*VOS in Modern Greek: Syntax Revisited**

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Abstract

In the present paper we will be discussing the syntax of verb-initial orders in Modern Greek and more particularly the "problematic" VOS order. The existing analyses—building on a very limited range of data—fail to account for all the attested properties. It will be argued that VOS can not be due to mere object movement (object scrambling) nor to generation of the subject to the right (either as a specifier or as an adjunct); rather we will show that VOS is the outcome of a flexible strategy which allows the object to pied-pipe alongside the verb to T. Finally, we will argue that the operation shows characteristics of A-bar movement and that the object ends up in a position from which it cannot c-command the subject.

1 Introduction

Modern Greek (henceforth MG) is a free word order language in the sense that all logically possible orders of a subject, a verb and an object are attested. Needless to say, each word order is (usually) indicative of a different *information structure*, that is, a different partitioning of the linguistic message in terms of *new* vs. *old* information[1] and so on. In this piece of work we restrict our attention to the VOS order, an order whose syntactic properties—as discussed in the relevant literature—still remain controversial.

Before we come to the core of our analysis, we should briefly highlight some basic aspects of MG syntax. MG is assumed to be a VSO language in which V-to-T

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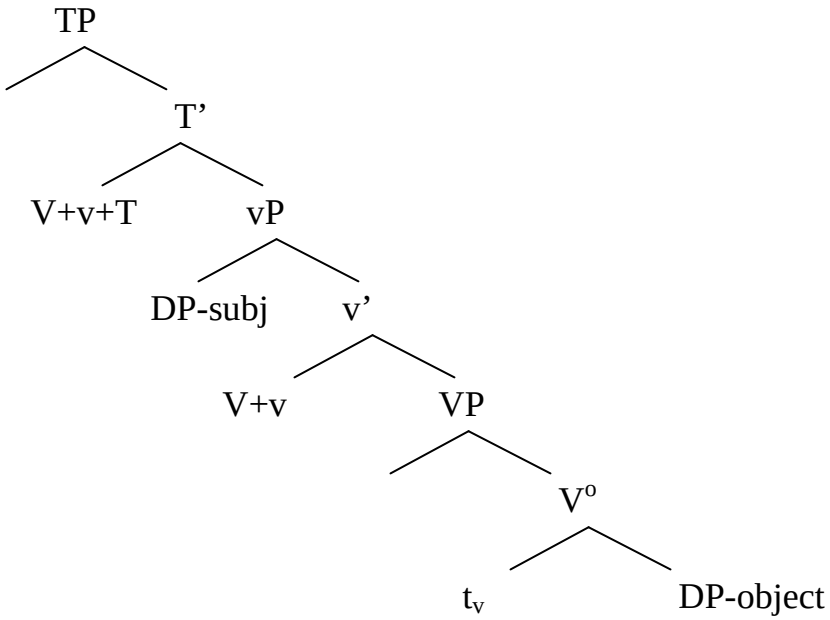
[1] Of course, apart from syntax (i.e. word order), phonology plays an equally important role in the realization of the various partitionings. As far as VOS is concerned, we should note at this early stage that we will be focusing exclusively on VOS under neutral intonation, that is, when main clausal stress is assigned to the subject. For a detailed account of how syntax interacts with phonology in the realization of information structure cf. among others Alexopoulou 1999, Keller & Alexopoulou 2001, Haidou 2004/2006.

movement is a well established property (Philippaki-Warburton 1985, Tsimpli 1990, Horrocks 1994, Alexiadou & Anagnostopoulou 1998, among others). Furthermore, as far as VSO is concerned, it is assumed that the subject remains in a VP- (or vP-) internal position[2] (see 1). Preverbal subjects are generally considered to be base-generated adjuncts (but see Horrocks 1994 for a different view). Furthermore, VSO is seen as the informationally less "marked" order, in the sense that it is perceived as containing all-new information[3].

(1)



Turning now to VOS—the order which is the main focus of this paper— the analyses put forward in the last two decades vary radically with respect to each other. The main task of this paper is to evaluate these analyses on the basis of syntactic evidence that has not been taken into consideration so far. As we will show, none of the existing analyses can account adequately for the syntactic properties of the VOS order, at least for a language such as MG. Instead, we will put forward an alternative account, according to which VOS is the outcome of an operation which allows the object to move alongside the verbal head. Before we

[2] Note that there is no general agreement as far as EPP satisfaction is concerned: Alexiadou & Anagnostopoulou (1998) argue that it is the nominal features of verbal morphology which satisfy the EPP requirement, while Philippaki-Warburton & Spyropoulos (1999) assume that there should be a bunch of covert nominal features ("subject-clitic") in a position high enough in the tree. On the other hand, Kotzoglou (2001) argues that EPP is parameterized, and—thus—possibly not activated in MG.

[3] However, as we have shown (in prep. "The Syntax-Information Component Interface"), the factors which opt for VSO/SVO have little to do with the novelty/givenness of the referent of the lexical subject.

present the syntactic data and before we reach any conclusions, in the remainder of this introductory part we briefly present all the possible syntactic configurations that could lead to a verb-object-subject linearization. In subsequent chapters, we will discuss this in more detail and present a critical evaluation of the predictions each account makes.

One possibility is that the linear order verb-object-subject is due to right-adjunction of the subject in a position relatively high in the tree (see 2). Tsimpli (1990) distinguishes between pre-verbal subject topics (SVO) and post-verbal subject topics (VOS), the only difference being the directionality of the adjunction operation (i.e. left-adjunction to CP leads to SVO, while right-adjunction to CP leads to VOS).

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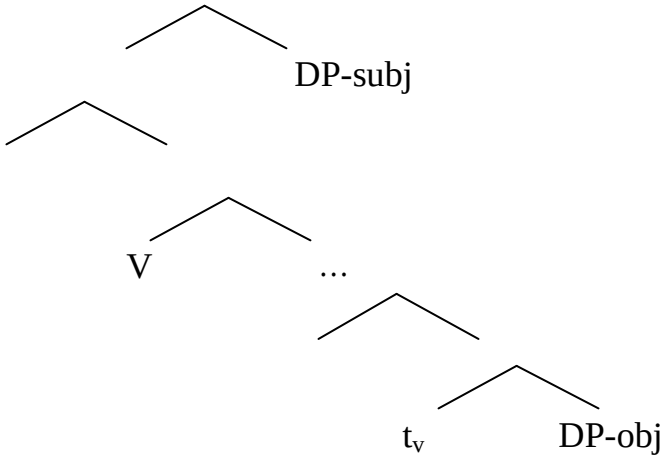
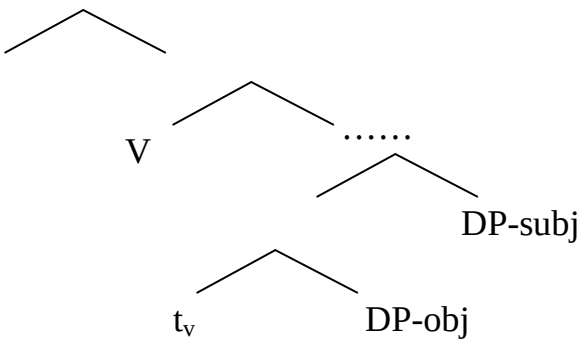


In the same spirit, it could be that VOS is due to the fact that [SpecVP] (or [SpecvP])—which hosts the lexical subject—projects to the right. Although such an idea has never been put forward explicitly for MG, it has been proposed for languages such as Catalan (Bonet 1988, Solà 1992) and French (Friedemann 1995):

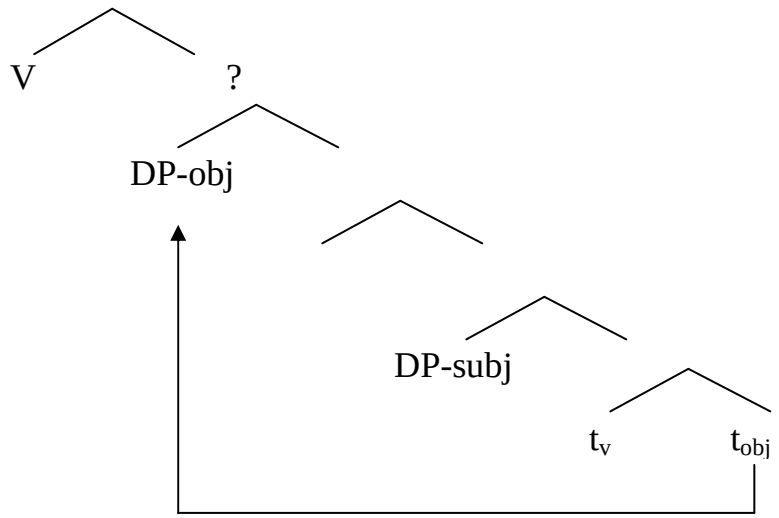
(3)



Another possibility would be to allow the object—from an underlying VSO

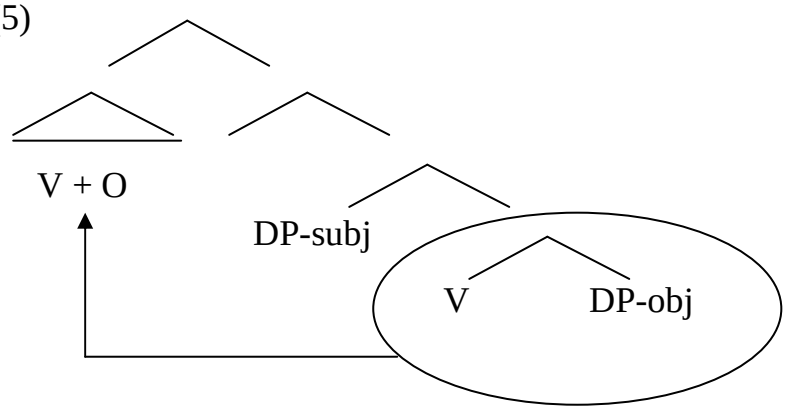
order—to undergo local movement; after such movement takes place, the object ends up in a position higher than the in situ subject and lower than the verb, which has been raised to T. We will be referring to analyses of this kind as "object-scrambling" analyses. Such an idea has mainly been explored by Alexiadou (1997, 1999, 2006), and it has also been adopted by Haidou (2000):

(4)



Finally, a third possibility would be to allow something larger than the object alone to move to a position higher than the subject. Anticipating the discussion, we will show that the syntactic evidence favours an analysis of this type:

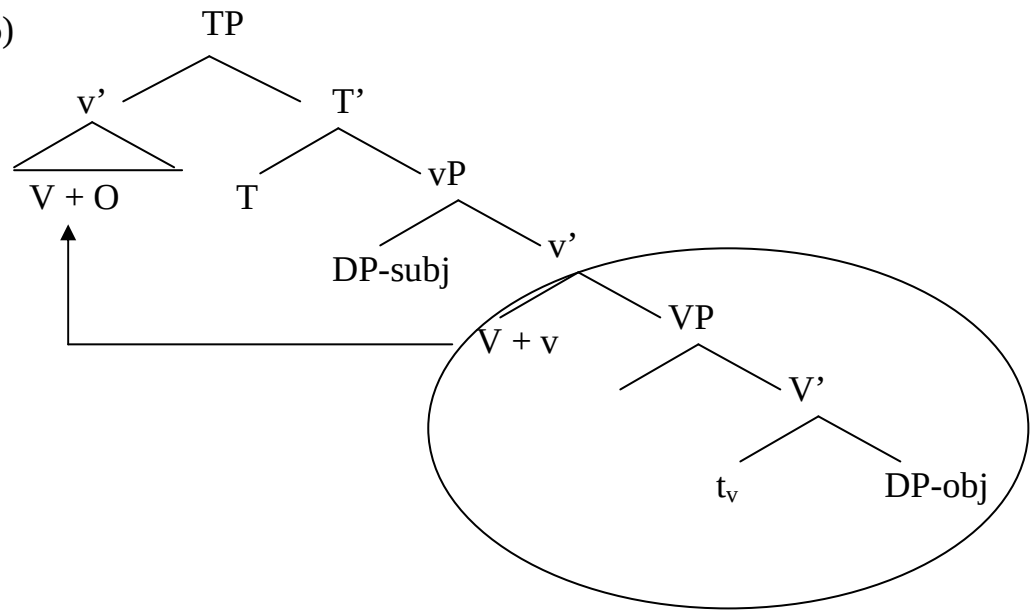
(5)



Although the idea of moving something larger than the object to obtain the VOS order is not radically new, since a variant of it is also found in the analyses of Philippaki-Warburton (2001) and Georgiafentis (2001, 2003), we will show that

actually the only thing that needs to be taken into consideration is “pied-piping[4]”: when something moves, it can optionally 'drag along' more material. In this light, we will argue that what minimally differentiates VOS from VSO is that in the former case, the overt operation of V-to-T movement involves not just the verbal head, but rather a larger constituent, namely the v’ node which contains the verb and its complement. Thus we propose that the syntactic representation of VOS should be as in (6):

(6)



Note that as long as V-to-T movement is an operation triggered by the structural need for the uninterpretable T features of the verbal morphology to be checked against T, T° can no longer be the landing site for the raised constituent: it is hard to see how checking could be performed between a head and a non-head category (i.e. the v’ node). As such, we assume that the landing site this time is the specifier of T, where checking can be established in a Spec-Head configuration, provided that the T features of the verb can percolate higher to the v’ node.

The organization of the paper is as follows: in part 2 we present empirical evidence which will be the decisive criterion for choosing the right syntactic representation: 2.1 deals with secondary predication, 2.2 with adverb placement, 2.3 with anaphoric binding and 2.4 with quantifier scope. Section 2.5 summarizes the discussion. In part 3 we discuss some problematic issues concerning VOS and variable binding. Finally, in part 4 we briefly discuss some theory-internal issues related to the generation of the order under investigation.

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[4] Although we are not coming into details for space reasons, we believe that the use of remnant movement operations and the invention of extra functional projections upon which these analyses rely heavily for the generation of the VOS orders are not justified either by the syntactic or by the interpretational properties of the order under investigation.

2 The data
2.1 Secondary Predication

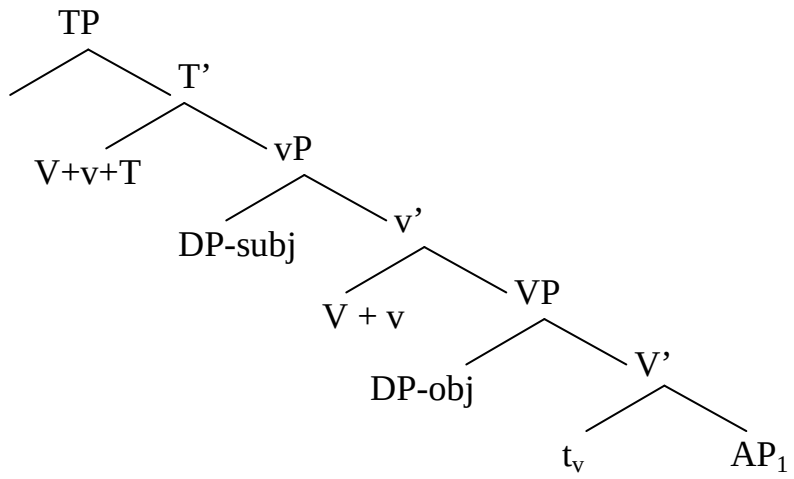
In MG, VSO orders followed by object-oriented secondary predicates constitute grammatical formations. For instance, the utterance in (7) involves a depictive secondary predicate, while that in (8) involves a resultative[5]:

(7) efaje i Maria to suvlaki omo (V-S-O_1-AP_1)
ate the Maria the suvlaki raw
"Maria ate the suvlaki raw"

(8) evapse o Jianis tin porta prasini (V-S-O_1-AP_1)
painted the John the door green
"John painted the door green"

In order to accommodate VSO_1AP_1 cases—such as these in (7) and (8)—syntactically, we resort to the *VP shell-structure* idea (cf. Larson 1988): the verb first merges with the secondary predicate, whereas the DP-object projects in a shell-like node and the subject is generated as the specifier of vP. Subsequent V-to-T movement (via v) will give us the desired linearization. It should be noted here that such a configuration fully respects secondary predicate licensing conditions such as the requirement that a secondary predicate has to be c-commanded by its subject (cf. Williams 1980)[6]. This is illustrated in (9):

(9)



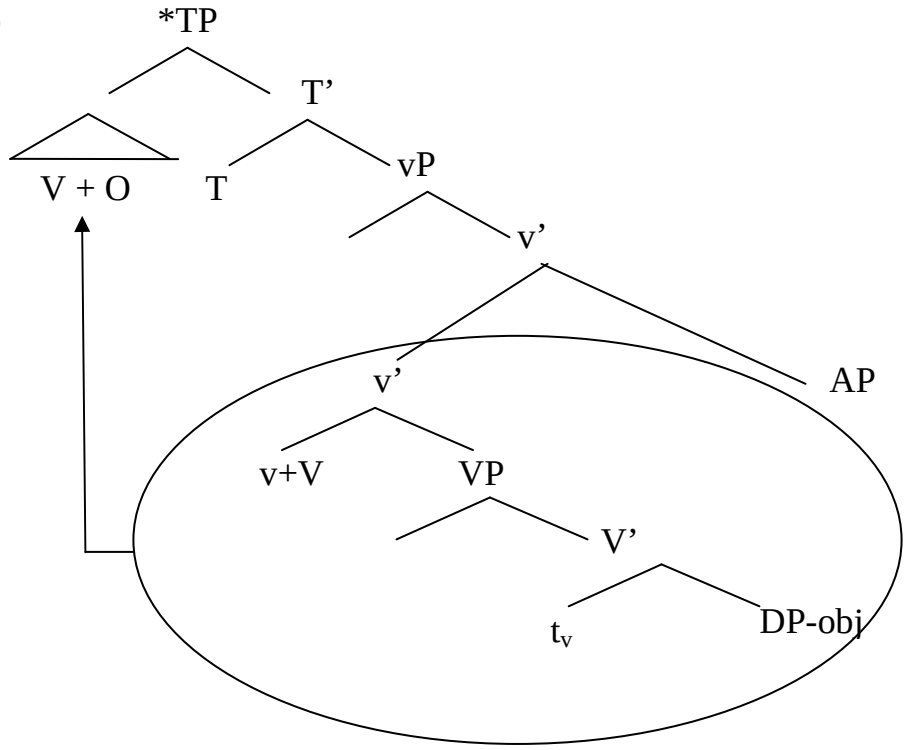
As far as VOS+secondary predicate orders are concerned, the analysis we pursue here makes one strong prediction, namely, that such orders should be expected to

[5] Note that while depictive secondary predication is productive in Greek, this is not the case with resultative secondary predication. cf. Giannakidou 1999, Horrocks & Stavrou 2003.

[6] For a different view on secondary predication licensing conditions in MG cf. Spyropoulos 1998.

be ungrammatical, since either (i) the object will not c-command the secondary predicate (see 10) in case the latter is generated as an adjunct or (ii) there is no way for the secondary predicate to be stranded in the structure (see 11) in a VP-shell structured tree.

(10)



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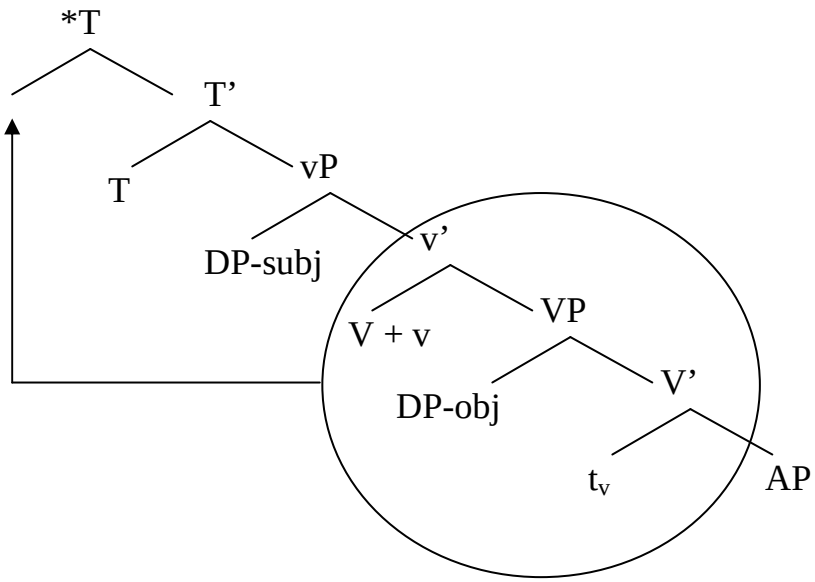


Indeed, such a prediction seems to be verified empirically: for all our informants, such orders are at least marginal (see 12-13).

(12) ?/?? efaje to suvlaki i Maria omo (V-O_1-S-AP_1)
ate the suvlaki the Maria raw
"Maria ate the suvlaki raw"

(13) ?/?? evapse tin porta o Janis prasini (V-O_1-S-AP_1)
painted the door the John green
"John painted the door green"

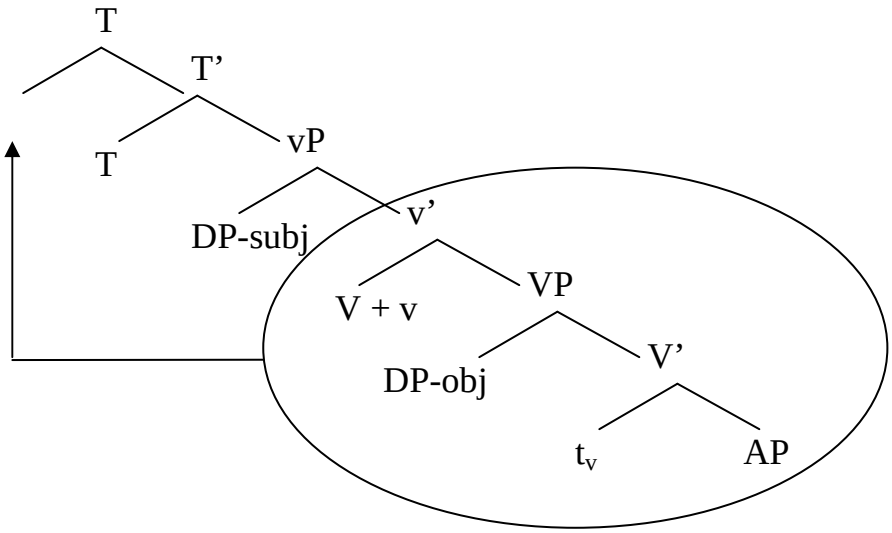
Another prediction our analyses makes is that VO_1AP_1S orders should be unproblematic. In such cases, the secondary predicate moves alongside the verb and the object contained in v' (i.e. no stranded), and, thus, it is indisputably c-commanded by its subject (i.e. the DP-object). Once again the empirical data verifies this prediction. Consider for instance the following two utterances, which constitute grammatical—although informationally marked—constructions for all our informants:

(14) δen to perimene kanis [pos θa evafe tin porta prasini o Janis(!)]
not it-cl expected nobody that would paint the door green the John
"Nobody expected that it would be John who would paint the door green"
(V-O_1-AP_1-S)

(15) θa kerδiso to stiximа mono [an fai to psari omo i Maria]
will win-I the bet only if eats the fish raw the Maria
"I will win the bet, only if it is Maria who eats the fish raw"
(V-O_1-AP_1-S)

The syntactic representation of VO_1AP_1S is given below in (16):

(16)



To sum up the discussion, we have seen that the empirical data seem to verify our working hypothesis: VOS orders are due to movement of v' rather than due to movement of the object alone. In respect with that, we have also argued that what minimally differentiates VOS from VSO orders is that in the former case V-to-T movement involves more material than the verbal head alone.

Carrying on, let us now present some more complex cases. Both (17) and (18) below involve a VSO order, but this time two secondary predicates are involved, one subject- and one object-oriented:

(17) epiδi efaγe o Aris to kreas omo meθizmenos, δe simeni oti…
because ate the Ares the meat raw drunk not means that...
(V-S_1-O_2-AP_2-AP_1)

(18) *epiδi efaγe o Aris to kreas meθizmenos omo, δe simeni oti…
because ate the Ares the meat drunk raw not means that…
"Because Ares ate the meat raw drunk, it doesn't mean that.."
(V-S_1-O_2-AP_1-AP_2)

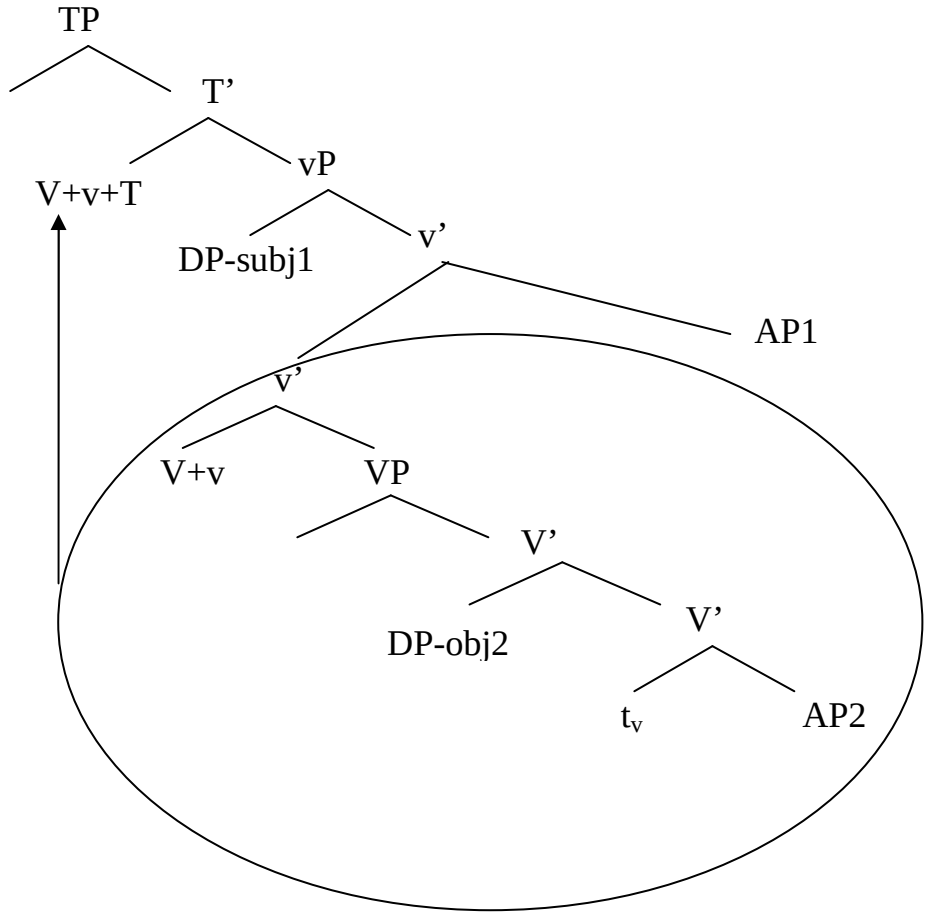
As far as the utterance in (18) is concerned, we assume that its ungrammaticality is due to a linearization failure concerning the subject-oriented secondary predicate. In particular, assuming that such secondary predicates generate as right adjuncts[7] to v', there is no means by which the object-oriented secondary predicate (which, as we argued, generates in a shell position within vP) will follow the subject-oriented one. On the contrary, the linearization in (17) is unproblematic: the subject-oriented secondary predicate –being a right-adjunct—follows they object-oriented one.
The idea is illustrated by the configuration in (19):

[7] The idea that the subject-oriented secondary predicate is generated as a low adjunct is further supported by VS1AP1O cases like the one in (a) below, which are judged as marginal: there is no means by which the adjunct can precede the verbal complement. VS1OAP1, as expected, is unproblematic (b):

(a) ?/?? pire o Aris meθizmenos to xapi (V-S1-AP1-O)
took the Ares drunk the pill

(b) pire o Aris to xapi meθizmenos (V-S1-O-AP1)
took the Ares the pill drunk
"Ares ate the meat drunk"

(19)



It is worth noting here that there is no possibility for the object to be associated with a secondary predicate in the AP_1 position due to lack of c-command. Similarly, the subject cannot be associated with a secondary predicate in the AP_2 position, something that is in line with Williams’s (1980) observation according to which secondary predication must meet c-subjacency.

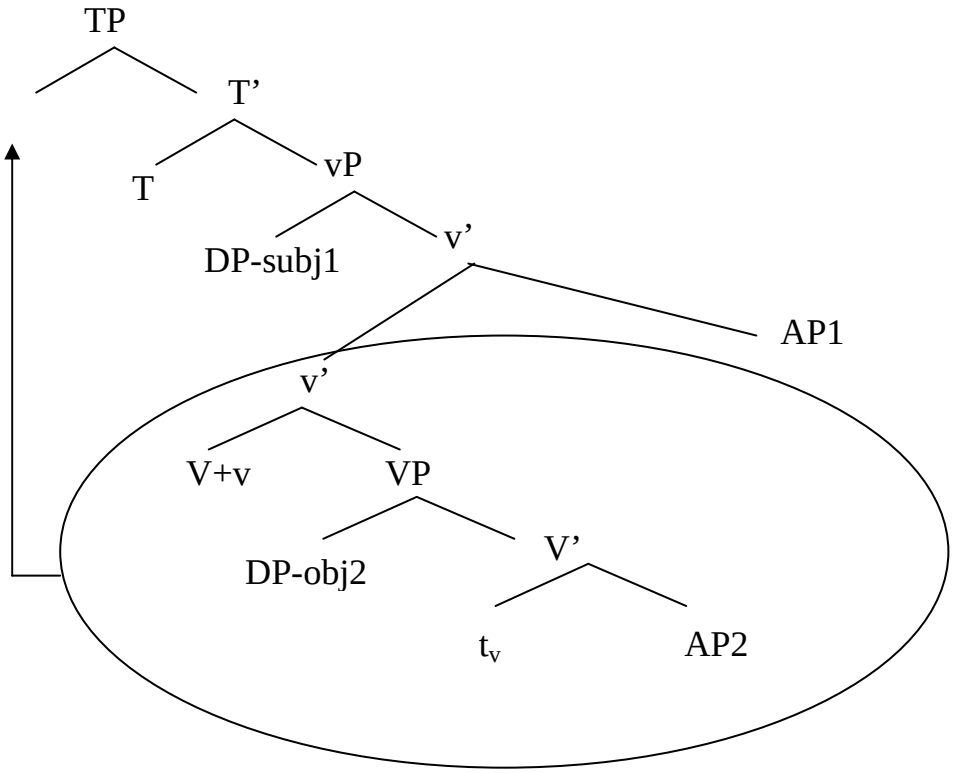
Given these observations, consider now the following two cases in (20) and (21). As before, there are two secondary predicates in each utterance, but this time they interact with a VOS order.

(20) ?epiδi efaγe to kreas omo o Aris meθizmenos, δe simeni oti…
because ate the meat raw the Ares drunk not means that…
(V-O_2-AP_2-S_1-AP_1)

(21) *epiδi efaγe to kreas o Aris omo meθizmenos, δe simeni oti…
because ate the meat the Ares raw drunk not means that…
“Because Ares ate the meat raw drunk, it doesn’t mean that…”
(V-O_2-S_1-AP_2-AP_1)

Although we recognize that the utterance in (20) does not enjoy the same degree of acceptability as the one in (17) above (i.e. the one in a VSO fashion), what is important though, is that the one in (21) is ruled out as ungrammatical. The asymmetry should not be surprising: if what moves in VOS, is the lower v' node and not just the object, there is no means by which the object-oriented secondary predicate in (21) (i.e. omo "raw") can be stranded. In sharp contrast, when the movement involves the object and the secondary predicate (contained in the lower v'), the acceptability clearly improves (20)[8]. The syntactic representation of the utterance in (20) is given below in (22):

(22)



Obviously, the data, once again, seems to verify our working hypothesis: VOS is due to movement of a larger constituent which contains both the verb and its complement, and possibly more material. Crucially, an object-scrambling account cannot easily account for the attested asymmetries. If VOS was due to object movement (scrambling), we should expect that there would be no problem with the

[8] Note here that even VO1AP1AP2S2 linear strings constitute grammatical formations: e.g.
epiδi efaγe to kreas omo meθizmenos o Aris, δe simeni oti....
because ate the meat raw drunk the Ares, not means that...
"Because it was Ares that ate the meet raw drunk, it doesn't mean that"
For cases like this, we assume that it is the higher v' node which moves. Pied-piping, thus, affects AP1 as well.

VO_1SAP_1 (cf. 12-13) and $VO_2S_1AP_2AP_1$(cf. 21) cases above, contrary to fact. Unavoidably, scrambling analyses have to seek for independent factors that could possibly constraint the generation of a VOS order. For instance, somebody could argue that the ungrammaticality of the VOS cases examined before is actually due to lack of trigger: according to some researchers (cf. Alexiadou 1997/1999, Georgiafentis 2001, Georgiafentis & Sfakianaki 2004) the VSO>VOS alternation is triggered by stress/discourse-related factors. Roughly speaking, the idea is that VOS is generated from a VSO underlying structure, when—for discourse-related reasons and by application of the default stress rules— main prominence must be assigned to the subject (i.e. instead of the object). However, even if we assume that such an interface constraint that ensures that the stress will be assigned to the subject exists, still this cannot explain the ungrammaticality of the VO_1SAP_1 & $VO_2S_1AP_2AP_1$orders. The idea is strongly undermined by utterances such as the one in (23), where main clausal stress in assigned to the secondary predicate which follows a VOS order; if such an interface constraint were valid, the utterance would be ungrammatical (since there would be no trigger for generating VOS), contrary to fact:

(23) A. ti simveni?
"What is going on?"
B. pire to xapi o Janis **nistikos** ‖ (ke tu ponese to stomaxi)
took the pill the John on empty stomach (and him-cl pained the stomach)
"John got the pill on empty stomach (and he suffered a stomachache)"
(V-O-S_1-**AP_1**)

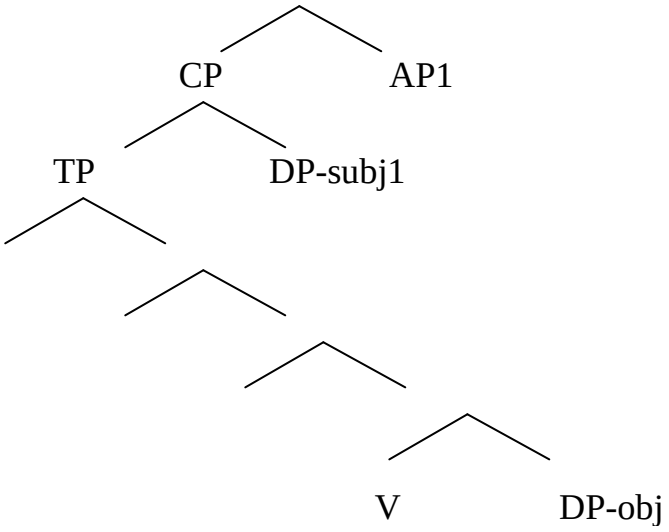
Before we leave this section, let us examine the predictions the two other possible analyses make, namely the right-adjunction (cf. 2) and right specifier (cf. 3) hypotheses, with respect to secondary predication. The main problematic aspect for both these analyses has to do with a licensing condition on secondary predicates, namely that a secondary predicate must be c-commanded by its subject. Consider for instance the following case:

(24) pire to xapi o Aris nistikos (V-O-S_1-AP_1)
took the pil the Ares on empty stomach
"Ares took the pill on empty stomach"

If we assume that in VOS the subject is generated as a right adjunct (possibly at the CP layer; cf. Tsimpli 1990) or as right specifier of the vP, there is no means by which the secondary predication licensing condition of c-command can be met: the secondary predicate cannot be c-commanded by the clausal subject. This is illustrated in (25) and (26) respectively. On the other hand, adjunction of the

secondary predicate lower than the subject does not lead to the desired linearization.

(25) *



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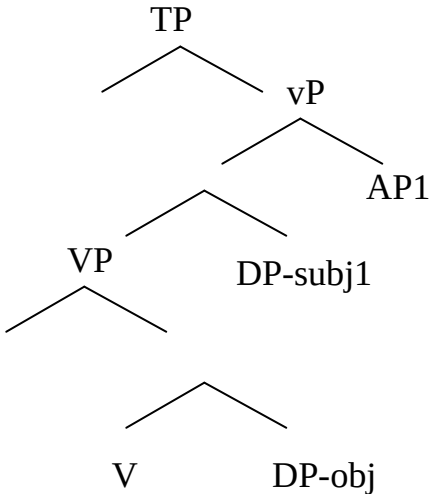


What is crucial after all in this discussion, is that the working hypothesis we pursued here, by distinguishing between v-to-T and v'-to-SpecTP movement for VSO and VOS orders respectively, and by building on well-established ideas on secondary predication licensing, is the only analysis that is in a position to account for all the attested asymmetries in a rather straightforward manner.

2.2 Adverb Placement

Having examined the way V-initial orders interact with secondary predicates, let us now present some extra evidence which validates and strengthens our working hypothesis. In particular, we will be dealing with the distribution of low adverbials, such as manner adverbs. As we will show, only an analysis which allows the object to move alongside the verb can account for certain asymmetries in the distribution of such adverbs with respect to VOS. To begin with, consider the following four cases: (27) and (28) involve a VSO order, while (29) and (30) involve a VOS order:

(27) klotsise δinata o Aris tin bala ke espase to tzami tu paraθiru
kicked hard the Ares the ball and broke the glass the window-Gen
(V-adv-S-O)

(28) klotsise o Aris δinata tin bala ke espase to tzami tu paraθiru
kicked the Are hard the ball and brok the glass the window-gen
"Ares kicked the ball hard and the glass of the window broke"
(V-S-adv-O)

(29) eno ola itan irema, ksafnika, klotsai tin bala δinata o Aris ke
while all was quiet suddenly kicks the ball hard the Ares and
(V-O-adv-S)

(30) ?eno ola itan irema, ksafnika, klotsai δinata tin bala o Aris ke...
while all was quiet suddenly kicks hard the ball the Ares and..
"And while everything was quiet, suddenly Ares kicks the ball hard and..."
(V-adv-O -S)

What is interesting in the set of data above is that while in the VSO orders the manner adverb can surface either between the verb and the subject (27) or between the subject and the object (28), it seems that in VOS it can only surface between the object and the subject (29); utterances like the one in (30) where the manner adverb surfaces between the verb and the object are quite marginal[9]. The same kind of asymmetry is also attested in dependent clauses:

(31) θa ekplaγo mono an lisi tin askisi γriγora o Aris
will be-surprised-I only if solves the exercise quickly the Ares
(V-O-adv-S)

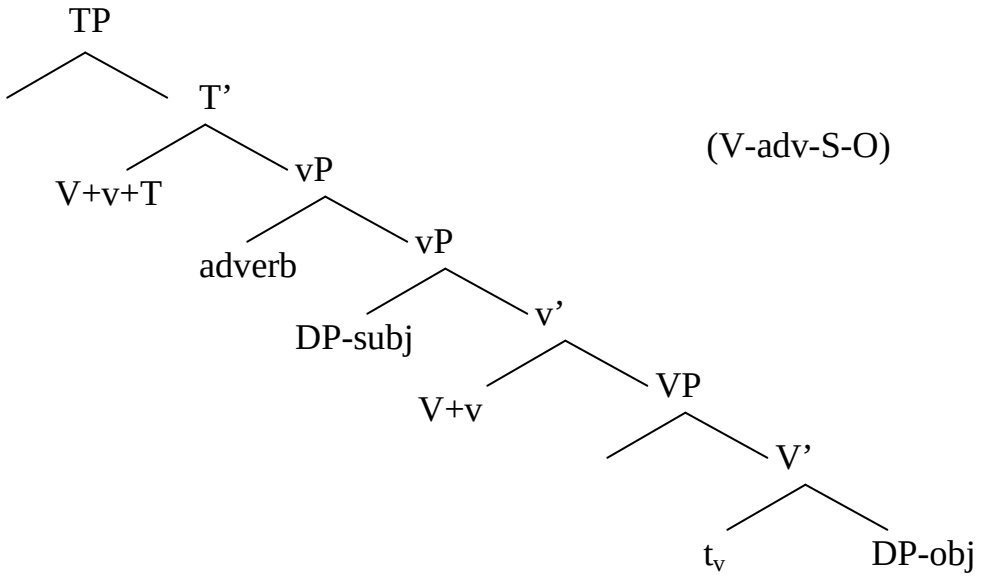
[9] We should note here that according to Alexiadou (1997, 1999) both VOadvS and VadvOS orders are ungrammatical. However, for the vast majority of our informants while VadvOS is somewhat marginal, the VOadvS order is rather grammatical.

(32) ?θa ekplaγo mono an lisi γriγora tin askisi o Aris
will be-surprised-I only if solves quickly the exercise the Ares
"I will be surprised only if it will be Ares who solves the exercise correctly"

(V-adv-O-S)

The analysis we are pursuing here allows us to generate the grammatical VadvSO and VOadvS orders (27 and 29/31 respectively) only by assuming that what moves to TP in VSO orders is the verbal head, while in VOS is more material, that is, the v' node. (see 33 & 34 respectively). On the other hand, building on Bobaljik (1999) where it is shown that adverbs can be generated in various positions in the tree, we assume that in the case of VSadvO the adverb is generated as an adjunct to the v' node. (see 35). As far the marginal status of the VadvOS orders is concerned, we propose that this is due to the fact that (left-) adjunction within v' is excluded[10], as is the case with English.

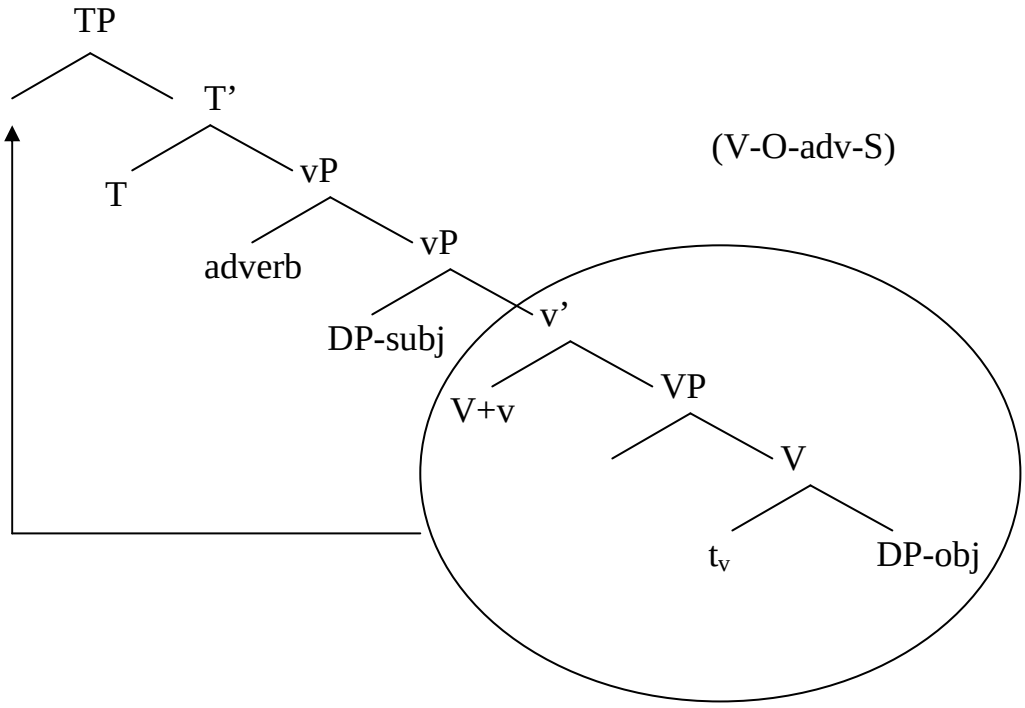
(33)



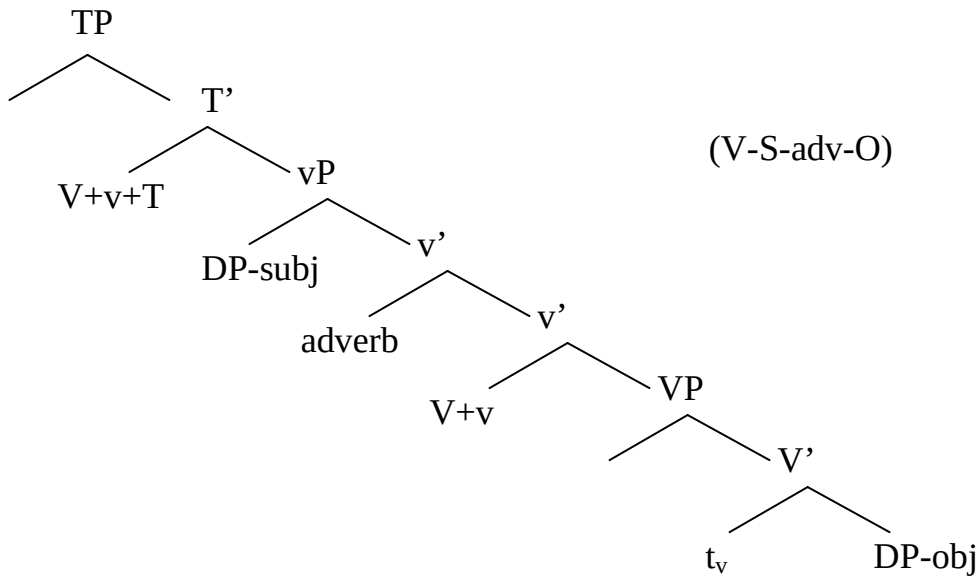
(V-adv-S-O)

[10] However, this does not eliminate the possibility for right-adjunction. Note that VSOadv and VOSadv orders are also grammatical constructions; (see also Xydopoulos 2001).

(34)



(35)



If a manner adverb can surface either between the verb and the subject or between the subject and the object in VSO orders, why is it the case that in VOS the only position available is the one between the object and the subject? In other words, why—if the object undergoes movement— can it not target a position above the

adverb adjoined to vP, while it can target a position below the adverb[11]? In the same way, the right-adjunction and the right-specifier hypotheses face similar or even more severe problems, since—under the same assumption, namely, that the adverb is adjoined to vP—they cannot account for the VOadvS cases, and additionally, they wrongly predict that VadvOS orders should be grammatical.

To sum up, it turns out that even the way manner adverbs interact with V-initial orders seems to verify our working hypothesis: VOS cannot be due to object scrambling or generation of the subject to the right (either as specifier or adjunct); rather, a system which distinguishes between V°-to-T° and v'-to-SpecTP movement and allows various adjunction sites for the (manner) adverbs, seems to capture all the empirical data.

2.3 VOS and Anaphoric Binding

So far we have shown that VOS should be due to movement of v' to [SpecTP] rather than due to mere object movement or due to projection of the subject to the right. In the remainder of this paper we will be dealing with two related issues, namely the properties of this operation in terms of the A- vs. A-bar distinction, and whether the object c-commands the subject or not.

Alexiadou (1997, 1999) and Haidou (2000) assume that the object in VOS is in an A-position, while Philippaki-Warburton (2001) and Georgiafentis (2001) on the other hand argue that it is in an A-bar position[12]. In what follows (sections 2.3 & 2.4), we will be considering data from anaphoric binding and quantifier scope. As we will show, the movement operation has A-bar properties. Furthermore, we will provide more evidence in favour of the idea that the object in VOS ends up in a position from which c-command over the subject cannot be established. To begin with, consider the following cases:

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[11] Alexiadou (1997, 1999) argues that the ungrammaticality of VadvOS is due to the following fact: manner adverbs are generated within VP as verbal complements that for checking reasons have to move to a position higher in the structure; after movement takes place they end up in [Spec,VoiceP] just above VP. Furthermore, she argues that object scrambling also targets the same position, that is, [Spec,VoiceP], and thus the alleged ungrammaticality of the order under examination is due to the fact that there is only one position available (under the assumption of course that there is no possibility for multiple specifiers). Beyond the theoretical orthodoxy of these assumptions, such an idea is simultaneously too weak and too strong: As we have shown, while VadvOS is rather marginal, VOadvS is constantly judged as a grammatical (though maybe marked) construction. On the other hand, such an analysis forces Alexiadou to assume that even VSadvO orders are ungrammatical. (cf. 30 which is judged as a grammatical construction by all our informants).

[12] Crucially, all these analyses rely heavily on pronominal binding asymmetries. However, as we will show in part 3, pronominal binding in Modern Greek can not be used as a diagnostic test for establishing the A or A-bar properties of a movement operation.

(36) *o pateras tu Petru$_1$ ektimai [ton eafto tu]$_1$[13]
the father the Petros-gen appreciates the "self"-his
"Petros's father$_1$ appreciates himself$_1$"

(37) *o Jorγos$_1$ ipe pos i Maria diafimizi [ton eafto tu]$_1$
the George said that the Maria advertises the "self"-his
"George$_1$ said that Maria advertises himself$_1$"

MG reflexives generally pattern with English reflexives in all relevant aspects[14]. Thus—as expected—both the utterances above are ungrammatical. In (36) binding can not be established since the embedded antecedent does not c-command the reflexive, while in (37) the binder and the reflexive are contained in different governing categories.

Coming now to our case, a prediction our analysis makes is that any VSO/VOS alternation should not be expected to affect anaphoric binding relations. In particular, it should be possible for a reflexive object to be co-indexed with a subject lower in the structure. Not surprisingly, the empirical data seem to verify such a prediction. Consider for instance the set of data from (38) to (41):

(38) tromokratise i Maria$_1$ [ton eafto tis]$_1$ (V S O)
terrified the Maria the self-her

(39) tromokratise [ton eafto tis]$_1$ i Maria$_1$ (V O S)
terrified the self-her the Maria
"Maria terrified herself"

(40) δe sevastike o Aris$_1$ [ton eafto tu]$_1$ (V S O)
not respected the Ares the self-his

(41) δe sevastike [ton eafto tu]$_1$ o Aris$_1$ (V O S)
not respected the self-his the Ares

---

[13] Morphologically the Greek reflexive pronoun is a complex noun phrase, consisting of the noun "o eaftos" ("the self") inflected for case (nominative, accusative or genitive) plus a possessive clitic pronoun in genitive. According to Iatridou (1988) co-indexation and thus binding is established between the antecedent and the pronominal element. Anagnostopoulou & Everaert (1999), on the other hand, argue that it is the whole NP and not just the possessor that constructs the anaphoric element: within the reflexivity framework it is the SELF element that reflexivizes the predicate.

[14] The situation, however, is quite different when subject reflexives come into play; in such cases it seems that the distribution is much freer, since, even in VSO (where the subject occupies its base position), the subject can be a nominative reflexive. Nonetheless, as has been claimed in the literature, nominative reflexives generally show different licensing properties from those of object reflexives. (cf. among others Anagnostopoulou & Evaraert 1999).

"Aris did not respect himself"

The data above fully fits into the pied-piping hypothesis: the object ends up in a position (after v' moves to [SpecTP]) from which c-command over the subject is not possible. Thus, the absence of Principle C effects is explained by the fact that that there is no c-command[15]. Moreover, in order for Principle A of binding to take effect, we assume that in (39) and (41) the moved constituent has to reconstruct to its base position; if reconstruction is a diagnostic for A-bar movement, we have some evidence in favour of the A-bar properties of the movement operation under investigation[16]. For an A-scrambling account (cf. Alexiadou & Haidou) there is no means by which Principle A can take effect, in order for the reflexive object to be c-commanded by its binder (namely, the lower subject), under the assumption that A-moved categories do not reconstruct, while on the other hand, the absence of Principle C effects are difficult to be accounted for.

2.4 VOS and Scope

In the previous section we argued that in VOS orders there is no c-command relation between the object and the subject. Furthermore, we have shown that the movement operation actually shows A-bar characteristics, given that in certain cases we need to resort to reconstruction so that Principle A of binding can take effect. In what follows, we will show that even quantifier scope data favours an A-bar analysis. To begin with, consider the VSO cases below:

(42) δjavase kapios maθitis kaθe vivlio (V S O)
read *some* *student* *every* *book*
"Some student read every book"

➔ This student was George.
- Existential > Universal (• Universal > Existential)[17]

(43) δjavase kaθe maθitis kapio vivlio (V S O)
read *every* *student* *some* *book*

---

[15] Note, however, that it is not entirely clear whether c-command is the crucial factor is such configurations. For instance, constructions such as "Himself$_1$, John1 likes most" are grammatical although c-command is established. What is important, though, is the fact that an A-scrambling analysis can not account for the grammaticality of the VOS orders, since according to such analyses the object is in A-position and c-command over the subject is indisputable.

[16] The fact that A-movement is argument-related movement could also exclude the possibility for the operation at hand to show A-characteristics; recall that the moved category is the non-argumental v' node.

[17] The parentheses simply indicate that the reading is not the preferred one or even that it is marginal.

"Every student read a book"

➔ George read book A, Maria read book B, Christina read book C...
- Universal > Existential (• Existential > Universal)

What the VSO utterances above indicate is that the preferred reading of scope dependencies in MG is defined largely by surface structure rather than quantifier raising (cf. also Giannakidou 2000, 2002). In (42) the preferred reading is overwhelmingly the one in which the existentially quantified subject takes scope over the universal. Similarly, in (43) the preferred reading is the one in which the universal quantifier (subject) takes scope over the existentially quantified object. The situation, however, seems to be quite different with VOS orders. Consider for instance the following two cases:

(44) δjavase ena vivlio kaθe maθitis (V O S)
read a book every student
"Every student read a book"

➔ George read book A, Maria read book B, Christina read book C...
- Universal > Existential (• Existential > Universal)

(45) δjavase kaθe biblio enas maθitis (V O S)
read every book a student
"A student read every book"

➔ This student was George
- Existential > Universal (• Universal > Existential)

In both cases, the preferred reading is the one in which the subject takes scope over the object[18]. So, in (44) the preferred reading is the one in which the universally quantified subject takes scope over the existentially quantified object, and in (45) it is the one in which the existential subject takes scope over the universally quantified object. In order to account for these cases of inverse scope we should once again resort to reconstruction: in the VOS cases scope is calculated after the moved category (that is the intermediate v' node containing the object) has reconstructed to its base position. And once again, if reconstruction indicates A-bar properties, then the operation which yields VOS should be an instantiation of A-bar movement. Crucially again, an A-scrambling account can hardly account for these facts.

[18] For some of our informants, however, the preferred reading is the reverse, that is, the one where the object takes scope over the subject. Nonetheless, this does not affect the argument since in principle both readings are available.

2.5 Summary

In the discussion in part 2 we have shown that the only analysis that can account for the VOS orders in—at least—Modern Greek in a straightforward manner is the one which allows the object to move alongside the verb as a case of pied-piping. We have also shown that the operation shows A-bar rather than A-characteristics. Although an A-bar scrambling account captures more data than an A-scrambling account, scrambling still cannot be the correct analysis. The right-adjunction and the right-specifier hypotheses, while they can account for anaphoric binding and quantifier scope data, fail to account for the data of secondary predication and adverb placement. The table below summarizes the inventory of the predictions all possible analyses make with respect to VOS orders.

	Sec.Predication	**Adv. Placement**	**Anaph. Binding**	**Quantif. Scope**
Pied Piping(A-bar)	☑	☑	☑	☑
A-Scrambling	⊗	⊗	⊗	⊗
A-bar Scrambling	⊗	⊗	☑	☑
Right-Adjunction	⊗	⊗	☑	☑
Right-Specifier	⊗	⊗	☑	☑

3 VOS and Pronominal Binding

All the existing analyses on VOS make use of data involving pronominal binding in order to establish the A or A-bar properties of the movement operation. According to the analyses of Alexiadou and Haidou, binding is affected (new binding possibilities arise), and so we are dealing with A-movement. On the other hand, for Philippaki-Warburton and Georgiafentis binding is not affected, and hence they opt for an A-bar analysis. For our analysis this question is rather trivial; recall that according to our working hypothesis it is not the object which undergoes movement, but rather a larger constituent containing the object. Thus, the object ends up in a position from which c-command over the subject is not possible.

Consider now the following cases:

(46) ??θa oδiγisi o iδjoktitis tu$_1$ to kaθe aftokinito$_1$ (V S O)
will drive the owner his the each car

(47) θa oδiγisi to kaθe aftokinito$_1$ o iδjoktitis tu$_1$ (V O S)
will drive the each car the owner his
"Each owner will drive his car"

(48) ??sinandise o pateras tu$_1$ to kaθe koritsi$_1$ (V S O)
met the father his the each girl

(49) sinandise to kaθe koritsi$_1$ o pateras tu$_1$ (V O S)
met the each girl the father his
"Each father met his girl"

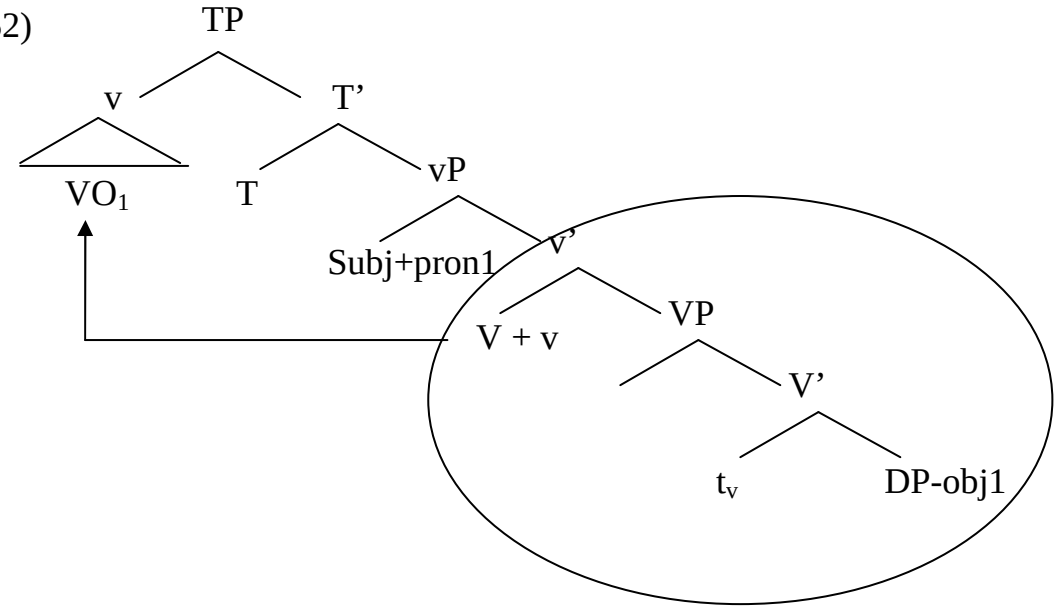
(50) ??afu prota eksetasi o jiatros tu$_1$ ton kaθena$_1$… (V S O)
after first examines the doctor his the each one

(51) afu prota eksetasi ton kaθena$_1$ o jiatros tu$_1$… (V O S)
after first examines the each one the doctor his
"After each one is examined by his doctor"

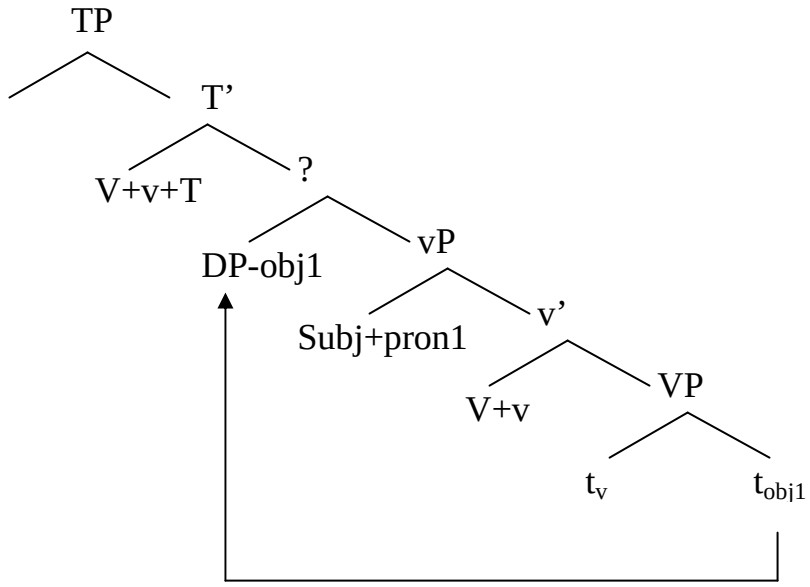
In (46), (48) & (50) above, a bound-variable reading is difficult to obtain due to the fact that the pronominal form contained in the subject can not be bound by the lower binder (the DP-object). In sharp contrast, the same binding configuration is perceived as entirely legitimate in (47), (49) & (51) respectively. Proponents of object scrambling, such as Alexiadou (1997, 1999) and Haidou (2000), have used this kind of asymmetry in order to establish the A-properties of scrambling: VOS creates new binding possibilities[19] (see also Ordoñez 2000 for VOS in Spanish). At first sight, the variable binding data poses a significant problem for our analysis: given that variable-binding is usually defined through co-indexation and c-command, it seems that our analysis fails to meet the latter requirement, since, according to our working hypothesis, the object in VOS does not c-command the subject (see 52). On the other hand, a scrambling analysis can account in a rather straightforward way for the attested asymmetries: after scrambling the bare object ends up in a position from which c-command over the lower subject containing the pronominal form is possible (see 53):

[19] The VSO examples are not ruled out as ungrammatical: the variable-binding reading can usually be obtained. However, for the majority of our informants the intended reading is much more salient in a VOS configuration. (cf. also Philippaki-Warburton 2001 and Georgiafentis 2001 who argue that the pronominal binding is not affected at all, favouring an A-bar analysis)

(52)



(53)



As long as c-command is a strict requirement for variable binding, we cannot offer any satisfactory explanation. Nonetheless, if we could show that variable binding is controlled by factors other than a strict configurational requirement such as c-command, the problem will only be apparent. In this light, consider the following cases: in (54) binding is established between a deeply embedded binder and the pronoun in the DP-object, while in (55) the embedded object is able to bind into the lower pronominal form contained in the subject:

(54)	iδe	[i	mitera	[tu	kaθe	peδiu$_1$]]	to	δaskalo	tu$_1$	(V	S O)
	saw	*the*	*mother*	*of*	*each*	*child*	*the*	*teacher*	*his*		

"The mother of each child saw his teacher"

(55) iδe [ekinos [pu sinoδeve to kaθe peδi$_1$]] ti mitera tu$_1$
saw that (person) that was accompanying every child the mother his
"The guy who was accompanying each child saw his mother"

(V S O)

Similarly, consider the following case:

(56) eperne xrimata [apo tin kaθe mana$_1$] to peδi tis$_1$ (V O PP S)
was taking money from the each mother the child her
"Each child was taking money from his mother"

In all the cases above—and irrespective of the exact syntactic accommodation of the data—variable binding is established. Crucially, though, the c-command requirement can not be met in any of these cases. This being so, we have good reasons to believe that pronominal binding (at least in a language like Greek) is not defined through c-command; rather—we assume— there must be some linearity (precedence) constraint—which might be of pragmatically-based origins—ensuring that the binder precedes the bindee. Indeed, all the cases above turn out to be problematic when the bindee precedes the binder:

(57) ??iδe to δaskalo tu$_1$ i mitera [tu kaθe peδju$_1$](V O S)
saw the teacher his-cl the mother of each child
"The mother of each child saw his teacher"

(58) ??iδe ti mitera tu$_1$ [ekinos [pu sinoδeve [to kaθe peδi$_1$]]]
saw the mother his that(person) that was accompanying the each child
"The guy who was sitting next to the each child saw his mother"

(V O S)

(59) ??eperne to peδi tis$_1$ xrimata [apo tin kaθe mana$_1$] (V S O PP)
was taking the child her money from the each mother
"Each child took money from his mother"

The fact that pronominal binding does not comply with strict configurational (i.e. syntactic/hierarchical) schemata is not a peculiarity of Greek. As is stated in Williams:

> […] the answer is that there is no "device"—no specific rules or principles—of bound anaphora in the first place; bound anaphora is instead a phenomenon that arises at the intersection of how an operator determines the interpretation of its scope and how pronouns are

> interpreted, perhaps among other things. The pronoun must be in the scope of the operator for the phenomenon of bound anaphora to be evident, but there is no c-command restriction that must hold between an operator and a pronoun that is bound by it." (1997: 586).

Nonetheless, in dependencies where c-command is expected to be a crucial factor, such as anaphoric binding and the distribution of referential expressions VOS cannot involve an object in a c-commanding position. Thus, we assume that pronominal binding data cannot be considered a decisive factor in favour of the A or A-bar status of the movement operation, since, as we have shown, c-command plays no role in variable binding, and thus we have no reason to believe that the object should c-command the subject.

4 Discussion

Beyond the fact that the proposed analysis seems to capture all the syntactic data examined in section 2 in a straightforward manner, the pied-piping hypothesis has some more advantages.

First of all, such an analysis—while it retains the optional character of pied-piping operations—by-passes the idea of *prosodic movement* (henceforth p-movement): a common characteristic of the analyses of Alexiadou, Haidou, Georgiafentis and to a lesser extent of Philippaki-Warburton is that they all assume in a way or another that the movement operation is due to discourse/stress-related reasons; the object must move locally to a position higher in the structure so that the subject will receive main clausal stress by application of the default stress rule, which, according to the theory, assigns main clausal prominence to the most deeply embedded element in the c-command domain[20], that is, the subject. However, this cannot be the case: as we have shown there are grammatical VOS+**x** cases; that is, cases where the main prominence is not assigned to the subject (60-61). Similarly, there are cases in which the VSO/VOS alternation simply repairs syntactically problematic configurations (62):

(60) pire to xapi o Janis **nistikos**‖ke tu ponese to stomaxi
(V O S1 **AP1**)
took the pill the John onempty stomach and him-cl pained the stomach
"John got the pill on empty stomach (and he suffered a stomachache)"

(61) θa pari ta peδia o Aris **avrio**‖ ke θa ta pai sto parko

[20] This idea goes back to Chomsky & Halle (1968) and Cinque (1993). It is also found in Zubizarreta (1998). However, Haidou (2004/2006) argues convincingly that main stress in Modern Greek is assigned to the rightmost element of the intonation phrase.

(V O S1 **ADV**)
will take the children the Ares tomorrow and will them go to-the park
"Ares will take the children tomorrow and take them to the park"

(62.a) ??afu eksetasi o jiatros tu1 ton kaθena1… (V S O)
after examines the doctor his the each one

(62.b) afu eksetasi ton kaθena1 o jiatros tu1… (V O S)
after examines the each one the doctor his
"After each one is examined by his doctor"

For our analysis, there is actually no need to resort to a specific trigger for the VSO/VOS alternation; v'-to-T movement is operative for exactly the same reasons V-(to-v)-to-T movement is operative in the language[21]. Such a movement—while in principle optional—can be both constrained and promoted by independent factors: for instance, there is no doubt that such a configuration seems to promote the subject as the information nucleus of the utterance when delivered to the PF interface[22]. Similarly—as we have already seen—a VOS order might be chosen instead of VSO in order for certain syntactic configuration to be facilitated. On the other hand, it seems that when the verbal complement is complex (either a complex DP or dependent clause) the VOS orders are disfavoured[23].

Another issue has to do with labelling. According to the object scrambling analyses the object undergoes local movement and ends up in a position above the subject in vP. According to Alexiadou, this position is SpecVoiceP which directly dominates vP, while according to Haidou this position could also be a vP adjunct. These ideas, however—beyond the fact they make the wrong syntactic predictions as we have seen—also face significant theoretical problems. First, the idea that manner (at least) adverbs need to license some sort of φ-features while the derivation proceeds is not indisputable (cf. Bobaljik 1999, Xydopoulos 2001 for a critical view). Similarly, the idea that VoiceP is the projection which hosts the scrambled object is only a stipulation, and beyond that, there is no actual evidence for the burden of work that projection can undertake. Haidou's idea of vP adjunction faces an additional problem: very local movement is problematic in the light of Saito and Murasugi (1993), Bošković (1997) and Abels (2003b,a). In these

[21] However, V-to-T movement in the checking theory of movement ends up being problematic. In the light of Chomsky (1998, 2000, 2001) checking can be established via distant feature-matching. Given this, and given that the operation can not be of a morphological nature (after all, the verb enters the derivation as a full word—the functional heads contain abstract material), we have no actual trigger for such an operation. For related problems and a different view on V-raising cf. Koeneman 2000.

[22] This, however, is the case only when the subject is the rightmost phonological word in the intonational phrase.

[23] Cf. also Alexiadou's (1997) "lightness" constraint.

works an anti-locality condition on movement is proposed according to which no complement can recombine through movement with a projection of its selecting head. According to Abels (2003b) this condition has the following rationale: a head and its complement are in a local relation in the base structure and no distinct relation is established by re-combining the complement with a projection of the head.

A second issue related to labelling has to do with cartographic approaches. According to the cartographic trend, there should always be a one-to-one correspondence between interpretation and position in the tree. Following this line of argumentation it has been proposed (cf. Philippaki-Warburton and also Georgiafentis) that (at least in some of the cases) the VO portion should move to a position high enough in the so-called left periphery which—according to the trend—typically hosts "old", "peripheral" or "topical" information. However, this cannot be the case; consider for instance the utterance in (63):

(63) -kanena neo?
Any news?

-afksise	ta	epitokia	i	emboriki		(V O S)
rised	*the*	*interest*	*rates*	*the*	*commercial (bank)*	

"The Commercial Bank raised the interest rate"

As we have shown elsewhere[24], in such contexts the VOS order constitutes a broad focus domain. Even if the assumption that such a position high enough in the tree is entitled to host this kind of old or peripheral information, the interpretation—intuitively—cannot be old. Even when independent syntactic tests of "oldness" are applied—such as clitic doubling and clitic left dislocation— the results strongly disfavour such an idea[25]. Crucially, our analysis by moving the object alongside the verb to T does not make any prediction as far as its interpretational properties are concerned.

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[24] In preparation "The syntax-Information structure Interface: VSO vs. VOS in Modern Greek"

[25] In particular, the object in VOS in such contexts resists both clitic-doubling and clitic left-dislocation which typically mark a category as old, presupposed or topical.

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