

Greek Clause Structure: Deriving free constituent  
order in Standard Modern Greek

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## **Abstract**

This paper investigates the base structure of clauses in Standard Modern Greek (henceforth Greek) and proposes a system of derivations from movement to account for the free constituent order of Greek in the framework of X-bar theory. As Greek's rich morphology has some bearing on the discussion, section one offers a brief overview of Greek nominal and verbal morphology. Section two proposes a basic clause structure and V to T movement to explain the unmarked VSO word order of Greek. This hypothesis is arrived at by employing theoretical considerations, examining the distribution of main verbs, auxiliaries, and negation, and considering evidence from question formation and subordinate clauses. Section 3 offers an explanation for the permutations of clausal constituent order found in Greek. As background for the discussion, section 3.1 gives grammatically acceptable examples of the possible permutations (SVO, VSO, SOV, OSV, OVS, VOS) for clausal constituent order in Greek, section 3.2 offers a rough characterization of the discourse concept of topicalization, and section 3.3 outlines the discourse circumstances for possible constituent orders. Section 3.4 proposes that Greek employs an additional functional category, topic, and outlines a system of movements to derive Greek's various clausal constituent orders. Section 3.5 examines Greek questions for evidence to support the hypothesis of verb movement to adjoin with the elements in occupied head positions. Section 4 concludes the paper by reviewing the results of the investigation.

## 1. Greek Morphology

Greek is a highly inflected language. Some consequences of Greek's rich morphology have a direct bearing on the foregoing discussions on verb raising and free constituent order. Rather than interspersing throughout the paper small descriptions of morphology at the points of discussion which they are addressed, this section gives an overview of the Greek system of nominal and verbal inflection.

### 1.1 Nominal System and Case Assignment

Greek nouns have a gender feature and are inflected for case and number. Determiners and adjectives are inflected for case, number, and gender to agree with the nouns they modify. If all these inflections were unambiguously phonologically realized there would be 24 distinct forms of the definite article. But the definite article is null in imperative statements and some other combinations of features result in identical forms, so there end up being only 16 forms of the definite article (Holton, 2012). Below is a paradigm for article noun constructions of the masculine noun "guard" (Holton, 2012, 55).

	<i>Sg.</i>		<i>Pl</i>	
Nom.	ο	φύλακας	οι	φύλακες
Acc.	το(ν)	φύλακα	τους	φύλακες
Gen.	του	φύλακα	των	φυλάκων
Voc.		φύλακα		φύλακες

Since case is realized morphologically in the Greek language, a lack of case cannot cause movements of determiner phrases. However, by the same token, since case is not assigned structurally, case considerations cannot place constraints on the movement

of determiner phrases. So, Greek is allowed to have free constituent order, and in fact declarative sentences in Greek can take any of the six permutations of clausal constituent order (VSO, VOS, OVS, OSV, SVO, SOV).

## 1.2. Verb System

Greek verbs are composed of a stem morpheme, a suffix, and a prefix in the past tense. Different verb stems indicate differences in voice and aspect. Different suffixes indicate differences in person and number which agree with the subject. (Holton, 2012). Because of this agreement between subject and verb, Greek allows for null subjects<sup>1</sup> when the subject is pronominal or else understood from the context of the discourse as in (1) below.

(1) έ-γραψ-ε            το.N.ACC.SG    βιβλί-ο  
 PST-wrote-3SG    the                    book-ACC.SG  
 ‘He/she wrote the book.’

Verbs in the past tense have what is termed by traditional Greek grammarians an “augment”. The augment, actually a separate morpheme, is the prefix, “ε” which attaches to the stem to realize past tense (Holton, 2012). So, for instance the English active voice completed aspect past tense sentence “Helen wrote John”, and active voice imperfect aspect past tense sentence “Helen was writing John”, express the same ideas respectively as the Greek sentences (2) and (3) below (differing stems are highlighted red).

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<sup>1</sup> Greek has several characteristics of pro-drop languages which are allowed by its rich morphology. As well as null subjects and free word order, Greek also has the ability to violate the “that” trace filter as shown in (\*) below. (Tsimpli)

(\*)    που        είπ-εξ        ότι    έγραψε    το    βιβλί-ο  
 who.nom    said-3.SG    that    wrote    the    book-ACC  
 ‘Who did you say that wrote the book.’

(2) ο άνθρωπ-ος έ-γραψ-ε το  
 The.M.NOM.SG man-NOM.SG PST-wrote-3.SG. the.N.ACC.SG  
 βιβλί-ο  
 book-ACC.SG  
 ‘The man wrote the book.’

(3) ο άνθρωπ-ος έ-γραφ-ε το  
 The.M.NOM.SG man-NOM.SG past-wrote.IMP-3.SG the.N.ACC.SG  
 βιβλί-ο  
 book-ACC.SG  
 ‘The man was writing the book.’

The Greek verb system has one auxiliary “έχ-ω” which is used to express the perfect aspect and is analogous to the English auxiliary “has”. In the past tense the auxiliary’s augment is realized as a diphthongization of the initial vowel of the stem. So, “είχ-ε” is approximate to the English auxiliary “had” (Holton, 2012). Therefore, changing the aspect of (2) and (3) above to perfect, we have (4) and (5) below.

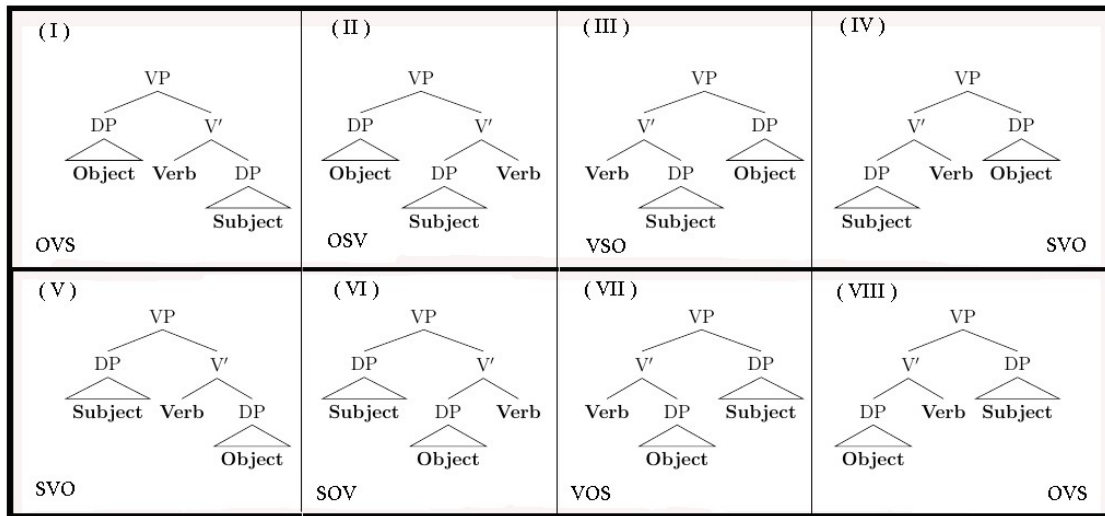
(4) ο άνθρωπ-ος έχ-ει γράψει  
 The.M.NOM.SG man-3.SG has-3.SG written  
 το βιβλί-ο  
 the.N.ACC.SG book.ACC.SG  
 ‘The man has written the book.’

(5) ο άνθρωπ-ος ε-ίχ-ε γράψει  
 The.M.NOM.SG man-3.SG PST-had-3.SG written  
 το βιβλί-ο  
 the.N.ACC.SG book.ACC.SG  
 ‘The man had written the book.’

## 2. Verb Raising and Basic Clausal Structure

At the onset of this discussion on verb raising in Greek, it’s important to state a few assumptions. Let’s assume that Greek has X-bar structure, and that for verbs which

must occur with a subject and object, both the subject and object originate within the verb phrase as internal arguments to receive theta roles (VPISH) (Carnie, 2012). These assumptions leave eight different options for the D structure of a Greek verb phrase which are diagrammed in (I -VIII) below:



## 2.1 Theoretical Motivations for V to T Movement

The chart above presents too many options for the structure of a Greek transitive verb phrase. Some theoretical considerations can help narrow down the list of candidates. For instance, it seems a safe assumption that the unmarked word order of a language is the word order which involves the least movement. The unmarked word order of Greek is VSO<sup>2</sup>. As noted in section one, due to the fact that case is realized morphologically in

<sup>2</sup> There is some disagreement as to whether the unmarked word order of Greek is SVO or VSO (Tsimplici, 1990, Deligianni 2011). This disagreement seems to be definitional as opposed to having substantial bearing on linguistic theory. Authors who report Greek's unmarked word order as SVO cite the facts that SVO is the most commonly occurring form of a declarative sentence and that SVO order is the most natural form for an utterance to take under general discourse circumstances. Authors who report Greek's unmarked order as VSO cite the fact that in the initiation of a conversation when, you might say, the discourse circumstances are "null", and *all* constituents of a sentence denote new information, VSO is the natural form for an utterance to take. This definitional ambiguity is understandable when one considers that for English, coincidentally, the two definitions happen to coincide. For instance in English it is natural to initiate a discourse with a SVO sentence but not a passive OV + prepositional phrase construction. Assuming the disagreement over unmarked word order is in fact definitional we will accept VSO as the unmarked word order of Greek, where "unmarked word order" is defined as the order which occurs when

Greek, there is no obligatory movement of the subject or object to receive case due to a lack of case assignment. So, in the unmarked order the subject and object should maintain their relative positions, allowing only the possibility of verb movement. So we might consider (III-VI) as options for the D structure of the verb phrase.

If the verb does not raise to T to receive tense then the unmarked order would be the base order and (III) would be the only possibility for the D structure of the verb phrase given our assumptions. However, it is commonly assumed that subjects are base generated in a specifier position (Carnie, 2012) and this excludes (III) and (IV) from consideration. Having only (V) and (VI) to consider strongly suggests that verb movement to T may account for the unmarked VSO order.

## **2.2 Evidence from the Auxiliary and Negation**

There are other reasons for proposing V to T movement in Greek. In verbal constructions containing the auxiliary “έχ-ω”, tense is realized on the auxiliary and not the main verb. As shown in (1-4) above, in constructions containing an auxiliary the main verb does not receive an augment whereas in verb constructions absent an auxiliary the main verb does receive an augment. This suggests the hypothesis that verbs receive tense realized as an augment when they move to T, and so a main verb cannot move to T to receive tense when T is occupied by an auxiliary.

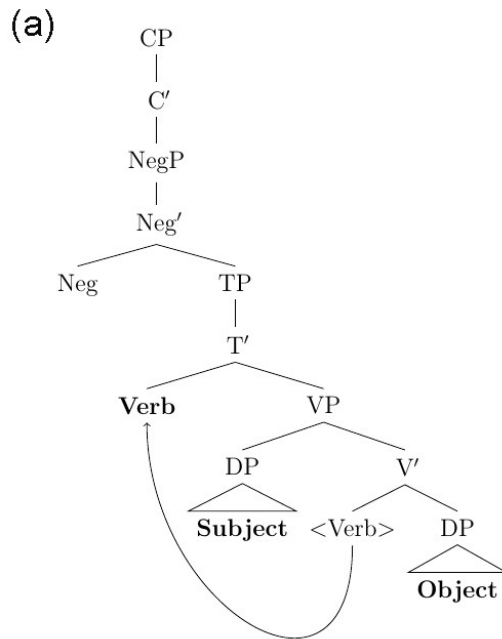
Verbal negation in Greek is syntactically fixed. The negative particle “δεν” always precedes an auxiliary which always precedes the main verb. So, on the one hand there is no evidence from negation that contradicts the V to T hypothesis and on the other hand negation is suggested as above T in the tree structure.

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all constituents of a sentence denote new information.



It has no bearing on this analysis whether the verb phrase is left headed or right headed so let's assume a left headed verb phrase. Then we may use (V) as our model for the basic structure of the Greek verb phrase. All the considerations so far suggest the base clausal structure shown in (a) below.



### 2.3 Evidence from questions and subordinate clauses

The evidence for verb raising from Greek questions is indirect. The argument goes as follows. If there is nothing that bars V from moving to T to receive tense then it will. Verbal head to head movement is cyclic so if V moves above T then V must be able to move to T. Evidence from Greek questions suggests that V moves above T. Therefore, evidence from Greek questions suggests that V moves to T to receive tense.

Now let's look at the data that suggests V moves above T in question formation. As shown in (6) below, Yes/No questions in Greek front the verb (Holton, 2012). This suggests the idea that the verb moves to head C in Yes/No question formation.

- (6) έγραψε ο άνθρωπος το βιβλί-ο;  
 wrote.Q the man-NOM the book-ACC

‘Did the man write the book?’

In embedded and main clause constituent questions SV order isn’t possible (Tsimplici, 1990), as is shown by the ungrammaticality of (7) and (8) below.

(7) \* τι ο άνθρωπος γράψει;  
what.ACC the man.NOM write  
‘What did the man write?’

(8) \*η γυναίκα αναρωτιέται τι ο άνθρωπος έγραψε  
the woman.NOM wonders what the man.NOM wrote  
‘The woman wonders what the man wrote.’

A verb moving to head C in wh-question formation and the questioned constituent moving to the specifier of C would explain the ungrammaticality of (7) and (8). In this case there is no position for the subject to move to precede the verb (Tsimplici, 1990). By the argument at the beginning of this section, this provides more evidence that V moves to T to receive tense.

This evidence from questions is also evidence that V does not move to C to derive the unmarked VSO order as is the case in Irish. As well, VSO and VOS orders are possible in almost all Greek subordinate clauses. Since C is ostensibly filled by a complementizer in these cases V does not move to C to achieve verb fronted order in a subordinate clause. This suggests that V does not move to C to achieve verb fronted order in main clauses as well (Tsimplici, 1990) which is consistent with our earlier suggestion (tree (a)) for a basic structure of Greek clauses.

### **3. Clausal Constituent order**

Now that we’ve established a working hypothesis for the basic structure of Greek clauses we can begin to address the question as to how Greek’s various constituent orders are derived in the framework of X-bar theory. Due to the case inflection of the Greek noun system, constituents of the main clause can occur in any order. There are however

different pragmatic contexts in which particular clausal constituent orders are deemed appropriate.

### 3.1 Permutations of Constituent Order

Sentences (9-14) below are all translated as “The man wrote the book.” Different word orders correspond to different discourse circumstances described in section 3.3.

#### (SVO)

(9) ο                      άνθρωπ-ος              έγραψ-ε  
the.M.NOM.SG    man-NOM.SG    PST-wrote-3.SG  
  
το                      βιβλί-ο  
the.N.ACC.SG    book-ACC.SG

#### (SOV)

(10) ο                      άνθρωπ-ος  
the.M.NOM.SG    man-NOM.SG  
  
το                      βιβλί-ο              έ-γραψ-ε  
the.N.ACC.SG    book-ACC.SG    PST-wrote-3.SG

#### (OSV)

(11) το                      βιβλί-ο  
the.N.ACC.SG    book-ACC.SG  
  
ο                      άνθρωπ-ος              έ-γραψ-ε

the.M.NOM.SG man-NOM.SG PST-wrote-3.SG

**(OVS)**

(12) το βιβλί-ο έ-γραψ-ε  
the.N.ACC.SG book-ACC.SG PST-wrote-3.SG  
ο άνθρωπ-ος  
the.M.NOM.SG man-NOM.SG

**(VSO)**

(13) έ-γραψ-ε ο άνθρωπ-ος  
PST-wrote-3.SG the.M.NOM.SG man-NOM.SG  
το βιβλί-ο  
the.N.ACC.SG book-ACC.SG

**(VOS)**

(14) έ-γραψ-ε το βιβλί-ο  
PST-wrote-3.SG the.N.ACC.SG book-ACC.SG  
ο άνθρωπ-ος  
the.M.NOM.SG man-NOM.SG

### 3.2. Topicalization

In order to understand how these separate constituent orders, which are influenced by factors of discourse, are syntactically realized in Greek, we must elucidate the discourse concepts of topic and comment. To this end we offer the following quote from *Greek*. by David Holton, et. al.

“The *topic* is usually some entity which has already been introduced into the discourse and is thus something or somebody known, while the *comment* is saying something new about the topic.” (pg. 522)

As the above quote implies, being an entity which has already been introduced to the discourse, or something or somebody known, does not entail that a constituent will be the topic of a sentence. To further elucidate the concept of topic I’ll offer a rough characterization involving verbs, subjects, and objects which I hope serves the purpose of this paper. When a person initiates a discourse with some piece of unanticipated information by stating a sentence such as (i) “Hitler destroyed Europe”, the sentence isn’t divided into topic and comment as all the constituents of the clause are newly introduced into the discourse. However, if a conversation is being had on the subject matter of say catastrophes, then the same semantic content imparted by (i) may be conveyed in English by “Destruction was wrought on Europe by Hitler.” Here the topic is “destruction” and the comment is “was wrought on Europe by Hitler”. In this case the topic of the clause is verbal but in English for a verbal idea to be topical the verb must be converted into a noun. Now suppose that people are having a conversation about Hitler’s exploits. Then when someone states (i), the topic of the sentence is “Hitler” and the comment is “destroyed Europe”. Further, suppose that people are having a conversation about

European history. Then, the same semantic content conveyed in (i) may be stated as “Europe was destroyed by Hitler.” And in this case “Europe” is the topic and “was destroyed by Hitler” is the comment.

### **3.3. Discourse Conditions**

We now briefly, and roughly, explain the discourse conditions under which the six different permutations of clausal constituent orders are acceptable in Greek discourse

**VSO:** This word order is acceptable in circumstances where an entire sentence introduces new information into the discourse. So, a VSO sentence might follow a comment like “Have you heard the news?”

**SVO:** The subject is part of background knowledge for participants in the conversation. This is the most common word order in Greek and it has been stated (Tsimpli) that this may be a coincidence in that most often the topic happens to be the subject of a sentence.

**VOS:** The verb and object constitute part of the background knowledge. Verb fronting order most commonly appears in constructions where either the verb is intransitive, the object is somewhat predictable from the verb as in verbs like “wore”, and “painted”, or the verb and the object are idiomatic constructions like “kicked rocks” in English.

**OVS:** This happens most often when the subject is newly introduced into the discourse, and the object has already been introduced.

**OSV/SOV:** These constructions are traditionally thought of as two topic constructions where the subject and object have both been introduced into the conversation and the verbal action is new information. (Holton, 2012)

From this survey of discourse circumstances it seems that for Greek, as in most languages, the topic is generally found in sentence initial position.

### **3.4. Deriving Word Orders**

In order to develop a system of movements to account for the various clausal constituent orders, let's review our tentative conclusions about clausal construction thus far. First, due to theoretical considerations, evidence from negation and auxiliary constructions, and evidence from Greek questions, we decided that verbs raise from V to T to receive tense and proposed tree (a) as the basic clausal structure of Greek. Second, from the evidence of free constituent order in subordinate clauses, and for movement of V to C in Greek question formation, we decided that verbs do not generally move from V to C to achieve verb fronted word order in declarative sentences. Lastly, we saw that the topic is usually at the beginning of the sentence, as is evident from the discourse conditions of the various constituent orders. These considerations have led scholars such as Chomsky, Tsimpli, and Philippaki to posit an additional functional category, Topic, which is between C and T in the tree hierarchy (Tsimpli, 1990).

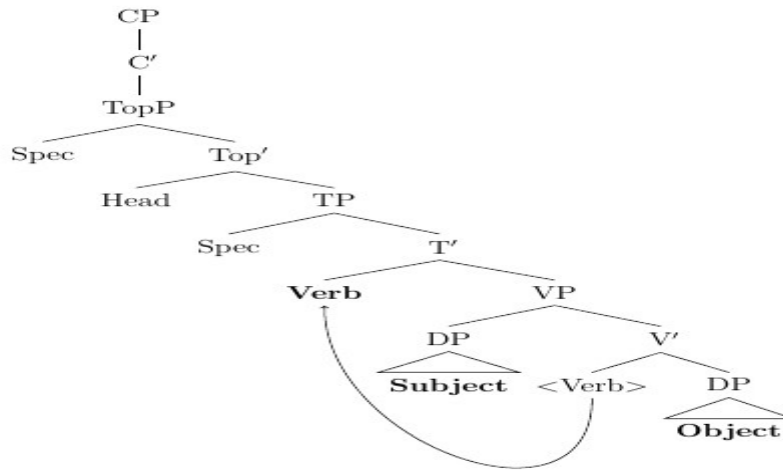
Assuming the additional functional category of Topic between T and C we may account for the permutations of clausal constituent order by movement to positions in TopP by verbal heads and argument phrases<sup>3</sup>. VSO, the unmarked word order found in

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<sup>3</sup> For a different analysis of free constituent order using topic phrases see Tsimpli, 1990.

sentences without a topic, may be accounted for by V raising to T for tense, with no movement to TopP as in (b) below.

(b)

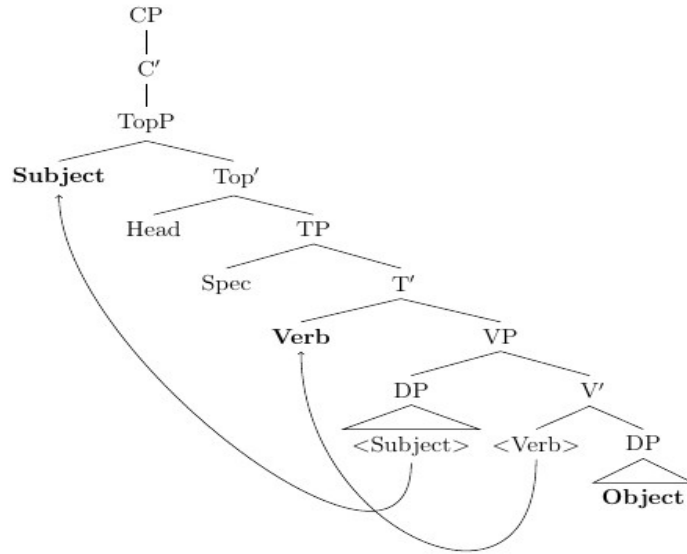


**VSO**

In constructions where the subject or the object is the topic of a sentence (SVO, OVS) the subject or object DP may move to SPECTop to get topic status as in trees (c) and (d) below.

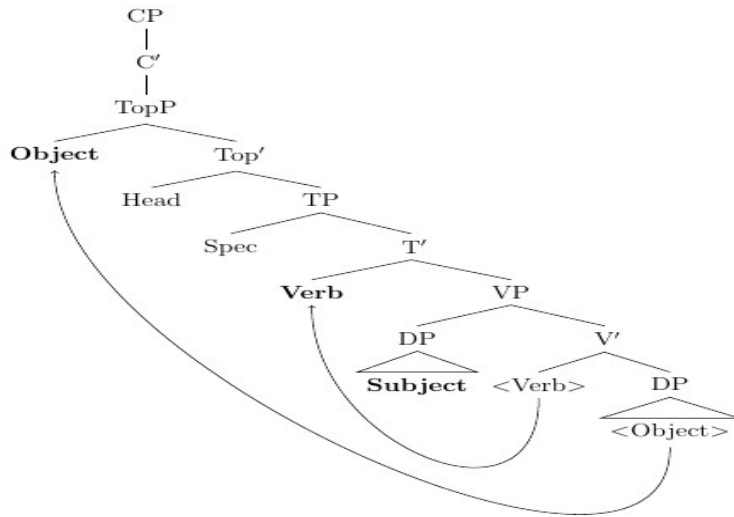


(c)



(d)

SVO

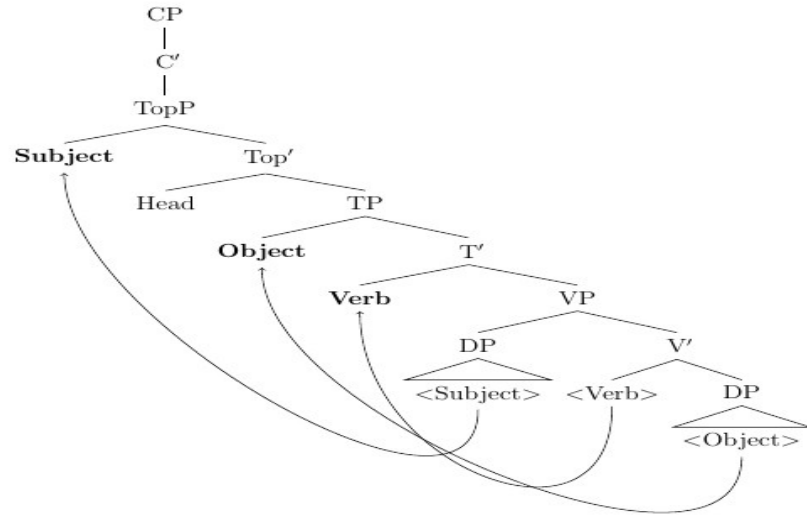


OVS

In the case of two topic constructions (OSV, SOV) we might suggest that the subject and object DPs move to SPEC Top and SPEC T respectively to achieve SOV

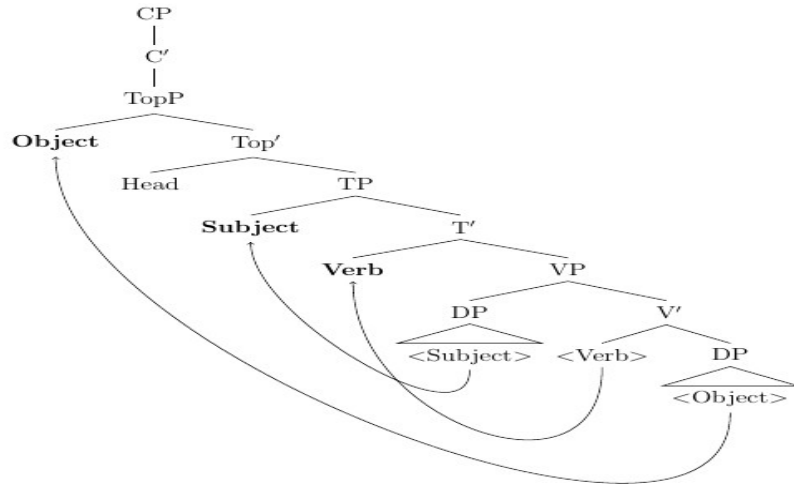
order as in (e) below, or vice-versa to achieve OSV order as in (f) below, to realize the topic feature.

**(e)**



SOV

**(f)**



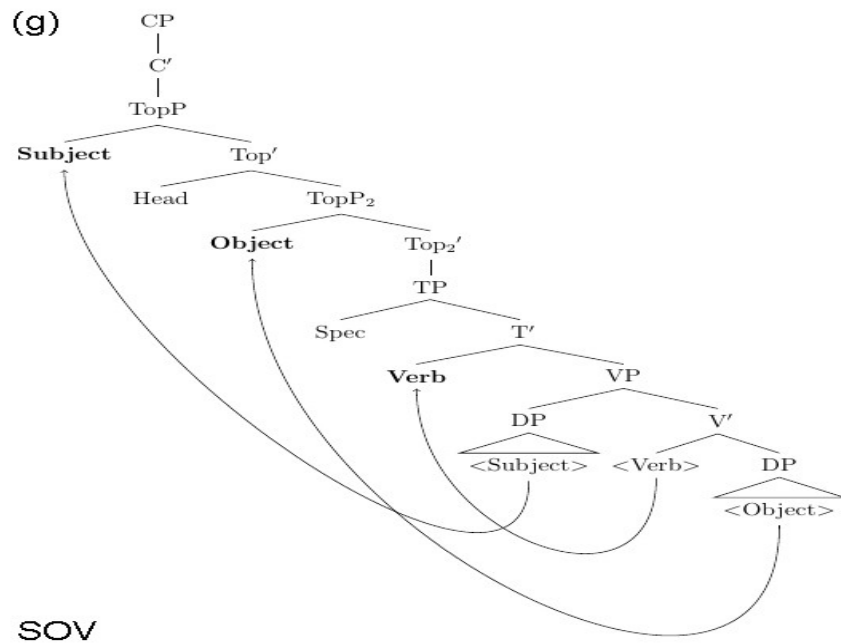
OSV

The above proposals for the derivation of OSV and SOV are not however feasible. Since NegP is above TP (see tree (a) ), this proposal predicts the impossible sentence (15)

below as grammatical.

- (15) \* το βιβλί-ο            δεν ο άνθρωπος    εγράψε  
 the book.ACC        neg the man.NOM    wrote  
 ‘The man did not write the book.’

In order to avoid this prediction, in the case of OSV/VOS, two topic constructions, we propose the layering of two topic phrases shown in (g) below:



In the case of a verbal/object topic constructions (VOS) the verb may move to head TopP and the object may move to SpecTP as in (h) below. However, (16) below, with negation following the verb, is decidedly ungrammatical.

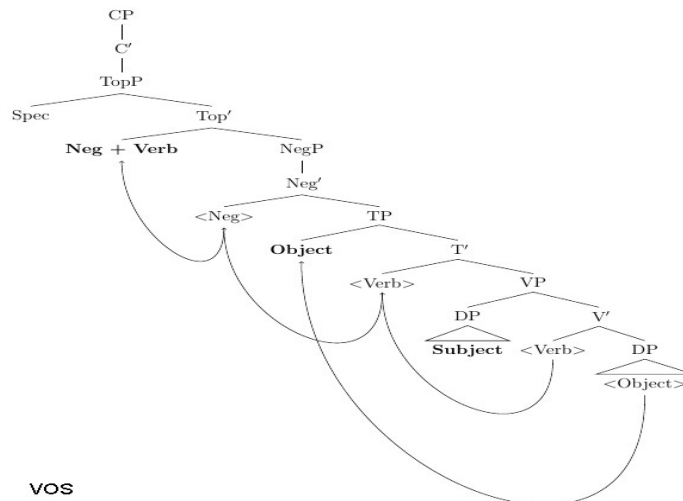
- (16) \*έ-γραψ-ε            δεν    το                    βιβλί-ο  
 PST-wrote-3.SG    neg    the.N.ACC.SG    book-ACC.SG  
 ο                            άνθρωπ-ος

the.M.NOM.SG man-NOM.SG

‘The man did not write the book.’

In response to this data, we propose that the movement from V to Top is cyclic so the verb stops at all intervening head positions, adjoining with elements in those positions as it moves up the tree. So, this derivation avoids the difficulty for two topic constructions of an intervening Neg as the verb collects Neg as it moves to head the topic phrase. Section 3.5 presents more evidence for this cyclic, aggregating movement in the cases of entire verbal complexes (auxiliary, future particle, and verb) moving to the front of a clause in the formation of questions.

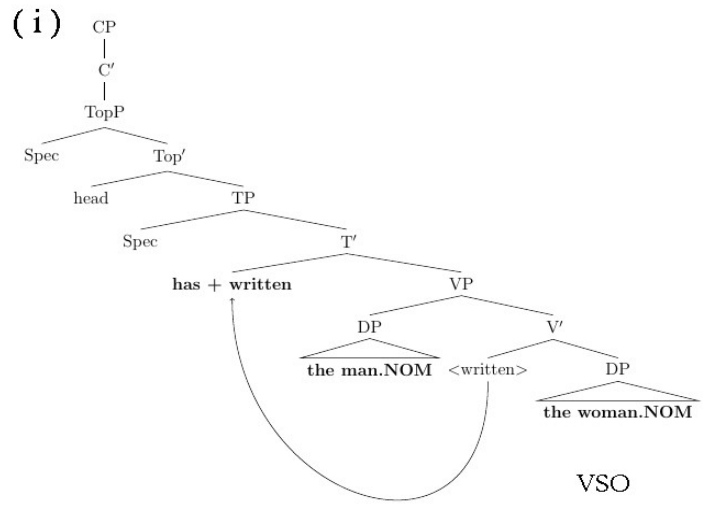
**(h)**



While the structures proposed account for all the permutations of clausal constituent order there still remains one faulty prediction. According to the analysis above, in a sentence with no topic, the subject doesn't move. So, for a no topic sentence with an auxiliary verb construction, since T is filled the main verb remains in place as well and we end up with the impossible sentence (17) below.

- (17) \*  $\emptyset$ -έχ-ει                    ο                    άνθρωπ-ος                    γράφει  
 PRS-Has-3.SG   the.M.NOM.SG   man-NOM.SG   write.PRF
- το                    βιβλί-ο  
 the.N.ACC.SG   book-ACC.SG
- ‘The man has written the book.’

A possible solution is that V moves into T regardless if T is filled, and attaches to whatever is in T as in (i) below. In this case, although the verb moves to T it does not receive tense as the auxiliary has already received the tense from T.



We could motivate such a movement if we propose that the auxiliary is an affixal element. In this case if V doesn't move to T the auxiliary is stranded which explains the ungrammaticality of (17). In any case the hypothesis that the verb can move into T and adjoin to an auxiliary is supported by evidence for movement in Greek questions which we will outline in section 3.5 below.

### 3.5. Further Evidence for Aggregation

The discussion above has shown that the **auxiliary + verb** constructions and **negation + verb** constructions behave as constituents. That is, other elements such as subjects and objects<sup>4</sup> cannot come between negation and the verb or between the auxiliary and the verb. This is true in general of all complex verb expressions, including

<sup>4</sup> This is true excepting the case of clitic object and indirect object pronouns which always directly precede the verb.

modals and future tense constructions. So, neither subjects nor objects may come between any elements of a sequence such as **negation + future + auxiliary + verb** (Holton, 2012) as in (19) below (a \* corresponds to an impossible position for a subject or object)<sup>5</sup>.

(19) ο άνθρωπος δεν θα είχε γράψει το βιβλίο  
 The man not \* will \* have \* written the book  
 ‘The man will not have written the book.’

As this is true for all constituent orderings we have proposed that the verb moves to intervening head positions and adjoins to the elements found therein. As we saw in section 2.3, Yes/No questions in Greek front the verb. In more complex questions involving the auxiliary, the future particle, or the subjunctive particle, the entire verbal complex is fronted (Holton, 2012) as in (19) and (20) below.

(19) έχει γράψει ο άνδρας τη γυναίκα;  
 has written.Q the man.NOM the woman.ACC  
 ‘Has the man written the woman?’

(20) θα έχει γράψει ο άνθρωπος η γυναίκα;  
 Will have written the man.NOM the woman.ACC  
 ‘‘Will the man have written the woman?’’

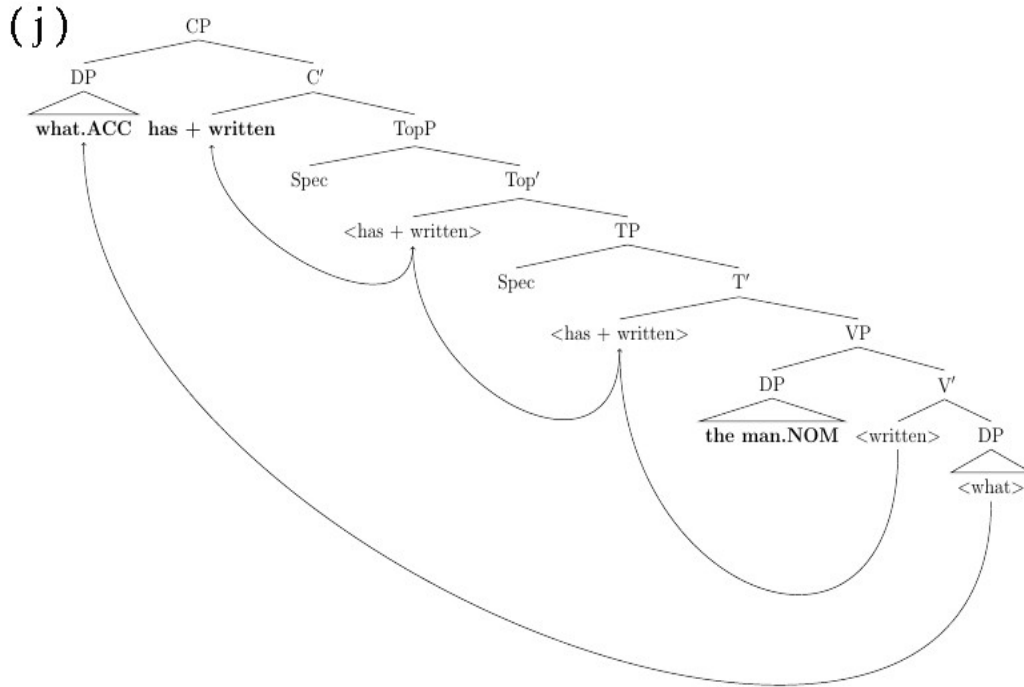
From the evidence given in section 2.3 we proposed that in question formation the verb moves to head C and in the case of wh-questions the questioned constituent moves to the specifier position of C. Under this analysis, in the case of complex verb constructions involving the auxiliary, the subjunctive particle, or the future particle, the verb moves to each intervening head position collecting elements along the way as in (j) which diagrams (21) below:

(21) τι έχει γράψει ο άνθρωπος;  
 what has written the man.NOM

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<sup>5</sup> It should be investigated whether adverbial constructions can occupy these positions. I have not found an example of this so far.

‘What has the man written?’



The verb movement and aggregation proposed for question formation is consistent with our earlier hypotheses that V always moves to T and aggregates to any elements found there and that V aggregates with negation as it moves to head the topic phrase in VOS constructions.

#### 4. Conclusion

Beyond a brief discussion of Greek morphology, the discourse concepts of topic and comment, and the discourse circumstances for Greek word orders, this paper investigated the base structure of Greek clauses, and movements for deriving various constituent orderings and the word order of questions. We proposed that V moves to T from some basic theoretical considerations, the fact that VSO is the unmarked word order of Greek, a lack of evidence to the contrary, and evidence from question formation that V is able to move above T. We also proposed that the base word order of Greek is SVO

before the canonical movement of V to T which derives the unmarked VSO order. We further proposed that V always moves to T. In the case of constructions absent an auxiliary V must move so that tense is not stranded and in auxiliary constructions V must move so that the auxiliary is not stranded. This hypothesis was strengthened by the evidence from question formation which seemed to indicate that questions are formed by moving V to C, with V stopping to pick up any other elements of the verbal complex such as the auxiliary, the future particle, or the subjunctive particle along the way. The last proposal to enumerate is the suggestion that an additional functional category of Topic for Greek lends the structure to derive all the clausal constituent orders when objects, verbs and subjects move to positions in a Topic Phrase in order to receive the topic feature.

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