

## ON SUBJECT-EXTRACTION: A CASE-HISTORY\*

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Using the method of conjecture, refutation, and auxiliary hypothesis, the article illustrates the development of (part of) the theory of transformational-generative syntax over the last decade by surveying a single problem area, viz., that of the extraction of Subjects. It concludes with a speculative account of Subject-extraction in Modern Greek.

### 0. Background

0.1. The strategy of this paper is to illustrate the growth of our understanding of syntax, by presenting the history of Subject-extraction as a series of conjectures, refutations, and auxiliary hypotheses. The example is artificial to the extent that the stages of the argument are presented as pseudo-chronological. Yet it shows how, over a period of less than half a decade, our understanding of extraction was substantially extended by the study of a single problem —of course within the framework of the developing theory of Government and Binding— across English, German, Norwegian, French, Italian, Portuguese (including Brazilian Portuguese) and Greek, as also Russian, Japanese and Chinese. It will be equally clear, at least covertly, that the theory gained as much as the problem did, from this mutual interaction.

The primary data at issue is simply the contrast or lack of contrast in grammaticality between the following sentence-types in different languages.

- \*Who do you believe that shot John?
- Who do you believe shot John?
- Who do you believe (that) John shot?

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## 1. The opposed paradigms

1.1. Classical typology makes the wrong predictions wrt subject extraction. Thus Comrie 1981 (cf. the critique in Drachman 1985) predicts that «every language can relativise Subjects», yet confesses to finding «no good explanations why» English relativises an Object but not a Subject, in examples like:

«The girl that you think that I love».  
vs. \*«The girl that you think that loves me».

### 1.2. The TG paradigm

1.2.1. On the one hand, classical Typology takes the correlations extracted from its cross-language data-base of surface constructions and gives these the status of a universal theory of language-variation. On the other, T-G grammar first establishes a theory (viz., a grammar) for each of a number of languages; it is then from a comparison of these single-language grammars that a Universal theory of (core) grammar is derived.

For the rest of this paper, we set aside typological considerations in the 'classical' sense referred to. We shall consider first the pro-drop syndrome in conjunction with Chomsky's 1981 explanation for the asymmetry in Subject-extraction in English.

1.2.2. Rizzi 1977 established the 'pro-drop' syndrome, all of whose symptoms are to be found (e.g.) in Italian, but not in French or English. The syndrome consisted of:

- a) Missing Subjects
- b) Free Subject-Verb inversion in simplex Sentences
- c) 'Long' Subject-movement
- d) Empty Subject Resumptive pronoun in embedded clauses
- e) Apparent violation of the «that-t» Filter

As we shall see, this syndrome later dissolved; for the mutual implications failed to hold up in the face of accumulating data from further languages.

1.2.3. Chomsky 1981 predicts the troublesome Subject-Object asymmetry wrt extraction on the basis of the Empty Category Principle (ECP). Briefly, the extraction site cannot be properly governed, an asymmetry by comparison with Object position which goes back in the first place to the occurrence of V-max as S-internal VP. Thus, while the verb properly governs the Object position, INFL governs and gives case to the Subject position, but does not properly govern it. On the other hand, Subject position cannot be properly governed by the trace in Comp; in fact it is not governed at all, since t-in-Comp is in a branching relation with the Complementizer 'that', and hence does not c-command the gap in S<sup>1</sup>.

1. NB. 1. Chomsky 1981 also takes up (240ff) Rizzi's pro-drop syndrome.

2. Cf. Kayne 1981 for S' as a V-projection.

3. Cf. Bouchard 1984 for the claim (based on the analysis of anaphor-binding) that VP is not a maximal projection in English.

4. Cf. Chomsky 1981: fn.33, p282 for the alternative account of non-extraction of Subjects, viz., a) with empty Subject (including variables as well as PRO), the R-rule is obligatory in the syntax, or b) otherwise, inversion is obligatory.

## 2. The hypotheses

2.1. HYPOTHESIS 1. VP AS A MAXIMAL PROJECTION WILL ALWAYS PROVOKE THE EXTRACTION ASYMMETRY.

2.1.1. Problem: Italian surely has VP as a maximal projection, yet still allows Subject extraction.

2.1.2. Auxiliary hypothesis. Subjects are in fact extracted from postverbal position, following 'free inversion'. This hypothesis was first formulated in Rizzi 1981, building on intuitions on the Null Subject parameter in Taraldsen 1978, and on the relevance of LF as a diagnostic tool in syntax in the present case in Kayne 1979 (2.1.3. below).

2.1.3. Kayne 1979 offered support for post-verbal Subject extraction from LF, where data from wide-scope negation parallels that for the syntactic asymmetry. But while this neutralised the apparent ECP violation, it also instituted the myth that LF movement substantively parallels syntactic movement and may thus be used as a diagnostic for otherwise uncertain syntactic structures. We revert to this in Sec. 3. below.

2.2. HYPOTHESIS 2. IF VP IS A MAXIMAL (S-INTERNAL) PROJECTION, THEN SUBJECT EXTRACTION IS POSSIBLE PROVIDED SUBJECT-VERB INVERSION IS 'FREE'.

2.2.1. Problem. German has no Subject-Verb inversion, yet allows Subject extraction across 'that', as in:

Wer glaubst du wohl dass morgen kommt?  
«who do you actually believe that is coming tomorrow?»

in the absence of the apparently necessary inversion

\*Ich glaube dass kommt der Peter.  
«I believe that comes Peter».

2.2.2. Auxiliary hypothesis. German VP is not an S-internal maximal projection, since German is a 'flat' language (Haider 1983). In such a language, where the verb of course governs all accompanying Argument positions, no extraction asymmetry is predicted.

Note however, that the data leading Haider to such conclusions may be reinterpreted on classical assumptions concerning VP, provided we assume (with Webelhuth 1985) that the landing site of productive verb movement in German qualifies as a governor wrt the Subject position<sup>2</sup>.

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2. NB. 1. This is perhaps generalisable to the claim that a Complementizer may function as a proper governor, in a V-2 language. Cf. below (2.6) on the Norwegian Complementizer 'som'. For the Comp-position as landing-site for V-movement, see den Besten 1976, 1984; and cf. Koopman 1984 on V-movement in general, of which German is thus a special case.

2. What of Hummer's example of extraction without movement of the finite verb, as in the at least marginally acceptable:

Er hat gefragt, wer dass den Peter geschossen hat.  
«He asked, who that shot Peter».

3. Cinque (p.c) suggests German INFL may be a proper governor; contrast English INFL, which is non-lexical and moreover governs in an (for English) anti-canonical direction.

2.3. HYPOTHESIS 3. AT LEAST, PROVIDED SUBJECT-VERB INVERSION IS 'FREE', THEN SUBJECTS MAY BE FREELY EXTRACTED.

2.3.1. Problem. Portuguese shows the prerequisite inversion, yet does not allow Subject extraction (Zubizarreta 1982).

2.3.2. Auxiliary hypothesis. In Portuguese, movement is exceptionally blocked despite inversion -potential, since an «inverted» NP takes Focus stress. Zubizarreta (*ibid.*) invokes the parallel with French 'que-qui'.

2.4. Digression on c-command.

2.4.1. Is a post-verbal NP in fact c-commanded by, and hence potentially properly governed by that verb?

2.4.2. Chomsky 1981: 166 invokes what now appears to have been a stop-gap solution, viz., relativised c-command. This must allow for (e.g. Italian) Subject-extraction from post-verbal adjunction position, while blocking ne-cliticisation from the very same position. Chomsky thus postulates a weak form of c-command, for Wh-Binding; but also a strong form, to block ne-cliticisation. But cf. Belletti (1985) on unaccusative verbs.

2.5. HYPOTHESIS 4. IF NO FREE INVERSION, THEN NO SUBJECT EXTRACTION.

2.5.1. Problem: Chao (cited in Bouchard) claims that Brazilian Portuguese has Subject extraction but no free inversion.

2.5.2. Aux hypothesis. Reverting to Perlmutter's 1971 generalisation, whereby Subject-extraction correlates with pro-drop, we might conclude (cf. Bouchard) that Brazilian Portuguese does not show extraction at all<sup>3</sup>.

2.5.3. If 2.5.2. holds up, then the relation of the Wh-word (Subject) and its gap is simply by Predication, as in Chomsky 1977.

2.5.4. Responding to Chao, Rizzi 1979 (178 fn. 20) points out that while Italian shows a more general form of the parallel between Subject-inversion and 'there/il' constructions in English and French, Brazilian Portuguese shows a more constrained form of that parallel. For Rizzi, the degree of parallelism seems thus to be a parameter of variation across languages which have Subject-extraction.

2.6. HYPOTHESIS 5. A LANGUAGE WITH VP CAN EXTRACT A SUBJECT ACROSS S' ONLY IF IT ALSO HAS PRO-DROP.

2.6.1. Problem: On the one hand, we do not suppose that the phenomenon of «missing Subjects» in German (Ross 1981) necessarily connects with Subject extraction at all. Rather, it resembles (Huang 1982) Topic-loss in Chinese.

2.6.2. On the other hand, Norwegian has VP, no inversion, and no pro-drop, but still has Subject extraction in the intended sense, as shown in Taraldsen 1983.

2.6.3. Auxiliary hypothesis; Relativisations

a) of 'som' as Referential, vs. as Operator in Comp.

b) of EC, as variable, vs. as anaphor<sup>4</sup>.

2.6.4. Engdahl 1983 adopts the view that in Norwegian (as similarly in Swedish) a

3. Cf. below for the case of Mod.Greek, and contrast Vata (Koopman 1984) with overt RP, as in «Who he came»?

4. Cf. the French case in Pesetsky 1981, and cf. Chomsky 1981: 240ff.

Subject [e] may be properly governed within its governing domain S' by either a) an overt complementizer such as 'som', or b) a coindexed [e] in Comp<sup>5</sup>.

2.7. HYPOTHESIS 6. A LANGUAGE WITH PRO-DROP HAS THESE PROPERTIES.

2.7.1. Problem: The facts of Russian (Pesetsky 1981). For configurational languages, all subcategorised positions must be present at SS: then a non-phonetic Subject must be pro. But Russian shows more complex behaviour: on the one hand, Wh-movement must leave a variable, so the relevant position must be present as SS. This is reflected in the status of a sentence such as

\*paren' kotoryj ja xotel ctoby ubil Masu.

\*The guy who I wanted that kill Mary.

with ECP violation. On the other hand for Subjectless sentences such as ljublyu Masu «I love Mary», Pesetsky wants to hold that nothing (rather than a non-phonetic element) is present.

2.7.2. Aux hypothesis: the non-configurational version of the Extended Projection Principle (319), cf. Borer on Empty Subjects (NELS X), and also Hale (1982), Farmer (1983); viz., that in such languages A-positions may simply remain unfilled.

### 3. On LF as a diagnostic tool in Syntax

3.0. Digression on LF wrt Subject-extraction from post-verbal position. Despite the claims in Jaeggli, Rizzi and Cinque, it remains unclear just how far the Kayne and Rizzi argument supports the post-verbal position as the launching site for Subject extraction, and that, on the following grounds.

3.1. The very data for the LF parallel have been called in question, e.g., by Vergnaud (Salzburg August 1985), at least for French (for Italian, see below 3.2. below).

3.2. The basis of the asymmetry in LF has also been questioned. Picallo 1984 claims that both the French and the Italian examples of wide-scope blocking from Subject position significantly involve Subjunctive; thus one might claim that (in contradistinction to Indicative) «Subjunctive does not possess sufficient Features to be a proper governor of Subject [e] at LF». [Cf. Sec. 7 below for Greek].

3.3. As Safir 1982 argues, the purported syntactic parallel with the existential construction «There's a man in the garden» is also doubtful. If the post-verbal NP acquires its Case by inheritance (which is to say, if that NP really moves to the adjunct position) then the Definiteness Effect should appear: yet it is quite clear that, as against «There's the man in the garden», both «Gianni mangia» and «Mangia Gianni» are perfectly grammatical<sup>6</sup>.

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5. Engdahl shows that Subject extraction fails for Relatives (as distinct, e.g., from Indirect Questions) because Relatives fail to contain an XP position outside S'. However, assuming that NP and S' are Bounding nodes for Norwegian, extraction apparently violates subjacency. The resolution of the apparent contradiction (since such sentences as «Ola, I know many that like» are in fact grammatical) in Norwegian forces Engdahl to introduce Kayne's 1983 Connectedness.

6. Safir 1985 resolves this paradox by rejecting the structure assumption from which the parallel

3.4. The parallel between LF and syntax is by no means uniform across constructions. Thus consider the case of Italian reciprocals in Belletti 1982, esp. pg. 120ff, on the asymmetry between syntax and LF wrt Preposition-stranding.

3.5. Lastly, there are problems with the Superiority Constraint that cast doubt on the LF parallel. See Sec. 8. below.

3.6. Nevertheless, Chomsky 1985 exploits the parallel fully, wrt to the work of Higginbotham and May 1981.

#### 4. Revision after Jaeggli 1983, etc.

4.1. Reconsider Subject-extraction from the point of view of the claims of Jaeggli 1983, following the intuitions and argumentation of Rizzi 1982. Jaeggli first confirms the claim that Subject extraction in Italian is from post-verbal position. Trentino Italian shows an obligatory Subject clitic when a Subject is in pre-verbal position; thus the fact that this clitic type cannot appear in the environment of Subject extraction proves that Subject extraction can only originate from post-verbal position.

4.2. Jaeggli is further concerned to show that the Chomsky 1981 ECP account must be replaced; apart from further (apparently unrelated) cases, Jaeggli's account proposes to cover cases not covered by ECP: thus short extraction in Trentino shows the crux case as in

\*Quante putele *ele* nade via? (with clitic),  
vs. Quante putele e nade via? «How many girls have left»? (without clitic).

4.3. We here outline the replacement of the ECP account of the necessary failure of Subject extraction from Subject position.

a) In the context of a nominative Case-assigner, Inflection is assigned [+pronominal] (and thus absorbs Nominative Case) iff the preverbal Subject is empty at S-structure (Rizzi 1982, 153): thus, Italian pre-verbal Subjects are [e]'s;

b) An *ec* is [+pron, -anaph] iff it is governed by a «rich» Agreement element (Jaeggli 1983): thus, Italian Subject [e] is *pro*;

but c) in contradiction to the 'functional' definition of empty categories in GB, «*pro* cannot function as a variable if locally A'-bound, i.e. bound by an operator (Jaeggli 1983); it follows that:

d) the Subject position is for Italian, and other languages characterised under a) and b) above, not a possible extraction site.

Thus Jaeggli derives the extraction constraint from the theory of the nature of variables rather than from the ECP<sup>7</sup>.

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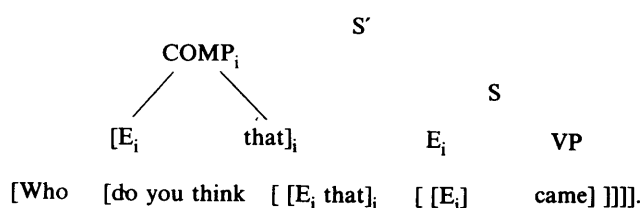
arose. He now assumes that Case assignment to the post-verbal NP in free-inversion situations is not by inheritance at all; rather, NOM Case is assigned by INFL to a (verb-prefix-like) Subject clitic, which then assigns it to the post-verbal NP under government. Since no 'unbalanced chain' arises, no Definiteness Effect can obtain. For present purposes it is crucial to note that the LF parallel has thereby also been given up.

7. Cf. the elaboration in Cinque 1984: Cinque sets up the very distinction rejected by Jaeggli, viz., that between a pronominal [*pro*] bound by an Operator in Comp, vs. a pure variable; but

4.4. It seems that at least the conclusion under b) above is rephrasable. In the light of Safir's 1985, the interpretation of Japanese as requiring pronominal interpretation of missing arguments shows that we can detach the factor of 'rich inflection' from the debate, just as we can (though on other grounds) detach the factor of 'free inversion'. Simply put, the entire 'pro-drop' syndrome is dissolved into its separate symptoms! What is more, in explaining failure of Subject extraction, we might now appeal to Safir's further claim that while Subject-position is indeed governed by INFL (so that that position cannot contain PRO), yet it is not properly governed.

### 5. Revision after Andy Wahl (A.W) 1985

5.1. Consider yet another alternative explanation for the \*that-t effect. As Chomsky 1981 puts it, a Subject [e] is not c-commanded, and is thus not properly governed by intermediate [e]-in-Comp; the result is an ECP violation. In A.W. 1985 this explanation is superseded as follows: Assuming Comp-indexing applies (by percolation from the 'head' of Comp), the Subject gap in a sentence such as «Who do you think that came?» may indeed be properly governed by the intermediate [e] in Comp, through the Comp index in the configuration



What excludes it nevertheless in English (as against Dutch) is simply that English (as against Dutch) does not allow double-filled Comp.

[NB. Contrast the 'classical' tradition, which utilises the (universal) «double-Comp Filter», cf. Lasnik and Saito 1984].

5.2. Take first languages like Chinese, where supposedly no overt movement takes place; A.W. attribute the differences between Chinese on the one hand and English, French and Italian on the other, to the absence of AGR in Chinese and the fact that selectional restrictions in Chinese hold at LF<sup>8</sup>.

5.3. Languages like Chinese aside, consider the implication from 5.1. above, as follows:

5.4. HYPOTHESIS 7. SUBJECT-EXTRACTION LANGUAGES IN THE SENSE INTENDED (I.E., LANGUAGES SHOWING NO \*THAT-T EFFECT) ARE ALL SUCH AS LICENSE DOUBLE-FILLED COMP.

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Cinque does this simply in order to handle cases where strict 'movement' fails to account for apparent violations in p-gaps, adjunct (ie. Island) extractions, and COD constructions in Romance languages. Thus cf. the perfectly 'proper' binding of [pro] (not vbl) by a Base-generated Operator («O») in an A'-position, in the Greek Relative:

To arthro pu piga stin taxi xoris na diavaso.

The article [O that [I went to class [without reading [e] ]].

8. A.W. cite Harlow for details of a marginal Topicalisation process in Chinese involving movement, whereby the usual Subject-Object asymmetry of course reappears.

5.4.1. The first consequence of such a claim might reflect in the handling of Norwegian, held in Taraldsen 1983 to show Subject-extraction by virtue of government of [e] by the Complementizer 'som'; this assumes that Comp can count as a governor, under Connectedness, and of course without a further [e] in Comp itself. Yet Norwegian seems also to have double-filled Comp in Wh-questions [& see below on Greek].

## 6. The Greek case. Introduction

6.1. Greek has VP as a maximal projection within S, just like English and (perhaps more relevantly) Italian. Also like Italian, but unlike English, Greek is a pro-drop language. We shall consider below how far the Italian connection is to be upheld for Greek, though in our own framework. Before doing so, however, we first consider whether Andy Wahl 1985 does not perhaps short-circuit out efforts; that is, we ask whether Greek indeed shows the predicted «double filled Comp» effect on which A.W. rest their case for Subject extraction.

### 6.2. Hyp. 7. revisited. Double-filled Comp in Greek?

Consider the following data for Modern Greek

- (i) \*Anarotyeme [pyos an] th<sup>r</sup> . agorasi psomi.  
«I wonder who whether will buy bread».
- (iii) \*Den ksero [ti an] tha agorasi o Petros.  
«I don't know what whether Peter will buy».
- (ii) \*Kseris [pyos oti] efige?
- (iv) \*[Ti (ke) pyos] agorase? Cf. [Ti ke pyos] to agorase?  
«What and who bought?»
- (v) [pyos ke ti] agorase? Cf. \*[Pyos ti] agorase?  
«Who and what bought?»
- (vi) Den ksero [pyos na] figi.  
«I don't know who should leave».
- (vii) Den ksero [pu na] pao.  
«I don't know where I should go».
- (viii) a) pistevo oti den ley tin alithya pote-tu.  
pistevo oti pote-tu den ley tin alithya.  
b) pistevo na min ley tin alithya pote-tu.  
\*pistevo na pote-tu min ley tin alithya.  
«I believe that he never tells the truth».

It is clear, despite the usual spread in informant judgments, that the possibilities for overt double-filled-Comp in Modern Greek are quite constrained [Cf. the largely similar distribution of data for Bulgarian 'da', from which Rudin 1983 concludes that 'da' is not a Complementizer but a Modality marker in Aux].

The data above shows

- a) \*what whether / \*who that / \*what who /\*who what
- vs. b) ?who whether
- but c) (perfectly acceptable) who na/ where na

It is thus likely that 'na' is not a Complementizer ((vi-vii) above, a conclusion supported i) by the non-interruptibility by Adverbials as in (viii)), as well as by the fact



that 'na' has no prepositional properties like those of Italian 'da' (vs. 'di') [Cf. Cinque 198] There is thus hardly any evidence for 'double-filled-Comp' in Greek at all ((i) above is for some speakers marginally acceptable). In this respect recall that both 'that + further Complementizer' and cases of double-Argument-Wh fail to occur except in 'conjuncts' in Comp (Cf. (iv), (v) above)<sup>9</sup>.

The ordering of Negative 'min' (in association with 'na') vs. 'den' (in association with complementizer 'oti') remains a problem.

Consider a) *Pistevo oti* [*den* tha mu-to-dosi].

b) *Pistevi na* [*min* - mu-to-dosi].

The parallelism here suggests that 'na' is indeed to be interpreted in parallel with 'oti'. If 'na' is simply a particle in Aux, then compare

a) *Pistevo oti* [*den* tha mu-to-dosi].

b) *Pistevo O* [*O na min*-mu-to-dosi].

and we must simply stipulate the Neg-insertion for 'na'-containing clauses, within a general treatment of Aux in Greek.

Yet in the end the parallel breaks down when we consider further data of the kind given above for adverbs:

a) *pistevo oti o Petros pote-tu den ley tin alithya.*

b) *pistevo o Petros pote-tu na min ley tin alithya.*

«I believe that Peter never-him not speak the truth».

where we see i) that Neg 'min' must in any case be 'lowered' into Aux from its original position in co-constituency with 'pote-tu (never-him), as cf. French 'ne...pas'; and ii) that 'na' is here certainly within S, and in fact inside Aux-in-Vb.

Thus to the extent that overt double-filled-Comp constructions in Greek fail to match the more abstract situation obtaining under Subject extraction, Greek fails to confirm the necessity of the Andy Wahl analysis for such constructions.

We have shown that Hypothesis 7 is not a necessary one, in that Greek shows Subject Extraction without the putatively prerequisite double-filled Comp possibility. What, then, allows Greek its privileged status?

## 7. The Greek Case. A triple hypothesis

After a preliminary remark on Greek Word Order, three possibilities for Greek Subject extraction must be discussed, viz., from post-verbal Subject position, from Subject position under government by a fronted verb, or simply by Base-produced Wh (i.e. by non movement). We shall claim that, since these correlate with the word orders VOS, VSO, and SVO respectively, all three may be found in Greek.

7.1. We take seriously Chomsky's proposal, elaborated (e.g.) in Stowell 1981, that the Phrase structure compone. of the grammar may be seriously stripped down; only Head-Complement direction must be postulated, in conjunction with some version of

9. So far as the possibility of 'double questions' is concerned, we conjecture that 'absorption' (cf. Higginbotham and May 1981) may be a parameter; normally applying to interpretation of Wh-in-situ and only at LF, as in English, it may apply also to double Wh-in-comp in the syntax for Greek, provided conjunction of the kind illustrated occurs.

X-bar theory, the resulting overgeneralisation being constrained by other components (e.g. Case theory) or constraints (e.g. Subjacency) of the grammar.

To begin with the null hypothesis, suppose nothing whatever is said about ordering in Greek. It would follow that all six possible orders explain why the orders SVO, VSO and VOS are equal and common, while SOV, OVS and OSV are marked as being less common and requiring focus and/or the presence of Object clitics. The required explanation follows only if, retreating from the null hypothesis on ordering, we grant that Verbs (as well as 'primary' Prepositions) canonically govern, and thus assign Case to the right in Greek: thus Case assignment to a Direct Object NP is possible for O(X)V orders only by Case-inheritance from a (verbal) clitic pronoun.

Thus: S O CLITIC+VERB O CLITIC+VERB S O S CLITIC+VERB

Cf. the converse question of the assignment of NOM to the Subject NP for the Un-marked orders. Here the relevant part of the structure is

FOR SVO, S INFL VB O.  
 FOR VOS, NPt INFL [ [VB O] S]  
 & FOR VSO, [VB [S INFL Vt O].

Consider now the status of these same unmarked orders SVO, VSO and VOS. Of these, we assume the latter two correspond to verb fronting (VSO) and Subject postposing (VOS), as indicated above.

What do we mean by referring to three orders (apart from the question of marked and unmarked)? We do not assume 'free' word order, or Scrambling. Neither do we assume Base alternations between SVO VSO and VOS, for that would carry far-reaching implications, e.g., that Greek shows (for the VSO order) Celtic-like properties<sup>10</sup>.

We assume, perhaps overly conservatively, that Greek is basically a SVO language, though with free V-fronting (parallel to the V2 effect found e.g. in Germanic) and free Subject NP 'inversion' (of the kind found commonly in Romance. And we assume further that while Verb preposing is probably by S-adjunction, Subject postposing is almost certainly by VP-adjunction<sup>11</sup>.

Several comments on this survey are in order.

1. It is again Case theory that must be appealed to in distinguishing between the exclusion (2-3) and the licit sentences (4-6). If, as seems likely, Subject position is not governed by INFL, then assuming 'want' in Greek subcategorises for (non-deletable) S', no Case is assignable to Subject position (2-3). It follows that a lexical Subject can

10. All the same, cf. Chung 1983 for 'flat' VSO in Chamorro and absence of 'that-t' effects.]

11. Verb-initial constructions are obligatory (conversely, Subject-NP initial clauses are illicit) in association with the Subjunctive 'na' particle already referred to above. Thus, without special contrast

1. thelo [na figi o Petros]. «I want Peter to go».
2. \*thelo [o Petros na figi].
3. \*thelo [ton Petro na figi].
4. perimeno [o Petros na figi]. «I expect Peter to go».
5. perimeno [ton Petro na figi].
6. me [ton Petro na arosteni oli tin ora], den tha teliosome pote.  
 «With Peter getting sick all the time, we'll never finish».

only stand within its clause in the presence of 'na' if it has access to an alternative governor as a source of Case. As we see above, this may be by Default ((4), the case of Left Dislocation); by ECM with Verbal Head as in (5); or by ECM with Prepositional Head (as in (6), the equivalent to English Gerund constructions).

2. It follows from the proposed explanation in 1, that Subject extraction from simplex 'na'-containing clauses cannot take place from Subject position, on the usual assumption that a variable must be Case-marked. Any such extraction in the face of this constraint must then be reinterpreted otherwise, eg as a case of Wh-in-situ, as below.

3. The second stage of reduction must now be faced in the question, why the presence of 'na' should block government of the Subject position by INFL. It may well be the case that Subjunctive in INFL (realised by 'na') does not have the Feature(s) necessary to make INFL a governor and thus a potential Case-assigner; the relevant Feature being perhaps [+Tense]. [Cf. Picallo].

We consider Subject extraction now in this frame:

## 7.2. Romance Inversion

The first possibility for Subject extraction in Greek is that it is in fact like Italian, viz., from post-verbal position. This is a conclusion maintained in Rizzi 1982 (based on Kayne's 1981 test from the scope of Negation), as well as Jaeggli (above); it is a possibility for Greek insofar as the appropriate inversion (and corresponding VP adjunction) is unconstrainedly available in Greek. The scope of Negation test confirms this as we see from the sentence=pair

\*I Meri den pistevi oti [*kanenas* tha elthi] (Subj-position)  
 vs. I Meri den pistevi oti [tha elthi *kanenas*] (Post-verbal position)

7.2.1. Note that there is also a case of adjunction involving the Direct-Object NP, viz., the case of the clitic-doubled Object. Interestingly enough, the adjunction-configuration in this case forbids extraction as is clear from

Ton ides ton Petro.                      but cf.              \*Pyon ton ides?  
 Clit/him-saw-you the Peter.                      Whom clitic/him saw-you?

The reason for the exclusion is straightforward, and «clears» the construction itself from any involvement. Simply put, the clitic absorbs government from the verb, so that the NP position is ungoverned and thus not an extraction site. On the other hand, of course, the non-extraction construction is licit, since a) the theta-role of Appositive is given by the VP-as sister, while b) the Case Filter is satisfied by Case-copy from the clitic at PF (cf. Drachman 1984 for details).

7.2.2. Interpreting German as a VP-language (e.g. as in den Besten 1976 or Webelhuth 1985), we might attribute Subject extraction in German to the possibility of VP-adjunction, for which a parallel emerges at least wrt PP (as suggested by Hummer) from the comparison between

Hans hat Marias Auto fuer sie repariert.  
 Hans hat fuer sie Marias Auto repariert.

## 7.3. Germanic Inversion

The second possibility, corresponding to the word order VSO, is that extraction is indeed from Subject position, but in construction with a fronted verb, as in some African languages such as Vata (Koopman 1984). Here, the prerequisite Verb move-

ment could be said to be attested in Greek. Note that we hold that the VSO order is not a basic option but is derived by Verb fronting; it is not the result of Subject postposing, since that would result in competing structures, viz., an adjunction structure for VOS (with the known problems of Nominative assignment), but a non-adjunction one simply for VSO, with the need for further mechanisms (of course apart from ergative verbs) of Nominative assignment. The parallel with Vata is to the advantage of Greek, moreover; in Greek (as distinct from Vata) an overt Subject pronoun is not merely not required under Subject extraction, but is not allowed, as cf.

Who *he* came? vs. Greek \*Pyos aftos ilthe<sup>12?</sup>

#### 7.4. SVO, DOCH?

Finally, consider the ordering SVO. As for Italian, the appeal to the LF parallel (given above) suggests that for Greek too, there is no proper governor for the Subject position wrt the SVO configuration. Nevertheless the possibility must be considered that Subject-extraction may be achieved even under employment of the base-order SVO.

The possibility resides in the simple expedient of not extracting at all. Cf. here Bouchard on Brazilian Portuguese, already referred to above, wrt free inversion<sup>13</sup>.

Under this non-extraction interpretation, a Subject WH-element may be Base-produced un S-adjunction, from where it is construed with (governed, but not properly governed) *pro* in Subject position by Predication, as mentioned above<sup>14</sup>.

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#### 12. Greek has no Subject clitic pronouns; the only pronominal available here is the deictic 'aftos'.

By contrast to Vata, this suggests that Subject position in the Greek VSO configuration is not merely governed but properly governed.

The problem case is that the Relative may indeed show an apparent Resumptive Subject (as pointed out by Fikias) as in

O anthropos pu *aftos* agapay tin Meri.

The man who *he* (is the one who) loves Mary.

But here we will simply assume the structure below, with the supposed Resumptive Subject in fact in S-conjunction:

O anthropos S' [pu S [aftos S [pro agapay...

Confirmation from O. French (Adams 1986): *pro* is licensed in Subject position wherever V2-effects obtain, as they do consistently in main clauses in OFr. Note too that German may well illustrate precisely this possibility, viz., extraction under p-government by a moved verb in Comp, as would follow from Weibelhut 1985, cf. also Koopman, above (2.2.2).

Finally, note that Verb-fronting is obligatory, in questions as after S-initial adverbials, agains just as in German. I shall discuss this in detail elsewhere.

#### 13. This case is distinct from that of the obligatory clitics, bound by an (abstract) Operator, necessary for COD and Adjective Comparison, as in Drachman and Malikouti-Drachman 1981.

O Petros ine efkolo na *ton* efxaristisome.

«Peter is easy for us to please *him*».

O Petros ine arketa psilos na *ton* vlepun se plithos.

«Peter is tall enough for 'them' to see *him* in a crowd».

(Cf. the treatment of Italian in Cinque 1985)].

#### 14. To support the S-adjunction, cf. the (non-topicalised) 'out of the blue' utterance

To alogo skotosan. (lit. «the horse they killed!»)

S [to alogo S [pro VP]]

Cf. the cases covered here which would otherwise suggest violation of Subjacency, such as eg the apparently licit extraction from CNP in

Na o anthropos pu pistevo tin fimi oti klepsane.  
 \*«That's the guy that I believe the rumor that they-robbed».

But there is no sense in which free A-deletion is possible, with the obligatory pronominal interpretation found in Japanese.

7.5. We have justified such a claim in the face of Andy Wahl's proposal, for Greek and perhaps other pro-drop languages too, to the extent that we have shunted out the 'double-filled Comp' possibility, or at least (if 'na' is a complementizer) demonstrated a relative paucity in the possibilities for 'double-filled-Comp' constructions in at least one such language<sup>15</sup>.

## 8. Reconsiderations

8.1. So far, we showed that (since 'inversion' and V-fronting are free options in Greek) Greek Subject-extraction may be either under p-government of the Subject NP (in VP-adjunction of NP, or by S-adjunction of V), or simply through Wh-in-situ (or S-adjunction). Since the surface strings are apparently identical, we seek some way (minimally, on behalf of the long-suffering first-language acquirer) to distinguish empirically between these solutions.

8.2. Consider the possibility of using the so-called «Superiority condition» as a test. This began in Chomsky 1973 as a stipulation, the relevant data having been described in Baker 1970. It took on the status of a theorem in Chomsky 1981, where (only partly following Aoun, Hornstein and Sportiche 1980; for Chomsky, adjunction is involved), it is proposed that the Superiority Constraint derives simply from the proper-government requirement at LF. Thus, considering of course only the non-echo readings, the difference between

- (1) I wonder who did what John knows who saw whom.  
 and (2) \*I wonder what who did \*John knows what who saw.

reduces to a failure of proper government. Simply put:

In (1) the Subject is extracted in the syntax. When the Object NP is extracted at LF, its trace is of course properly governed by the verb. But in (2) it is the Object NP that is extracted in the syntax. When, now, the Subject NP is extracted at LF, it lands in a position (beyond the Object-NP in left field — see Chomsky 1985), from which it no longer properly (antecedent)-governs its own trace.

15. As an afterthought wrt Benincà and Cinque 1985, it may be noted that Greek shows Topicalisation only under 'contrast'. What is more, Greek clitics do not (as in Italian) have the status of being simply the spell-out of AGR. This is clear a) from the licitness of «doubling» of the type «I saw him George», as well as b) from the non-alternation of (clitic... [e]) and ((obligatory) clitic ... [pronoun]), as against the situation in Spanish described in Montalbetti 1981. The parallels between Greek and Italian remain to be considered in detail, but it is likely that Greek does not follow Italian in the matter of whether lexical Subjects are allowed in Subject position.

8.3. Consider now the Greek data, recalling the relevant expectation: if the Subject NP is extracted either from post-Verbal position or from a fronted-verb configuration, then the resultant [e] should be properly governed at LF, and no asymmetry whatever should appear.

1. *aporo pyos ekane ti edo mesa.*  
I wonder who did what here inside.
2. *aporo ti ekane pyos edo mesa.*  
I wonder what did who here inside.

Despite this prediction, informants typically judge 2 as somewhat less acceptable than 1, although the difference is by no means so crass as it is for English. How are we to account for the discrepancy between prediction and outcome?

#### 8.4. Alternatives

8.4.1. We might begin by emphasizing that the difference between 1 and 2 is much smaller for Greek than it is for English. Then, another (unknown) factor could be held responsible for this discrepancy, without impugning the claim that post-verbal position is the legitimate extraction-site (whether by 'inversion' or V-fronting).

8.4.2. We might question the LF parallel altogether (cf. above Sec 3), noting that (e.g.) Barriers continues to support that parallel fully. All the same, problem data here might come (Rudin 1985) from the unexpected obligatoriness of the (Nom-Acc) ordering of double-questions in (as Rudin claims) many languages. This move must similarly appeal to a further unknown factor.

8.4.3. Finally, we might even hold that the Greek data above rejects both the Romance and Germanic 'inversion' claims wrt Subject extraction, and prefers the third alternative for Greek, viz., that no movement is involved! Then, Subject-extraction in Greek is by the Wh-in-situ strategy, presumably involving Base-produced WH in S-adjunction.

### 9. Conclusions

9.1. The method of Conjecture and Refutation showed us that Subject-extraction is not reducible to any one single parameter valid across all the languages permitting it. Rather, a small number of mechanisms (pace Wahl's one, viz., the marked cases of permitted 'double-filled Comp') collaborate to produce the various surface data.

9.2. The structural cases are those of proper government of a Subject-extraction-site. Thus,

a) Proper government of an adjoined site by V, the case of post-verbal Subjects. The Greek option *VOS* thus allows Subject extraction.

b) Proper government of S-Subject position by an element in Comp: here there are at least two well-substantiated cases:

i) Government by a Complementizer, as with Norwegian 'som'.

ii) Government by a verb in-situ, as perhaps for German (assuming German to be a 'flat' language, as in Haider 1982); or after being adjoined (as S or as Comp) as is possible for the Greek *VSO* option.

9.3. Subject 'extraction' without movement, i.e., with Wh-word being generated in S-adjunction or Comp, is perhaps indeed an option in languages like Greek and Brazili-

an Portuguese. It is allowed by the *SVO* option in Greek).

9.4. The concrete proposal for Greek may be illustrated in the three labelled bracketings below:

- (1) the VOS ordering: [wh [e [[V O] e]
- (2) the VSO ordering: [wh [V [e Vt O]
- (3) the SVO ordering: [wh [e V O]

9.5. On the other hand, if the Superiority data are taken at face value, it may well prove that Subject extraction in Greek always and only obtains via the Wh-in-situ (Wh-in-S-adjunction) strategy.

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