteristics of the subject position in subjunctive and infinitival clauses in these languages shows first of all, contrary to Picallo's analysis, that both wide (17d) and narrow (17e) scope interpretation of quantifiers are possible out of the subject position of Portuguese subjunctives (17a), PIs (17b) and French subjunctives (17c):

- 17a. Todos os estudantes lamentam que alguns exames
all the students regret that some exams
sejam difíceis.
are-SBJN difficult
- 17b. Todos os estudantes lamentam alguns exames
all the students regret some exams
serem difíceis.
to-be-3P difficult
- 17c. Tous les étudiants regrettent que quelques examens
all the students regret that some exams
soient difficiles.
are-SBJN difficult
'All students regret that some exams are difficult.'
- 17d. For some x, x an exam [all students regret that
[x are difficult]]
- 17e. All students regret that [for some x, x an exam
[x are difficult]]

Second, it is not the case, as Picallo suggests, that all Portuguese PIs correspond to subjunctive clauses; for some verbs allowing a PI, a subjunctive clause is ungrammatical, while an indicative clause is grammatical. Compare the following:

- 18a. Os meninos dizem estarem cansados.
the boys say-PRS to-be-3P tired
- 18b. *Os meninos dizem que estejam cansados.
that (they) are-SBJN
- 18c. Os meninos dizem que estão cansados.
are-IND
'The boys say they are tired.'

Nor is it the case, as Meireles and Raposo suggest, that all clausal complements of a verb are identical in behavior with respect to pronoun reference and IT. Consider (19a) and (19b), in which pronoun reference and IT in a subjunctive complement of estar contente differ from those in the PI complement of the same predicate:

- 19a. Meus amigos_i estão contentes que pro*_{i/j}
 my friends_i are-PRS glad that they*_{i/j}
 {venham }.
 { *viessem }
 come-PRS-SBJN/*come-PST-SBJN
 'My friends are glad they're coming/they came.'
- 19b. Meus amigos_i estão contentes por pro_{i/j}
 COMP they
 {virem }
 {terem vindo }.
 to-come-3P/to-have-come-3P
 'My friends are glad they're coming/they came.'

Third, it is not the case that [-Tns]/[-IT] characterizing a subordinate clause entails that a subject pronoun in that clause must be disjoint in reference to the matrix subject. There exists a group of verbs in both Portuguese (albeit a minority) and French (a majority) whose subjunctive (and, for Portuguese, PI) complements contain a subject pronoun which is totally free in reference. Consider (20) and (21):

- 20a. Meus pais_i duvidam que pro_{i/j} cheguem
 my parents_i doubt that they_{i/j} arrive-SBJN
 na hora.
 on time
- 20b. Meus pais_i duvidam pro_{i/j} chegarem na hora.
 to-arrive-3P
 'My parents doubt they'll arrive on time.'
21. Paul_i est étonné qu'il_{i/j} ne dorme pas bien.
 Paul_i is amazed that he_{i/j} ptc sleep-SBJN not well
 'Paul is amazed that he's not sleeping well.'

Finally, contrary to Picallo's and Meireles and Raposo's proposals, independent tense reference is possible for a number of subjunctive and infinitival complements in both languages, as seen in (22), (23):

- 22a. Os meninos negam que {cheguem } atrasados.
 {chegassem }
 the boys deny-PRS that (they) arrive-PRS/PST-SBJN late
 'The boys deny that they are arriving/arrived late.'
- 22b. Os meninos negam {fazerem } aquilo.
 {terem feito }
 to-do-3P/to-have-done-3P that
 'The boys deny they're doing/they did that.'
- 23a. Il craint qu'ils ne le fassent maintenant.
 he fear-PRS that they ptc it do-PRS-SBJN now
 'He's afraid that they're doing it now.'
- 23b. Il craint qu'ils ne l'aient fait hier.
 it have-SBJN done yesterday
 'He's afraid they did it yesterday.'

5. Conclusion

In light of the data sketched in section 4, it must be concluded that while [+Tense]/[+IT] (or whatever characterizes indicative mood) does determine independent tense reference and free reference for subject pronouns, [-Tense]/[-IT] (subjunctive and infinitival moods) does not imply a lack of independent tense reference or transparency of the embedded subject position for the binding of pronouns (i.e., disjoint reference assignment). As Picallo and M&R point out, [+AGR] is not sufficient to determine the binding domain for pronouns;⁶ however, neither are [+IT]/[+Tense] sufficient in and of themselves to determine that binding domain. Nor is it possible to account for verbal mood and independent tense reference via [+Tense]/[+IT] alone. Rather, these are all dependent (at least in part) on the lexical properties of the matrix verb. Although it is beyond the scope of this paper to offer a systematic analysis incorporating these observations, they suggest first of all that the characterization of clauses as [+Tense, +AGR] is insufficient and that the lexical properties of the matrix verb must assume a larger role in accounting for mood and independent tense reference. Moreover, the Binding theory will need to be adapted to allow the lexical properties of a matrix verb to play a role in the determination of possible pronoun reference.

NOTES

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(1) Picallo (1983) is, in fact, a rough draft of a section of Picallo's doctoral dissertation, still in preparation. Her comments there should thus be taken as provisional, since she may very well have revised her analysis since the writing of the draft.

(2) The ECP is a principle of government theory in GB which states that a trace must be properly governed. To be governed, it must be c-commanded by a lexical category (N,V,A,P) in the same maximal projection. Proper government, however, limits governors to N,V,A (sometimes [+AGR]) or a local antecedent coindexed with the trace. It is the notion of proper government which is relevant for the ECP. See Chomsky (1981, 1982) for a formal formulation of the ECP.

(3) LF, or Logical Form, is one of the components of grammar at which interpretive rules (such as construal of empty categories, the scope of quantifiers, interpretation of variables, in the case of LF) apply. See Chomsky (1981) for further detail.

(4) In examples (5,6), anyone is taken to be the quantifier which is raised, while not is taken to be a scope marker, overtly marking the clause over which the negative anyone has scope.

(5) Picallo's formulation of binding domain does not totally discard the notion of accessible SUBJECT. She argues, however, that the crucial notions are those of [+Tense] and accessible subject (i.e., [NP,S] or [NP,NP]) chain:

i) α is a governing category for β iff:

I. α is the minimal category domain percolated-governed by [+Tense]ⁱ containing β and a subject chain accessible to β .

II. A maximal [+Tense]ⁱ domain is a governing category for a β lacking an accessible subject.

ii) γ is accessible to β iff β is in the c-command domain of all elements forming a γ -GF chain and the coindexing of β and γ does not violate the i/i condition.

(Picallo 1983:50)

(6) See Huang (1983) for a version of Binding theory where an accessible SUBJECT does not play a role in the binding of pronouns. However, Huang's proposal is still insufficient to account for the problems relevant in this paper.

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