Focus in Greek

Mary Baltazani

June 18, 1999

1 Introduction

In studies of the Focus phenomenon, it is generally assumed that a constituent bearing a [+focus] feature is interpreted at LF as a quantified expression. Focus Raising (FR), a movement analogous to Quantifier Raising (QR), was first assumed in Chomsky (1976), because focused NPs in English behave similarly to quantified expressions with regard to the possibilities of anaphora, in contrast to their non-focused counterparts. Consider the contrast between (2) and (3):

(1) The woman he$_i$ loved betrayed everyone$_{*i}$.

(2) The woman he$_i$ loved BETRAYED John$_i$.

(3) The woman he$_i$ loved betrayed JOHN$_{*i}$.

In (1), *he* cannot be bound by *everyone*. In (2), *he* can corefer with *John*, but in (3) it can not. The difference between (2) and (3) and the similarity of (3) to (1) suggest that the focused expression in (3) has a representation at LF similar to that of (1): QR applies for (1) at LF, and FR applies for (3) at LF.

The strongest evidence for focus movement comes from languages like Hungarian, where such movement, unlike English, is overt : a focused constituent has to appear before the verb (Brody (1990), Horvath (1995), Brody (1995), Kiss (1996), Szabolcsi (1994, 1996) are the most recent studies). Greek focused phrases behave analogously to Hungarian, in that a focused phrase has to move to the left periphery of the clause.

The general cross-linguistic problem is that focus movement appears to be obligatory in some languages (Hungarian, Greek) but not in others (English). Also in languages like Hungarian and Greek where we see focused phrases moving overtly to some position to the left of their normal argument position,

there are instances of focus-in-situ, where focused phrases seem not to have moved at all from their canonical argument position. In a restrictive grammar which prohibits covert or optional movement, these facts present us with a puzzle, since they do not allow us to maintain a consistent characterization of focus as a phenomenon which involves movement. If focus movement is overt and obligatory, then why do focus phrases only move some of the time?

So far, analyses of focus constructions have dealt with this puzzle by postulating two different structural positions for foci: one in the preverbal field where preposed or so called 'contrastive' foci move to, and another in the postverbal field where non-preposed or 'information' foci appear. The problem with this approach is that it doesn't account well for all empirical facts and also that it provides no motivation for the postulated structural dichotomy.

The solution I propose is that even in cases where focused phrases appear not to have moved, in fact they have but their movement is obscured: Let us say that the focus phrase is represented by B in (4) and the rest of the clausal material by A. The original AB order first changes to BA after focus movement to a functional projection (FP) in the left periphery, and changes back again to AB after the non-focal material moves to the left of the moved focus phrase. I argue that the difference between preposed focused phrases and apparent-focus-in-situ phrases is that whereas the latter are derived by going through all three steps in (4), the former only go through the first two steps. (Details on the motivation for these movements and the positions where the moved constituents end up are provided later.)

(4) [A B] $\rightarrow$ [B_i [A t_i]] $\rightarrow$ [A t_i]$_j$ [B_i [t_j]]

This solution is appealing because it treats focalization uniformly, deals with several word-order variation problems without resorting to unmotivated optional movements and accounts well for a wide range of empirical facts.

A further word-order problem which arises in Greek and is handled well by my analysis concerns the linear position of *mono* 'only' relative to focus and the rest of the clause. *Mono* can appear immediately before, immediately after the focused phrase or clause-finally. I propose on the one hand that the difference between the pre-focal and post-focal order of *mono* is the result of the focus phrase pied-piping *mono* with it in its movement to FP or not, as we will see. On the other hand, clause-final *mono* orders are the result of the focus phrase pied-piping the whole clause to FP with it and leaving *mono*

behind.

Furthermore, these derivations account well for the scoping possibilities of *mono* in the several positions it appears. In its clause-final position especially, there is a scope ambiguity: *mono* can scope either over the focused DP or over the whole clause. I argue that this ambiguity is a matter of how big a constituent serves as the restriction of *mono*, and consequently, how big a constituent moves to the functional projection reserved for restrictors (RestrP).

The analysis just sketched is not entirely original of course. I took advantage of the theoretical assumptions about syntactic movement presented by Richard Kayne in a series of lectures at UCLA in January, 1996, and a lot of subsequent work at the UCLA Linguistics Department that these lectures inspired (Koopman (1996, 1997), Koopman & Szabolcsi (1997), Pearson (1997), Androutsopoulou (1997)). These general principles are first, that no covert or optional phrasal movements are permitted by UG —rather, a combination of overt movements, including heavy pied-piping and remnant movements, carries the load of accounting for the empirical facts— and second, that all phrasal movement to the left periphery is necessary to satisfy spec-head agreement requirements between a functional head and the phrase undergoing movement. Implementing the tools of pied-piping and remnant movements to analyze the specific word-order problems arising in Greek, as well as determining the functional heads which drive movements is my contribution. The analysis I present here is similar to the analysis of word order phenomena in Kayne's (1997/1998) paper "*Overt vs Covert Movement*"; the two analyses were developed independently.

Five key issues are addressed in this thesis: the prohibition against covert movement, the characterization of focus and topic, the distinction between contrastive and information focus, the syntactic representation of scope relations, and the need for an articulated CP field. Here is a brief presentation of my assumptions regarding these key issues:

1.1 No covert movement

Covert movement is not allowed by UG. As already mentioned, it is replaced by a combination of overt movements. Word-order variation can be accounted for if we assume first, the existence of functional projections which attract

large constituents undergoing pied-piping, and second, remnant movements (Koopman (1996, 1997), Koopman & Szabolcsi (1997), Pearson (1997), Androutsopoulou (1997)).

1.2 The notions of focus and topic

Traditionally, when the information content of a proposition is concerned, clauses have been divided into either *topic* and *comment* or *focus* and *presupposition*, or *focus* and *ground*, or *focus* and *focus-frame*. Topic is typically a preposed element expressing old information, and comment is the rest of the clause introducing new information predicated of the topic. Focus introduces new information, while the rest of the clause expresses given information.

Since focused and topicalized constituents appear at the left periphery of clauses, I assume there are focus and topic projections, FP and TopP respectively, which host such constituents. For reasons that will become clear later on, I will adopt Tsimpli's proposal that focusing involves movement, whereas topicalization does not (i.e., topics are base generated in TopP). I will also present evidence suggesting that clitic doubling is a phenomenon closely tied with topicalization and focusing, as has already been suggested for Italian (Cinque (1990), Rizzi (1995)).

1.3 Contrastive vs information focus

Two possible positions for foci have been observed in many languages, among them Hungarian and Greek: preceding the verb or following it. According to my analysis, the focused phrase moves to the spec of FP in both cases; the difference in linear order arises because in the post-verbal focus order there is further movement of FinP (a remnant containing the verb) to the left of FP, to a projection I call GivenP; this movement topicalizes FinP as a result.

Apart from the linear order difference these two constructions also have different interpretation: preposed focused elements have a contrastive meaning (5), which is not available when the focused element appears post-verbally (6).

(5) TI MARIA ide o Giannis
Mary saw John
'It was MARY that John saw (and nobody else)'

(6) o Giannis ide TI MARIA
'John saw MARY (and maybe others, too)'

The contrastive meaning of (5) has been characterized as the 'exclusion by identification' or 'exhaustive identification' (EI) meaning (see Kenesei (1986), van Leusen (1993), Szabolcsi (1994), Kiss (1996), and Horvath (1997)). Informally, an *Exclusive Identification* (EI) operator operates on a set of entities, identifying the subset for which the predicate holds (expressed by the focus), and excluding the complementary set for which it does not.

One of the tests proposed in the literature to determine whether a constituent has contrastive/EI meaning or not was devised Szabolcsi (1981) for Hungarian, but it works just as well for Greek and English. The diagnostic test involves a pair of sentences: the first sentence contains a focus consisting of two coordinate DPs, and the second one differs from the first in that one of the coordinate DPs has been dropped. If the second sentence is not among the logical consequences of the first, the focus expresses exclusion by identification. Compare:

(7a) STO GIANNI KE STI MARIA agorasa padeloni
to John and to Mary bought-1s trousers
'It was FOR JOHN AND MARY that I bought trousers'

(7b) STI MARIA agorasa padeloni
'It was FOR MARY that I bought trousers'

(8a) Agorasa padeloni STO GIANNI KE STI MARIA
bought-1s trousers for John and to Mary
'I bought trousers FOR JOHN AND MARY'

(8b) Agorasa padeloni STI MARIA
'I bought trousers FOR MARY'

The sentence in (7b) is not a logical consequence of (7a); on the contrary, (7b) contradicts (7a), because the (b) sentence says that the only person I bought trousers for is Mary whereas the (a) sentence says that I also bought trousers for John. On the other hand, (8b) is a logical consequence of (8a).

In summary, there are two focus constructions assigned distinct interpretations. In descriptive terms, preposed foci have contrastive interpretations, non-preposed ones do not. Past analyses (see Kiss (1996) and references therein) have treated this dichotomy as evidence for two distinct structural FP positions, one in the pre-verbal field, called "contrastive" focus, and one in the post-verbal one called "information" or "presentational" focus. There is an alternative way of looking at these facts, though, to which we turn now.

1.3.1 The EI operator

Horvath (1997) proposes that it is the exhaustive identification (EI) operator which is syntactically encoded, not focus. Focus is reduced to a single phenomenon, (universally encoded only in phonology) whether a language displays overt movement of focus like Hungarian and Greek or focus-in-situ like English non-cleft cases. The difference between Hungarian overt focus movement and English focus-in-situ is that in the former case the EI operator triggers the movement and gives the contrastive interpretation, whereas in the latter case there is no EI operator present, hence no movement and no special interpretation for the focus. In other words, contrastive focus sentences have both Focus and an EI operator, whereas information focus sentences have just Focus.

Here is an outline of the algorithm for deriving focus movement according to Horvath's proposal: In languages that display overt focus movement, an EI-operator feature is attracted to the specifier of a functional projection EIP, triggering movement. The EI-operator requires the presence of prosodic focus within its c-command domain and it is merged as the spec of DP, thereby pied-piping the entire DP with it in its movement to the specifier of EIP.

A compelling reason for assuming an EI operator not mentioned in Horvath (1997) is that it makes possible a consistent interpretation both for clauses which contain free focus and those that contain both *only* and focus:

As Szabolcsi (1994) notes, free focus clauses (i.e., clauses not containing *only*) are true under the same circumstances as *only* clauses, but they are false under different circumstances. To illustrate her point with Greek examples, in a sentence with free focus like (9a), *Ti Maria ide o Giannis* presupposes that John saw someone and asserts that it is Mary. In (9b), *Mono ti Maria ide o Giannis* presupposes that John saw Mary and asserts that he saw nobody else. Both sentences are true when the only person that John saw is Mary. On the other hand, (10a) *Den ine i Maria pu ide o Giannis* presupposes that John saw someone and asserts it was not Mary, whereas (10b) *Den ine mono i Maria pu ide o Giannis* presupposes that John saw Mary and asserts he saw someone else, too. That is, (10a) is false if John saw Mary, whereas (10b) is true if John saw Mary.

(9a) TI MARIA ide o Giannis
Mary-acc saw-3s John-nom
'It was MARY that John saw'

(9b) mono TI MARIA ide o Giannis
only Mary-acc saw-3s John-nom
'It was only MARY that John saw'

(10a) den ine I MARIA pu ide o Giannis
not is Mary that saw John
'It was not MARY that John saw'

(10b) den ine mono TI MARIA pu ide o Giannis
not is only Mary-acc that saw-3s John-nom
'It was not only MARY that John saw'

The questions arising from these observations are the following:

First, if we maintain that exhaustivity is present in both free-focus-sentences like (9a) and *only*-sentences like (9b), then what is the semantic contribution of *only*? That is, if the exhaustivity meaning ('Mary and no-one else') is contributed by focus, it should be so for both sentences, which means it is difficult to determine what the semantic contribution of *only* is in (9b) if focus is already exhaustive. Second, how does the presence of *only* influence the semantic role of focus and ground/presupposition/focus-frame play in (10a and b) so that the two sentences mean different things?

We get better results if we assume that exhaustivity in free-focus sentences is not the semantic effect of focus itself, but that of a silent operator like EI. In the absence of *only*, preposed focus phrases will get the contrastive meaning from EI, and EI will be absent when *only* is present[1]. As for sentences with information focus (English in-situ focus, or Hungarian/Greek non-preposed focus) all we need to say is that the EI operator is absent in these cases and because of this absence, focus does not receive contrastive interpretation.

In my analysis, I will partially adopt Horvath's proposal about the structure of free-focus sentences: I will assume the presence of an EI operator which is responsible for the contrastive interpretation of preposed foci — whenever this operator is absent, foci are non-contrastive (information); however, I will not dispense with the need for FP as a functional projection. As will become clear in the analysis, the head of FP triggers movement of *all* focused phrases, contrastive and non-contrastive alike, to its specifier in order to check a [+focus] feature. Apart from the theoretical need for such a (phonologically null) Focus head in the analysis of and the empirical data it accounts for in Greek, there is also empirical justification for it in languages

[1]A discussion about the way *only* combines with focus and ground can be found in section 1.4 below.

with focus morphemes, that is, overt Focus heads[2].

1.4 Only

The interpretation of an expression that contains scope-bearing elements —like negation, quantifiers (*every, some*) or quantifying adverbs (*always, sometimes*)— requires a way to determine their scope.

Only, as a quantifying adverb, is a scope bearing element, in particular a two-place operator, which can be seen as a relation taking arguments the same way that a verb is a relation taking the subject and object as its arguments. As with verbs, the interpretation of the relation proceeds compositionally: the operator first combines with one of its arguments and then the result is applied to the other argument. Unlike verbs, the two arguments of a quantifying operator like *only* are widely assumed to be its scope and its restrictor. In general *only* takes a focused element in its scope.

A sentence containing focus like (11) is typically divided into a focus and a ground/focus-frame part. Focus is the individual $JOHN_F$, and the ground is the property *x is leaving*, i.e., all those elements who have the property "leaving", which is arrived at by replacing the focused element by a variable. According to Rooth (1989), the contribution of focus structure is a set of alternatives, which are propositions differing in the value of the variable.

(11) JOHN is leaving

Quantifiers like *only* are assumed to divide a clause into three parts which are essential to its interpretation: the operator, its restrictor clause and its nuclear scope (Partee (1991) and references therein). Partee (1991) proposes that focus structure often determines how this tripartite structure is alloted parts of the meanings of a sentence, that is, what can serve as the operator's restrictor and scope: the focus-frame goes into the restrictive clause, delimiting what sorts of contrasting cases are being quantified over, and the focused element goes to the nuclear scope.

How can clauses containing such quantifiers be syntactically represented? I will adopt Chierchia's (1995) proposal that the semantic structure arising from quantifiers has a syntactic representation also involving a tripartite

[2] One example of such a Focus head is the focus particle *mw* in Nweh, which marks focused DPs, PPs, CPs, infinitivals, and adverbs, as described in Garrett (1996):

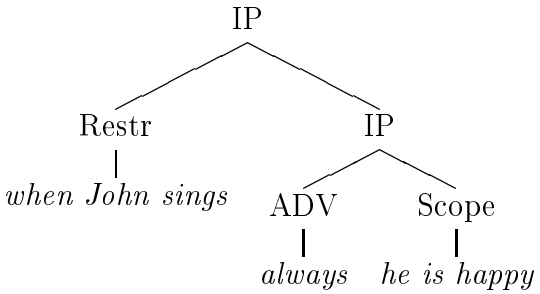
(i) Atem a ke? njuo m' AKATE
Atem agr p1 n-buy focus book
'Atem bought the BOOK'

structure which includes one projection each for the operator, its restriction, and its scope. His proposal handles Q-adverbs like *always, usually* and *if/when*-clauses. He structurally defines such a relation in terms of c-command: the scope of the operator is its c-command domain, and the restriction is what c-commands the operator. In a sentence like

(12) When John sings, he is always happy

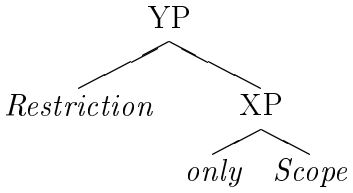
"*When John sings*" is the restriction, and "*he is happy*" the scope of the quantifying adverb *always*. Chierchia assumes that, no matter where the adverb may be at S-structure, at LF it selects its scope by adjoining to it; the scope of the adverb is its c-command domain (at LF). The structure he gives then is shown in (13):

(Tree 13)



We can extend Chierchia's proposal to cover *only*, as well. If we translate Chierchia's structure to more up-to-date structural terms, we would get a structure looking like (14):

(Tree 14)

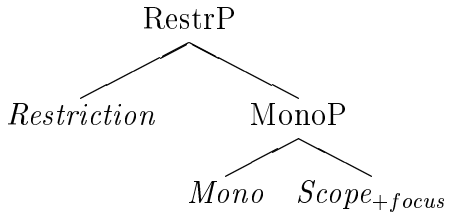


In our case, the scope of *only* is a focused DP (or a constituent including the focused DP). I assume that Greek *mono* heads its own functional projection (MonoP) which takes ScopeP as a complement; *mono* attracts a [+focus] DP to the specifier of its complement ScopeP. In this way, *mono* can "see" the focus in its domain and scope over it: the [+focus] feature percolates from [Spec,ScopeP] to ScopeP. This raises the question of what

happens in languages like English where it has been argued that there is no focus movement, at least foe some cases (i.e., when *only* relates to focus inside an island). Feature percolation in such cases cannot straightforwardly satisfy the requirement of *only* to "see" focus in its domain. See Rooth (1985, 1992) and Krifka (1996) for treatments of this problem.

The restrictor is what remains in the clause if the focus is taken out, and I assume it moves to the specifier of the RestrP projection, which c-commands MonoP. The scope and restriction are two distinct constituents, that is, the same constituent cannot serve as both scope and restriction. The structure, then, which we will adopt for representing clauses which contain *mono* will look like (15):

(Tree 15)



1.5 The articulated COMP field

Rizzi's (1995) proposal that CP is not a single projection but it needs to be decomposed into a several functional projections —among them a topic and a focus projection— comprising the CP field, very much like the functional projections comprising the IP field in Pollock (1989) will be adopted here.

Rizzi decomposes CP into a set of projections which he calls the Force-Finiteness system. This system hosts features like force (that is, complementizers that express the type of the clause), finiteness (expressing information about the finiteness of the IP embedded under the CP system), interrogative and relative pronouns, topics, and foci. The hierarchical structure Rizzi proposes for the CP system looks like (16):

(16) $[_{ForceP}\ [_{TopP^*}\ [_{FocP}\ [_{TopP^*}\ [_{FinP}\ [_{IP}]]]]]]$

The motivation for the particular hierarchical order in (16) is given in section (6.1).

The rest of the paper is organized as follows: an outline of empirical differences between topicalization and focusing will be given in section 2,

along with a preliminary analysis of their structure and a list of possible word order permutations. Section 3 is a presentation of the neutral word order in Greek. Section 4 is an analysis of the basic structure of focusing and topicalization. The central section of this thesis, section 5, presents the structures of sentences which contain the *mono* and EI operators and the mechanisms for deriving all the possible word-order variations arising from these structures. Section 6 gives evidence for the GivenP projection I assume and finally, section 7 derives clause-final topics.

2 Topic and Focus

In this section I first present some of the empirical differences between Greek topics and foci in 2.1, then show what the empirical differences suggest about the structure of sentences that contain topics and foci in 2.2, and finally give an inventory of the possible word orders with topics and foci along with a generalization about the three patterns all the possible orders fall into in 2.3.

2.1 Differences between topics and foci

Starting with the descriptive facts, here are some of the differences between focusing and topicalization. Most of these correspond to differences between Italian topics and foci (Cinque (1990), Rizzi (1995)).

A. THE CLITIC DOUBLING EFFECT

When the object is focused (stressed), clitic doubling is impossible (17a), but when the object is topicalized (not stressed), clitic doubling becomes obligatory (17b):

(17a) TI MARIA (*tin) ide o Petros
the Maria-acc her saw the Peter-nom
'It was MARIA that Peter saw.'

(17b) ti Maria, *(tin) ide o Petros
the Maria-acc her saw the Peter-nom
'As for Maria, Peter saw her.'

B. THE QUANTIFIER EFFECT

Some quantifiers, like *nobody, all*, can easily serve as foci (18a, 19a), but cannot become topics (18b, 19b). Apart from names, definite and indefinite DPs can also become topics and foci.

(18a) KANENA den ida
nobody not saw-1s
'I saw NOBODY.'

(18b) * Kanena, den (ton) ida
nobody not clit saw-1s

(19a) TUS PANTES ida
all saw-1s
'I saw EVERYBODY.'

(19b) * Tus pantes tus ida
all clit saw-1s

C. THE FOCUS UNIQUENESS EFFECT

There can be many topics in a sentence (20), but only one focus (21).

(20) to gramma, tis Marias, tis to edosa
the letter to Maria clit clit gave-1s
'The letter, to Mary, I gave it to her.'

(21) * TO GRAMMA TIS MARIAS edosa
the letter to Maria gave-1s

D. THE WH EFFECT

Wh-questions can co-occur with (follow) a topic (22), but not with a focus (23).

(22) Tu Gianni, ti tu ipes?
to John what clit said-2s
'To John, what did you tell him?'

(23) * TU GIANNI ti ipes?
to John what said-2s

E. THE CASE EFFECT

Topicalized DPs (24) can either bear the same case assigned to the clitic (24b), or a default nominative (24a). However focused DPs (25) can only bear the case assigned to the argument position they have moved from (observation and examples taken from Tsimpli (1995)):

(24a) i fitites$_i$, oli i kathigites tus$_i$ ipostirizun
the students$_{nom}$ all professors them$_{acc}$ support

(24b) tus fitites$_i$, oli i kathigites tus$_i$ ipostirizun
the students$_{acc}$ all professors them$_{acc}$ support
'All the professors support the students'

(25a) *I FITITES$_i$ ipostirizun t$_i$ oli i kathigites
the students$_{nom}$ support all professors
(25b) TUS FITITES$_i$ ipostirizun t$_i$ oli i kathigites
the students$_{acc}$ support all professors
'All the professors support the STUDENTS'

F. PARASITIC GAPS/WCO

Focusing shows weak cross over effects (26a) and licences parasitic gaps (28), which suggests that movement is involved in focusing. On the other hand, topicalization shows no weak cross over effects (27), and does not licence parasitic gaps (29), which suggests that it involves no movement. (Observation and examples taken from Iatridou (1990)):

(26a) *TON KOSTA$_i$ i mitera tu$_i$ agapa t$_i$
Kostas-acc his mother-nom loves
'It is KOSTAS$_i$ that his$_i$ mother loves'
(26b) TON KOSTA$_i$ i Maria agapa t$_i$
Kostas-acc Mary-nom loves
'It is KOSTAS$_i$ that Mary loves'
(27) ton Kosta$_i$ i mitera tu$_i$ ton agapa t$_i$
Kostas-acc his mother-nom cl. loves
'As for Kostas, his mother loves him'
(28) AFTO TO ARTHRO$_i$ i Maria arhiothetise e$_i$
this article-acc Mary filed
horis na diavasi e$_i$
without reading
'It was THIS ARTICLE that Mary filed without reading'
(29) *afto to arthro$_i$ i Maria to arhiothetise e$_i$
this article-acc Mary cl. filed
horis na diavasi e$_i$
without reading
'As for this article, Mary filed it without reading'

Let us see now what these effects suggest about the structure of focusing and topicalization.

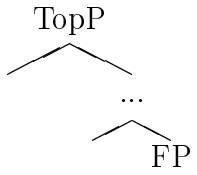
2.2 Analysis

Following Cinque (1990) and Tsimpli (1995), I assume first, that while focusing involves movement, topicalization does not. Second, that topics and foci occupy different structural positions, a Topic projection (TopP) and a Focus

projection (FP) respectively. The similarities between the Cinque/Tsimpli analysis and the one I will propose end here though. The structure I propose does not utilize a single CP projection, as both Cinque's and Tsimpli's structures do; rather, it assumes a CP field with finer distinctions among the projections comprising it, as proposed in Rizzi (1995). This field includes the TopP and FP projections among others, as we will see.

Structure (30) is a first approximation of the structure I am assuming:

(Tree 30)



This hierarchical structure is suggested by the fact that when a topic and a focused phrase co-occur at the beginning of the clause, the topic always precedes the focus[3]:

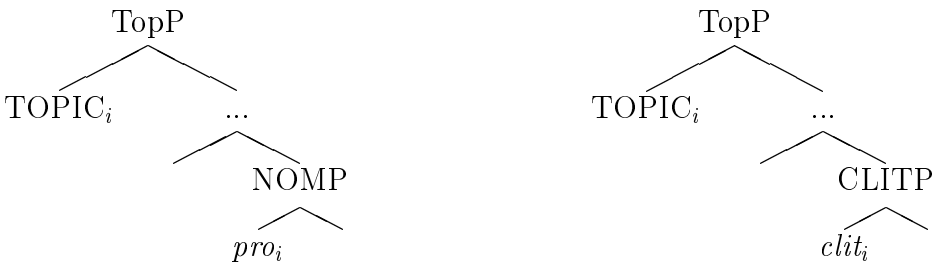
(31a)		ti Maria,	O PETROS	tin	ide
		the Maria-acc	the Peter-nom	her	saw
		'As for Maria, it was PETER who saw her.'			
(31b)	*	O PETROS	ti Maria	tin	ide
		the Peter-nom	the Maria-acc	her	saw

Let us now examine the differences between topics and foci that I listed in the previous section. First, according to the focus uniqueness effect, there can be many topics but only one focus in a sentence. I assume, as Rizzi (1995) does, that TopP can be recursive and thus many topics can occur in the same clause, whereas FP cannot and thus there can only be one focus.

Second, the clitic doubling effect: The structure I propose for these constructions is shown in (32) and (33) respectively. A topicalized subject is *base generated* in TopP, and is coindexed with a pro subject in the sentence giving the structure in (32a); a topicalized object is *base generated* in TopP, and is co-indexed with a resumptive object pronoun in the sentence giving the structure in (32b):

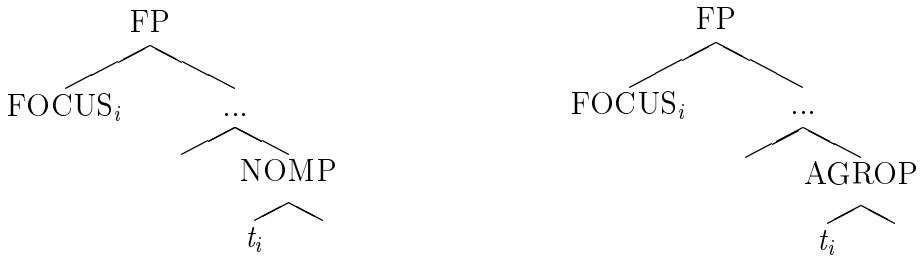
[3]Unlike in Italian, where topics can both precede and follow foci (Rizzi (1995)).

(32a, b)



On the other hand, a focused phrase *moves* to FP from its original position, either subject, as in (33a), or object, as in (33b). Moreover, evidence from parasitic gaps and WCO effects further suggests that focusing involves movement whereas topicalization does not.

(33a, b)



These structures in (32) and (33) correctly derive the asymmetry mentioned in the clitic doubling effect between topicalized and focused objects and their (in)ability to co-exist with clitics. If we return to the examples in (17a, b), repeated here as (34a, b), we see that because the fronted focused DP in (34a) is the real object, a clitic is not tolerated there, since the full DP and the clitic would be competing for the same role. In (34b), however, the fronted DP is only a topic; the real object of the verb is the clitic, whose presence is obligatory. The topic is just co-indexed with the object.

(34a) TI MARIA (*tin) ide o Petros
the Maria-acc her saw the Peter-nom
'It was MARIA that Peter saw.'

(34b) ti Maria, *(tin) ide o Petros
the Maria-acc her saw the Peter-nom
'As for Mary, Peter saw her.'

This structural difference between topics and foci also accounts for the case effect: topicalized objects can either bear the same case assigned to

the clitic, or a default nominative since they are not the real arguments, whereas focused objects, being the real arguments, must be accusative, as we've already seen in examples (24, 25):

(24a) i fitites$_i$, oli i kathigites tus$_i$ ipostirizun
the students$_{nom}$ all professors them$_{acc}$ support

(24b) tus fitites$_i$, oli i kathigites tus$_i$ ipostirizun
the students$_{acc}$ all professors them$_{acc}$ support
'All the professors support the students'

(25a) *I FITITES$_i$ ipostirizun t$_i$ oli i kathigites
the students$_{nom}$ support all professors

(25b) TUS FITITES$_i$ ipostirizun t$_i$ oli i kathigites
the students$_{acc}$ support all professors
'All the professors support the STUDENTS'

I will deal with the wh-effect (foci cannot co-occur with wh-pronouns, while topics can) later on (in section 7.1). I do not have an account for the quantifier effect, namely why some quantifiers can become foci but not topics.

The linear order of sentence constituents I have been presenting so far is not fixed. Many permutations are permissible, so before examining how we can derive the word orders possible with subject/object topic/focus, we need to see what the possible orders are.

2.3 Subject and object topic/focus possible orders

The neutral order of major constituents in Greek is SVO:

(35) O Giannis ide ti Maria
John-nom saw Mary-acc
'John saw Mary'

As far as other constituents are concerned, whenever both a clitic and negation are present, the order is Negation - Clitic - Verb, as in (36):

(36) O Giannis den tin ide ti Maria
John-nom not her saw Mary-acc
'John didn't see Mary'

Also, if *mono* 'only' is present in the sentence, it will usually precede the XP it modifies, in the position before Neg:

(37) O Giannis, mono TI MARIA den ide
John only MARIA not saw
'John didn't see only MARY'

In the list of possible orders that follows in (38), (39), *o Giannis* 'John' is subject, *ti Maria* 'Mary' object, *mono* 'only'. *Den (tin)* 'not (obj-clitic)' and the verb *ide* 'saw', form a constituent that can never be broken. For ease of exposition, this constituent is abbreviated as Verbal Complex (VC). Focused XPs are capitalized, eg O GIANNIS.

The possible orders in (38), (39) are combinations of three patterns which are shown in (40). As can be seen in (38) and (39), the permutations that are (im)possible for subject and object focus are exactly the same.

(38) SUBJECT FOCUS ORDERS

1. *Ti Maria (mono) (den) tin ide O GIANNIS [**Top-(mono)-VC-Foc**]
2. Ti Maria (mono) O GIANNIS (den) tin ide [**Top-(mono)-Foc-VC**]
3. (mono) O GIANNIS (den) tin ide ti Maria [**(mono)-Foc-VC-Top**]
4. *(mono) O GIANNIS ti Maria (den) tin ide [**(mono)-Foc-Top-VC**]
5. Ti Maria O GIANNIS (mono) (den) tin ide [**Top-Foc-(mono)-VC**]
6. O GIANNIS (mono) (den) tin ide ti Maria [**Foc-(mono)-VC-Top**]
7. *O GIANNIS (mono) ti Maria (den) tin ide [**Foc-(mono)-Top-VC**]
8. Ti Maria O GIANNIS (den) tin ide (mono) [**Top-Foc-VC-(mono)**]
9. O GIANNIS (den) tin ide (mono) ti Maria [**Foc-VC-(mono)-Top**]
10. *O GIANNIS ti Maria (den) tin ide (mono) [**Foc-Top-VC-(mono)**]
11. Ti Maria (den) tin ide (mono) O GIANNIS [**Top-VC-(mono)-Foc**]
12. (den) tin ide (mono) O GIANNIS ti Maria [**VC-(mono)-Foc-Top**]
13. *(den) tin ide ti Maria (mono) O GIANNIS [**VC-Top-(mono)-Foc**]

(39) OBJECT FOCUS ORDERS

1. *O Giannis (mono) (den) ide TI MARIA [**Top-(mono)-VC-Foc**]
2. O Giannis (mono) TI MARIA (den) ide [**Top-(mono)-Foc-VC**]
3. (mono) TI MARIA (den) ide o Giannis [**(mono)-Foc-VC-Top**]
4. *(mono) TI MARIA o Giannis (den) ide [**(mono)-Foc-Top-VC**]
5. O Giannis TI MARIA (mono) (den) ide [**Top-Foc-(mono)-VC**]
6. TI MARIA (mono) (den) ide o Giannis [**Foc-(mono)-VC-Top**]
7. *TI MARIA (mono) o Giannis (den) ide [**Foc-(mono)-Top-VC**]
8. O Giannis TI MARIA (den) ide (mono) [**Top-Foc-VC-(mono)**]
9. TI MARIA (den) ide (mono) o Giannis [**Foc-VC-(mono)-Top**]
10. *TI MARIA o Giannis (den) ide (mono) [**Foc-Top-VC-(mono)**]
11. O Giannis (den) ide (mono) TI MARIA [**Top-VC-(mono)-Foc**]
12. (den) ide (mono) TI MARIA o Giannis [**VC-(mono)-Foc-Top**]
13. *(den) ide o Giannis (mono) TI MARIA [**VC-Top-(mono)-Foc**]

There are three general patterns that derive all the permutations of (38), (39):

(40) PATTERNS OF LINEAR ORDERS

A: Topics can be clause initial or final, not clause medial:

- TOPIC - FOCUS - VC
- *FOCUS - TOPIC - VC
- FOCUS - VC - TOPIC

B: Foci can occur before or after the verbal complex (which may include, apart from negation and clitics, indirect objects, PPs and adjuncts):

- TOPIC - FOCUS - VC
- TOPIC - VC - FOCUS

C: *Mono* can appear in 3 positions: before or after the focused DP, or at the end of the clause. It can't appear before the VC in a focus final order. Topics (omitted here) can be clause initial, or final :

- MONO - FOCUS - VC
- FOCUS - MONO - VC
- FOCUS - VC - MONO
- VC - MONO - FOCUS
- VC - FOCUS - MONO
- *MONO - VC - FOCUS

In section 5, I will examine how we can derive the possible, and what's wrong with the impossible word orders. (There are some extra possibilities with ditransitive verbs, which I list in section 6.1.)

3 Neutral word order

In a simple transitive sentence with subject *o Giannis* 'John-nom', verb *ide* 'saw', and object *ti Maria* 'Mary-acc', we get the order

(41) O Giannis ide ti Maria
John-nom saw Mary-acc
'John saw Mary'

The derivation for the neutral word order shown below will be assumed henceforth without being repeated. The basic VP is shown in (42):

(42) $[_{VP}$ *o Giannis* $[_{V'}$ *ide ti Maria*]]

Assuming the standard movements of subject and object to case positions (Spec of AgrSP, Spec og AgrOP), and of V to T, we get (43):

(43) $[_{TP}$ *ide*$_k$ $[_{AGRSP}$ *o Giannis*$_j$ $[_{AGROP}$ *ti Maria*$_i$ $[_{VP}$ t_j $[_{V'}$ t_k t_i]]]]]

Finally, to get to the basic SVO order the subject needs to move to NomP. We have already seen that the order of projections above TP will be NomP $\gg$ NegP $\gg$ ClitP $\gg$ TP, as in (44):

(44) $[_{NOMP}$ *o Giannis*$_j$ $[_{NEGP}$ *(den)* $[_{TP}$ *ide*$_k$ $[_{AGRSP}$ t^2_j $[_{AGROP}$ *ti Maria*$_i$ $[_{VP}$ t^1_j $[_{V'}$ t_k t_i]]]]]]]

to give us the correct order of constituents. From now on, I will omit the bottom of the tree and only show the object in AgrO-P, the verb in TP and the subject in NomP, as I have done in (44), assuming that they always get there the way I have illustrated. In the following section I will examine the structures of focus and topic.

4 Focusing and Topicalization structure

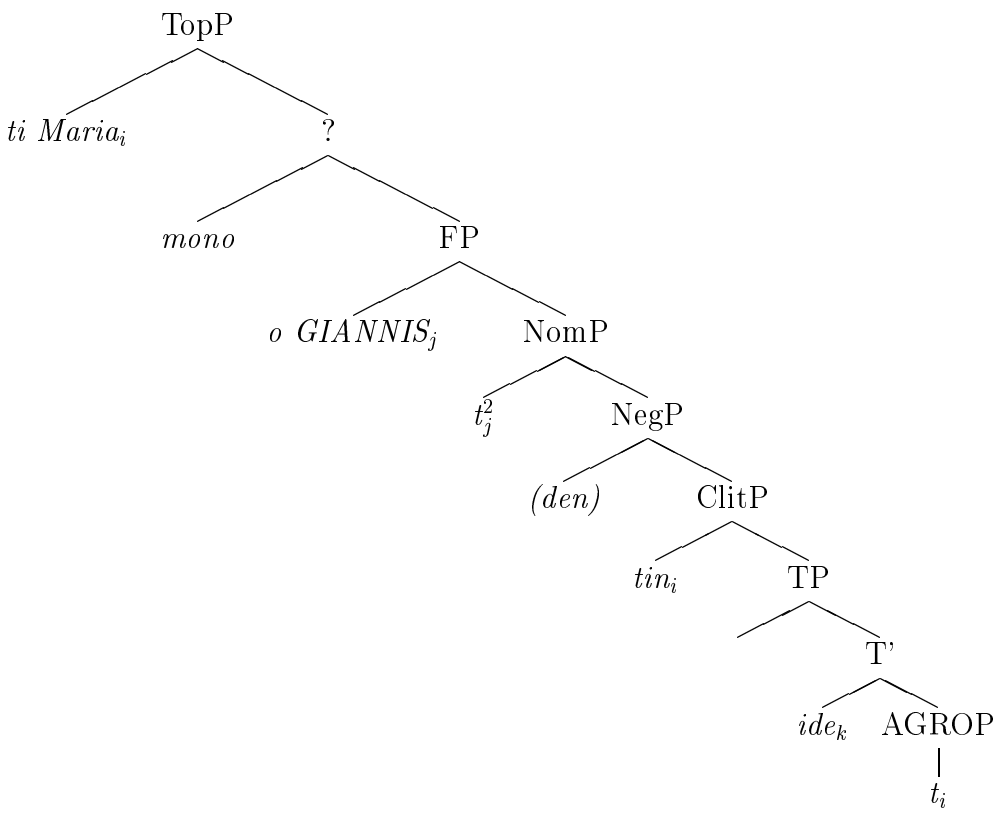
4.1 Subject focus

I assume that focused DPs have to move to the Spec of the Focus projection (FP) to get their [focus] feature checked; in Greek, this movement is overt. If a focused subject moves on to FP, we get

(45) ti Maria (mono) O GIANNIS tin ide
Mary-acc only John-nom clit saw
'It was (only) JOHN who saw Mary'

Let us assume that the full accusative DP *ti Maria* is not a real object but a topic which is sitting in the topic projection, TopP. So the structure will be something like (46):

(Tree 46)



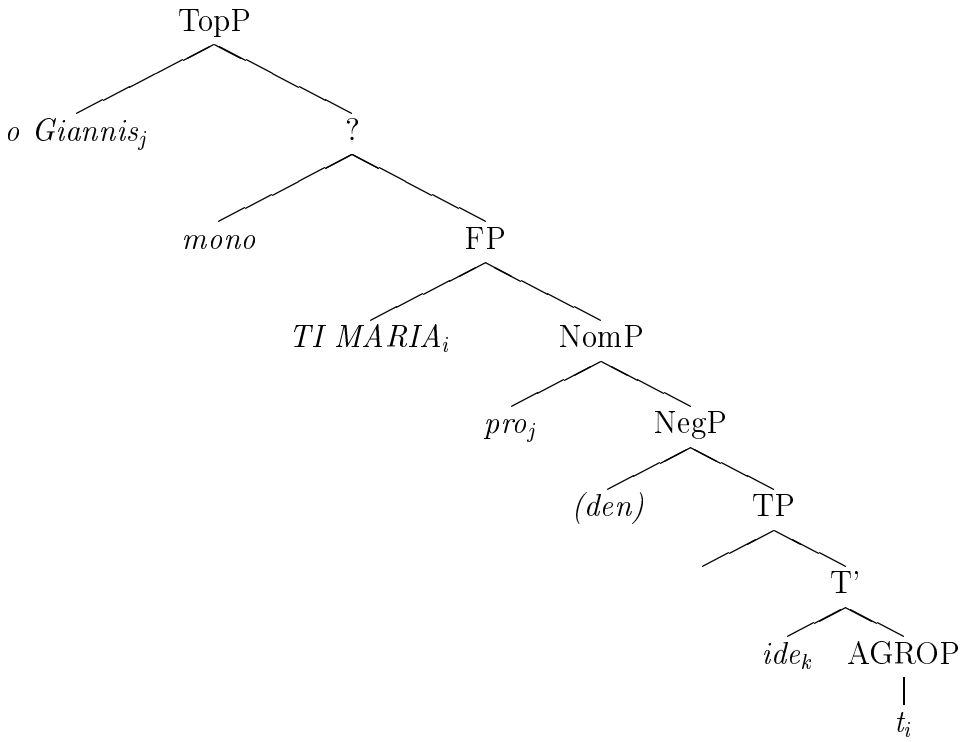
The clitic (which I assume is the real object) must move from AgrO-P to the Spec of ClitP for some reason which I will leave unspecified here (to check features, satisfy a clitic head, clitic operator, clitic force, clitic voice, etc).

4.2 Object focus

Like subject focus, a focused object moves to FP. Let us assume here as well that a subject topic is base generated in TopP, and the real subject is a *pro* co-indexed with the topic. The derivation for (47) is shown in (48):

(47) O Giannis (mono) TI MARIA ide
John-nom only Mary-acc saw
'It was (only) MARY that John saw'

(Tree 48)



5 The *mono* and EI operators

Section 5.1 presents the scoping possibilities of *mono* in its different possible positions in the clause. 5.2 includes the derivations for the different positions of *mono*. 5.3 gives one example of the derivation of focus clauses in which *mono* is absent and replaced by the EI operator. Finally, in 5.4 I give evidence that both pre- and post-verbal foci occupy the same structural position, Spec,FP, and present the derivation of the post-verbal order.

5.1 *Mono* operator

It is widely assumed that *only* is an operator which requires a focused phrase in its scope. So in English we get:

(49) John only introduced BILL to Sue.

(50) John only introduced Bill to SUE.

Greek *mono*, 'only', also requires a focused phrase in its scope. The positions where *mono* can occur are different from the English ones, and in most cases *mono* and the focused DP need to be adjacent (51, 52). *Mono* can occur[4]

-Before the focused DP (51).

-After the focused DP (52).

-At the right edge of the clause (53).

-Unlike English, the verb cannot intervene between *mono* and focus (54).

(51)	ti Maria	mono	O GIANNIS	(den)	tin	ide
	Mary-acc	only	John-nom	not	clit	saw
(52)	ti Maria	O GIANNIS	mono	(den)	tin	ide
	Mary-acc	John-nom	only	not	clit	saw
(53)	ti Maria	O GIANNIS	(den)	tin	ide	mono
	Mary-acc	John-nom	not	clit	saw	only

'It was only JOHN who didn't see Mary'

(54)	* ti Maria	mono	(den)	tin	ide	O GIANNIS
	Mary-acc	only	not	clit	saw	John-nom

I assume that *mono* heads its own projection, MonoP. Semantically, *mono* identifies the focused element as the only entity, among a set of possible alternatives, of which the predicate holds.

The scoping possibilities of *mono* differ depending on its position within the clause. In A through C below the element that *mono* scopes over is underlined (recall that VC stands for a verbal complex which may include negation and clitics in addition to the verb in simple sentences and which may also include postverbal material such as indirect objects or adjuncts):

A) *mono* — <u>focus</u> — VC, shown in (55)

B) <u>focus</u> — *mono* — VC, (56)

C) <u>focus — VC</u> — *mono*, (57)

In linear orders A and B, *mono* can only scope over the focused DP; in C it can scope over either the focused DP or the focused DP plus the verbal complex. These scoping possibilities are illustrated in (55 - 57). In each of these sentences two possible continuations are given: one in which the focused DP is negated (a), and one in which the whole VP is negated (b). In all three sentences, (a) is a coherent way to continue the sentence, which indicates that *mono* can scope over the focused DP, i.e., they say that "the

[4]There is also the possibility of the verbal complex (negation+clitic+verb) preceding *mono* and focus, giving additional linear orders but as these do not create extra scoping possibilities for *mono* (which in these orders scopes only over the focused DP), I will not discuss them here. For a discussion of post-verbal focus look at section 5.4.

person who saw Mary was John and nobody else". On the other hand, (b) is possible only with sentence (57), indicating that only there does *mono* scope over the entire VP, i.e., the sentence says that "the only relevant thing that happened to Mary was that John saw her; Kostas did not call her, Peter did not write to her, etc".

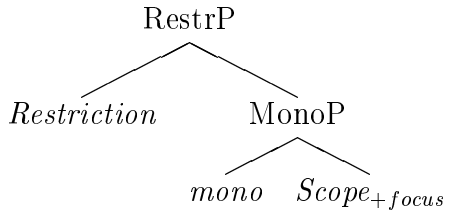
(55)	ti Maria	mono	O GIANNIS	tin	ide...
	Mary-acc	only	John-nom	clit	saw
	'It was only JOHN who saw Mary...'				
a.	...ohi	o Kostas			
	...not	Kostas			
b.	* ...den	tis	tilefonise	o Kostas	
	...not	her	called	Kostas	
	'...Kostas didn't call her'				

(56)	ti Maria	O GIANNIS	mono	tin	ide...
	Mary-acc	John-nom	only	clit	saw
	'It was only JOHN who saw Mary...'				
a.	...ohi	o Kostas			
	...not	Kostas			
b.	* ...den	tis	tilefonise	o Kostas	
	...not	her	called	Kostas	
	'...Kostas didn't call her'				

(57)	ti Maria	O GIANNIS	tin	ide	mono
	Mary-acc	John-nom	clit	saw	only
	'It was only JOHN who saw Mary'				
a.	...ohi	o Kostas			
	...not	Kostas			
b.	...den	tis	tilefonise	o Kostas	
	...not	her	called	Kostas	
	'...Kostas didn't call her'				

As already mentioned above (section 1.4) the structure for representing clauses which contain *mono* will look like (58):

(Tree 58)

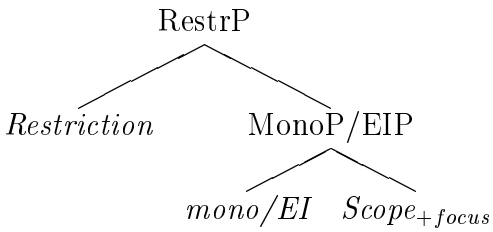


We will see how this structure works to derive the linear order variations attested in Greek in section 5.

We have also assumed that whenever *mono* is not present in a clause containing focus, a silent EI operator exists in its place (but look at section 5.4 for post-verbal foci). An important open problem here is why preverbal foci are always accompanied by either EI or *mono*.

The structure for clauses containing an EI operator will be identical to the one proposed for clauses containing *mono*. A clause, then, will contain either a MonoP or an EIP, with focus as their scope and the remainder of the clause as their restriction:

(Tree 59)



Let us now use these structures to derive the linear orders in Greek clauses containing *mono*.

5.2 The *mono* operator - Derivations

Mono can appear immediately before, immediately after the focused phrase or clause-finally. According to my analysis, the difference between the pre-focal and post-focal order of *mono* is the result of the focus phrase pied-piping *mono* with it in its movement to FP or not, as we will see. Clause-final *mono* orders will be the result of the focus phrase pied-piping the whole clause to FP with it and leaving *mono* behind.

Here are the possible positions of *mono*, their corresponding scoping domains, and the sections where their derivations will be discussed. The scope ambiguity in the clause-final *mono* order, as we will see, is a matter of how big a constituent (FinP or ScopeP) serves as the restriction of *mono*, and consequently, how big a constituent moves to RestrP:
A) When it follows the focused DP, *mono* scopes only over the focused DP (section 5.2.1).
B) When it precedes the focused DP, *mono* scopes only over the focused DP (section 5.2.2).
C) At the right edge of the clause, *mono* scopes either over the whole VP or only the focused DP (section 5.2.3).

In section (5.3) I derive *mono*-less linear orders and in section (5.4) I discuss post-verbal focus, which, as we have seen, is non-contrastive in Greek.

5.2.1 The post-focus *mono* order

This order is illustrated in (60a):

(60a) O Giannis TI MARIA mono ide
John Mary only saw
'It was only MARY that John saw'

The derivation of the hierarchical structure is shown in (60b). The linear order difference between post-focal and pre-focal *mono* (see next section) is a matter of *mono* being pied-piped by the focused phrase to the specifier of FP. In the post-focal order, *mono* is not pied-piped by the focused phrase, whereas in the pre-focal order it is. Here is the derivation:

STEP A: *Mono* attracts the object (which is marked with a [+focus] feature) to its complement position. I assume that this movement is motivated by the need for *mono* to "see" that there is focus in its domain. Spec,ScopeP has now a [+focus] feature, the Scope head agrees with its Spec (i.e., Scope^0 is also [+focus]), so the [+focus] feature percolates to ScopeP.

STEP B: FinP[5], which is a remnant dominating the verb, a pro subject and the trace of the moved object, moves to Spec,RestrP, since it is the

[5]FinP is a projection above the inflectional field, taking NomP as its complement, where the subjunctive particle *na* appears. I will give empirical evidence for FinP and its position later on. In the derivation of all linear orders involving *mono*, I will assume that the whole FinP is moving to RestrP, based on the fact that in subjunctive clauses containing *mono*, *na* appears in front of the verbal complex wherever that may happen to move, as shown in (i-iii):

restrictor of the *mono* operator, and needs to c-command it. The interpretation of FinP [pro_j *saw t*], i.e. "John saw someone" is consistent with its movement to RestrP and taking on the role of the restrictor. The restrictor should express a property which is satisfied only by the focused DP, and this is exactly what it does: it expresses the property of *being seen by John*, and Mary is the only individual that has this property.

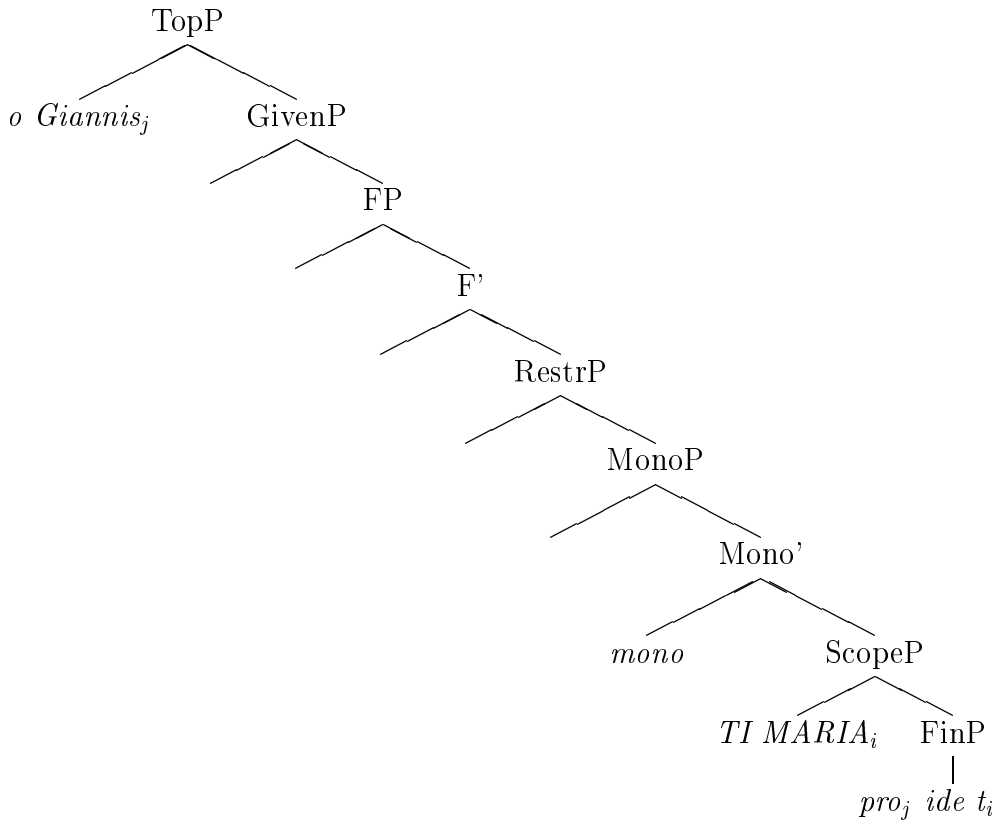
STEP C: ScopeP moves to Spec,FP to check its [+focus] feature.

STEP D: *Mono* moves to the head of FP, because it has to merge with a [+focus] head. This is obtained in one of two ways: either by movement of *mono*-to-F, as happens here, or by movement of Scope^0-to-*mono*, as we will see in the following section.

(i)	Ithele	TI MARIA	mono	na evlepe
	wanted	Mary	only	to see
(ii)	Ithele	mono	TI MARIA	na evlepe
	wanted	only	Mary	to see
(iii)	Ithele	TI MARIA	na evlepe	mono
	wanted	Mary	to see	only

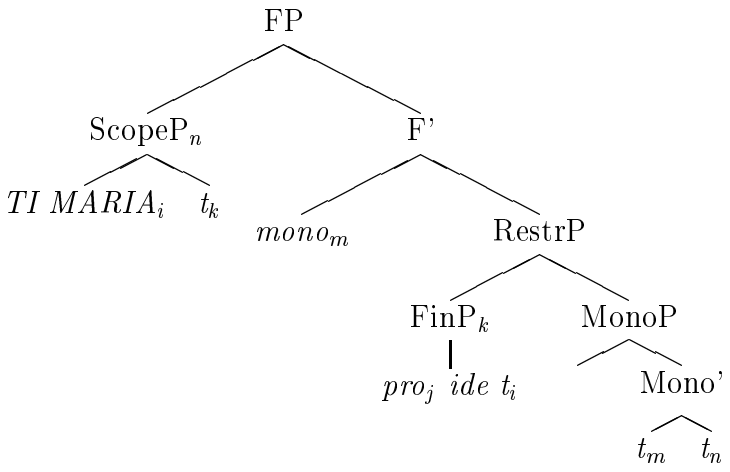
'It was only MARY that he wanted to see'

(Tree 60b)



After all movements, the hierarchical structure will look like (60c). Since TopP will always be the same in the derivations that follow, I will assume it but not show it. I will also assume but not show GivenP (between TopP and FP), a projection where topicalized constituents appear; this projection will become useful in the derivations of post-verbal foci in section 5.4 and evidence for its existence is given in section 6.

(Tree 60c)



5.2.2 The pre-focus *mono* order

This order is illustrated in (61a):

(61a) O Giannis mono TI MARIA ide
John only Mary saw
'It was only MARY that John saw'

The derivation of the hierarchical structure is shown in (61b). This linear order is derived by *mono* being pied-piped by the focused phrase to the specifier of FP. Why this pied-piping is possible here is spelled out in STEP C below:

STEP A: *Mono* attracts the object to its complement position and so it scopes over it. The [+focus] feature percolates to ScopeP.

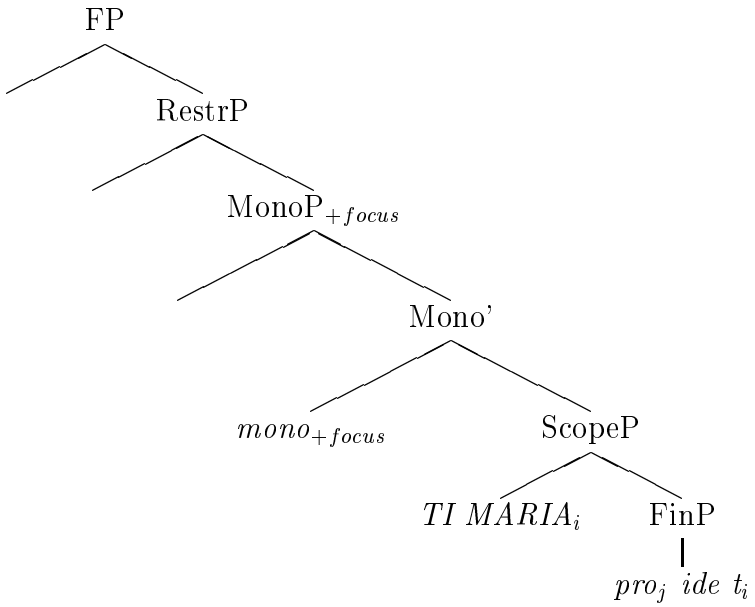
STEP B: FinP, which is a remnant dominating the verb, a pro subject and the trace of the moved object, moves to Spec,RestrP since it is the restrictor of the *mono* operator, and needs to c-command it. Again here, the interpretation of FinP [*pro*$_j$ *saw t*], i.e. "John saw someone" is consistent with its movement to RestrP and taking on the role of the restrictor. The restrictor expresses the property of *being seen by John*, and Mary is the only individual that has this property.

STEP C: Finally, the correct word order is derived here by the [+focus] feature pied-piping the whole MonoP to Spec,FP. The problem here is how [+focus] can pied-pipe MonoP when its carrier is a complement, not a specifier of MonoP. Koopman 1997 (class lectures) argues that such pied-piping

is impossible. However, in questions beginning "About what ...?", PP-pied-piping presents the same problem: the question word *what* carrying a [+wh] feature and which is a complement of the preposition *about*, pied-pipes a PP (to CP). I will adopt here Koopman's solution to the problem, which in our case involves the following: Spec,ScopeP has [+focus]; the Scope head agrees with its Specifier; Scope^0 adjoins to Mono^0, carrying [+focus] with it; MonoP then inherits [+focus] from the complex head [Scope^0+Mono^0] and because of that it has to pied-pipe to Spec,FP.

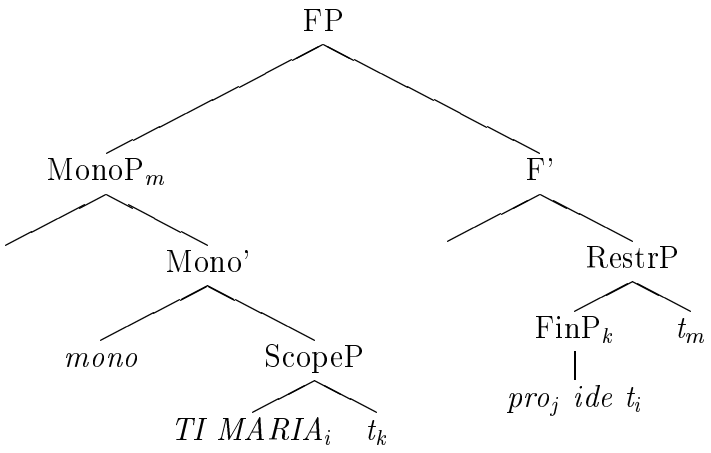
Notice that *mono* behaves similarly in the derivation of its pre-focus position just outlined here and in the derivation of the post-focus position outlined in the preceding section, in that in both cases it has to merge with a [+focus] head. Since this similarity accounts for the behaviour of *mono* in a unified way, it is very satisfactory.

(Tree 61b)



After all movements, this is what the hierarchical structure will look like:

(Tree 61c)



5.2.3 The clause-final *mono* order

The clause-final *mono* order is the result of the focus phrase pied-piping the whole clause to FP with it and leaving *mono* behind. Recall that this order has two possible interpretations. One in which *mono* scopes over the entire clause preceding it (62a) and one in which it scopes only over the focused DP (63a). The derivation of the hierarchical structure of the former interpretation is shown in (62b) and of the latter in (63b).

(62a) O Giannis TI MARIA ide mono
John Mary saw only
'It was only MARY that John saw, (he didn't call Sue)'

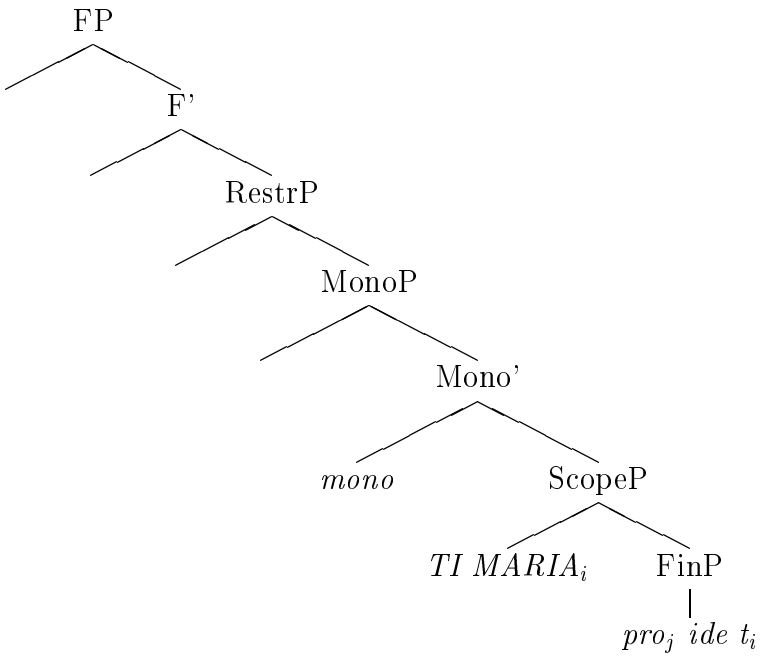
The scope ambiguity is a matter of how big a constituent (FinP or ScopeP) serves as the restriction of *mono*, and consequently, how big a constituent moves to RestrP. When *mono* scopes over the entire clause, ScopeP moves as a whole to the specifier of FP and its trace (which moves to RestrP) serves as the restriction for *mono*. When *mono* scopes only over the focused DP, FinP serves as the restriction (and moves to RestrP).

STEP A: *Mono* attracts the object to its complement position and so it scopes over it. The [+focus] feature percolates to ScopeP.

STEP B: ScopeP moves to Spec,FP to check its [+focus] feature.

STEP C: *Mono* moves to the head of FP because it needs to merge with a [+focus] head.

(Tree 62b)



STEP D: Finally, the trace of the moved ScopeP moves to RestrP, to serve as *mono*'s restrictor (62c). Since *mono* is scoping over the entire clause here, the restrictor should be whatever is left over: a trace. The movement of the trace to RestrP here is consistent with the interpretation of the restrictor, i.e., 'John did something'.

(62c) [$_{TopP}$ O Giannis$_j$ [$_{FP}$ [$_{ScopeP}$ TI MARIA$_i$ pro$_j$ ide t$_i$]$_m$ [$_{F'}$ mono$_k$ [$_{RestrP}$ [$_{MonoP}$ t$_k$ [$_{ScopeP}$ t$_m$]]]]]]

In the second interpretation for the clause-final *mono* linear order (63a), *mono* scopes only over the object DP.

(63a) O Giannis TI MARIA ide mono
John Mary saw only
'It was only MARY that John saw (not Sue)'

The derivation of the hierarchical structure of the second interpretation is shown in (63b). Recall that here FinP serves as the restriction (and moves to RestrP).

STEP A: *Mono* attracts the object to its complement position and so it scopes over it. The [+focus] feature percolates to ScopeP.

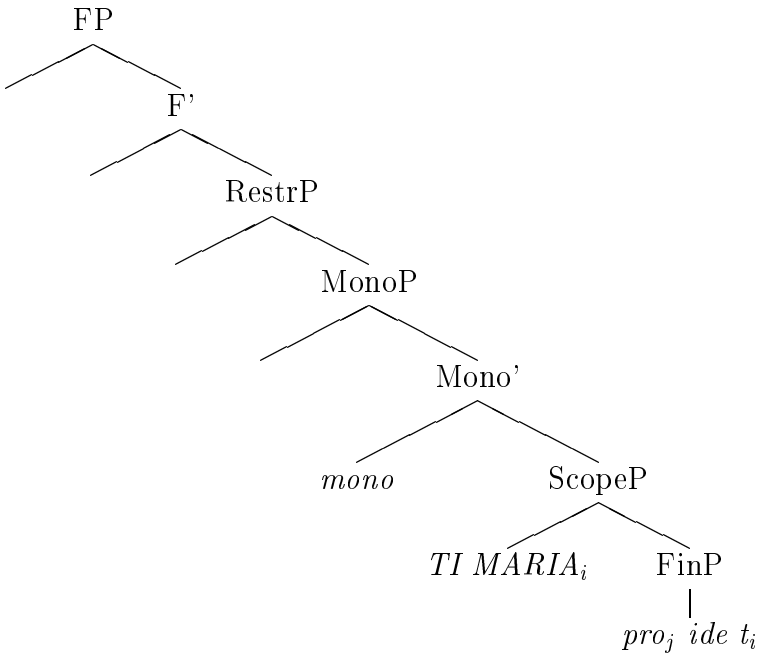
STEP B: FinP, which is a remnant dominating the verb, a pro subject and the trace of the moved object, moves to Spec,RestrP since it is the restrictor

of the *mono* operator, and needs to c-command it. The interpretation of FinP [pro_j *saw t*], i.e. "John saw someone" is consistent with its movement to RestrP and taking on the role of the restrictor. The restrictor expresses the property of *being seen by John*, and Mary is the only individual that has this property.

STEP C: Finally, ScopeP moves to Spec,FP to check its [+focus] feature.

Unresolved problem: *Mono* here does not move to the head of FP. The problem that remains an open question is how *mono* acquires the [+focus] feature without moving to F^0.

(Tree 63b)



5.3 *Mono*-less clauses

The derivations for *mono*-less clauses are similar to those presented for clauses containing *mono*. The only difference here is that instead of a MonoP, we have an EIP projection. The EI operator attracts a [+focus] DP to its complement position so that it can scope over it, just like *mono* does. Since presentation of all *mono*-less derivations would take too much space, I will present the derivation for only one of the linear orders possible for *mono*-less clauses.

This order is illustrated in (64a):

(64a) O Giannis TI MARIA ide
John Mary saw
'It was MARY that John saw'

The derivation of the hierarchical structure is shown in (64b).

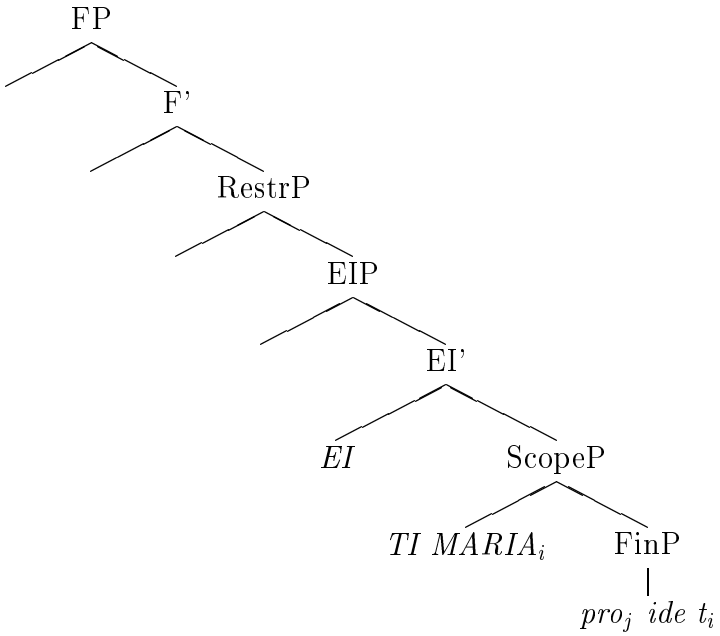
STEP A: EI attracts the object (which is marked with a [+focus] feature) to ScopeP and so it scopes over it. The [+focus] feature percolates to ScopeP.

STEP B: FinP, which is a remnant dominating the verb, a pro subject and the trace of the moved object, moves to Spec,RestrP, since it is the restrictor of the EI operator, and needs to c-command it.

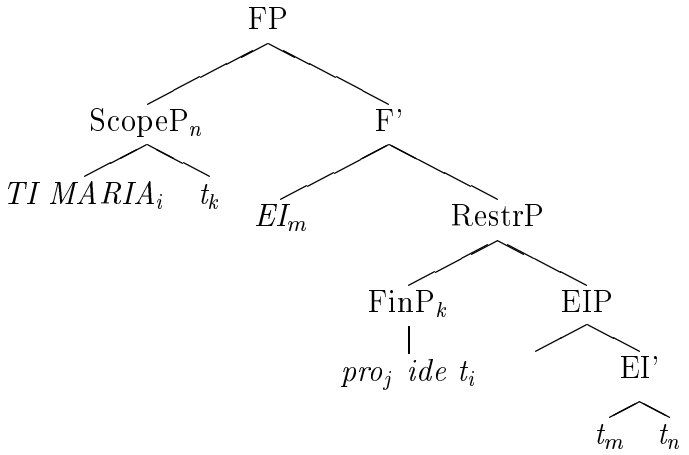
STEP C: ScopeP moves to Spec,FP to check its [+focus] feature.

STEP D: The *EI* head moves to the head of FP because, like *mono*, it needs to merge with a [+focus] head:

(Tree 64b)



The final structure will look like this:
(Tree 64c)



The structures presented for *mono* and EI derive pre-verbal-focus linear orders, which have a contrastive interpretation. We also need to see what happens with post-verbal, non-contrastive foci.

5.4 Post-verbal focus

We have already seen that there are two focus constructions in Greek, each with a distinct interpretation: contrastive and information focus. We have also seen that according to Horvath's (1997) analysis which we adopted, contrastiveness in preverbal foci is the effect of the EI operator. What happens with information foci? Do they appear in a different position? I propose that they do not.

To begin with, both presentational and contrastive focus involve prosodic marking. In addition to that, they share syntactic properties such as the inability to coincide with resumptive clitics, their uniqueness within the clause, etc.

Furthermore, both post-verbal and pre-verbal foci appear in the same position relative to *mono*, as seen in (65a) and (65b) respectively, i.e., immediately adjacent to it. In (65a) what appears to be a post-verbal focused DP occurs immediately after *mono*. Since we have assumed that *mono* occupies a structural position in the COMP field, the focused DP must also be in the COMP field. I propose that what makes the focused DP look like it hasn't

moved from its argument post-verbal position is that FinP, the remnant sitting in Spec,RestrP, further moves to a position higher than both the focus and MonoP, to the GivenP projection I have been assuming.

GivenP, sits immediately above FP (and below TopP) and when FinP moves there it becomes topicalized. The intonation of the constituent in GivenP is that of topics and so is its interpretation. What I understand (65a) to be saying is "As for John, and who he didn't see, it was only MARY (that he didn't see)."

(65a)	O Giannis	(den)	ide	(mono)	TI MARIA
	John-nom	not	saw	only	Mary-acc
(65b)	O Giannis	(mono)	TI MARIA	(den)	ide
	John-nom	only	Mary-acc	not	saw
	'It was (only) MARY that John didn't see'				

We get further evidence that post-verbal foci are in the COMP field if we look at sentences with richer structure, that is, with more material after the verb, like (66). In this example, what follows the verb is the PP *ap to trapezi* 'from the table', and the temporal adjunct *ehtes* 'yesterday'.

In (66a), which is the preverbal focus order, the focused DP has moved out of its argument position (which is arguably lower than the verb) and up to the Spec,ScopeP position according to my analysis so far. In (66b), which is the post-verbal focus order, the string *pire* t_i *ap to trapezi ehtes* comprising the verb, PP, and adjunct linearly precede *mono* and the focused DP. This suggests that the preposed string has moved to a structural position above FP as a remnant constituent (FinP), after the focused object moved out of its argument position. Otherwise, if one wants to argue that the focused DP is still sitting in its argument position somewhere in the IP field, there is no good way to account for the PP and adjunct intervening between the verb and the focused DP. More evidence that the preposed string *pire* t_i *ap to trapezi ehtes* forms a constituent is seen in (66c) where it can be conjoined with *evale stin tsanda simera* 'put in the bag today'.

(66a) O Giannis (mono) TO KLIDI$_i$ pire t$_i$ ap to trapezi ehtes
John-nom only the key-acc took from the table yesterday

(66b) O Giannis [pire t$_i$ ap to trapezi ehtes]$_j$
John-nom took from the table yesterday
(mono) TO KLIDI$_i$ t$_j$
only the key-acc
'It was (only) THE KEY that John took
from the table yesterday'

(66c) O Giannis [pire ap to trapezi ehtes] ke [evale stin
John-nom took from the table yesterday and put in
tsanda simera] (mono) TO KLIDI
bag today only the key-acc
'It was (only) THE KEY that John took from the table yesterday
and put in the bag today'

Let us see how these orders are derived. Recall that with or without *mono*, the derivation is the same, except that in *mono*-less sentences, the EI operator will occur in the place of *mono*. I am using *mono* here to make the derivation more transparent.

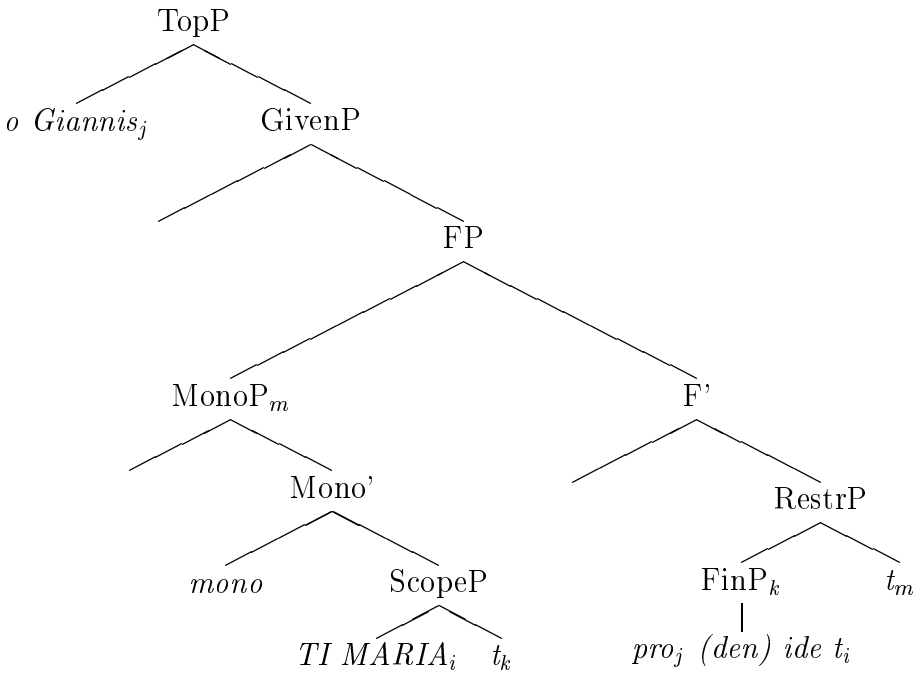
The linear order shown in sentence (65a) is derived in (67) below. The crucial step which gives the correct order of this sentence is STEP B, where the remnant FinP moves to GivenP.

STEP A: As with the pre-verbal focus sentences containing *mono*, the focused DP first moves to Spec,ScopeP so that *mono* (or EI in *mono*-less sentences) can scope over it. The [+focus] feature percolates up from the DP to MonoP (or EIP), in the way already shown, and because of that the whole MonoP (or EIP) is pied-piped together with the focused DP to the Spec,FP[6].

STEP B: FinP, after having raised to Spec,RestrP to take the role of the operator's restrictor, moves up to the Spec,GivenP and becomes topicalized. It is this movement that makes the focused DP appear post-verbal. As far as I can see, there is no interpretive and/or intonational difference between TopP and GivenP material.

[6]Notice that I am only deriving one of the two possible post-verbal focus linear orders, namely VC-MONO-FOCUS. The second one, VC-FOCUS-MONO, can be derived analogously: In STEP A, raising TI MARIA to [Spec,FP], then *mono* to F^0, and finally FinP to [Spec,RestrP] as was shown in 5.2.1. Then in STEP B, FinP raises from RestrP to [Spec,GivenP].

(Tree 67)



In *mono*-less sentences where we don't have an overt operator to hint at the real position of focus, the apparently post-verbal focus only *looks* like it hasn't raised to FP, but as we just saw this is just an effect of FinP having raised above FP.

However, one problem remains: post-verbal foci in *mono*-less clauses do have a different interpretation from pre-verbal foci, that is, pre-verbal foci have a contrastive meaning whereas post-verbal ones do not. If foci end up in the same structural position in both, what gives these two linear orders different meaning? In the case of post-verbal foci, which are non-contrastive, I will stipulate that the EI operator is either absent or blocked by some mechanism, maybe related to the verb's movement to GivenP.

In all the derivations shown so far, I have used an object focus. These derivations work just as well with a subject focus, but I will not present them here for lack of space. Section 6 presents evidence for the existence of GivenP.

6 GivenP

More evidence that a projection like GivenP is necessary can be found in data from ditransitive verbs, shown in section 6.1, and data from quantifier phrases (QPs), shown in section 6.2.

6.1 Focus with ditransitive verbs

Focused phrases in ditransitive verb sentences can appear in the following positions: before the verb (68a, 69a), between the verb and the indirect object (68b, 69b), and after both the verb and the indirect object (68c, 69c):

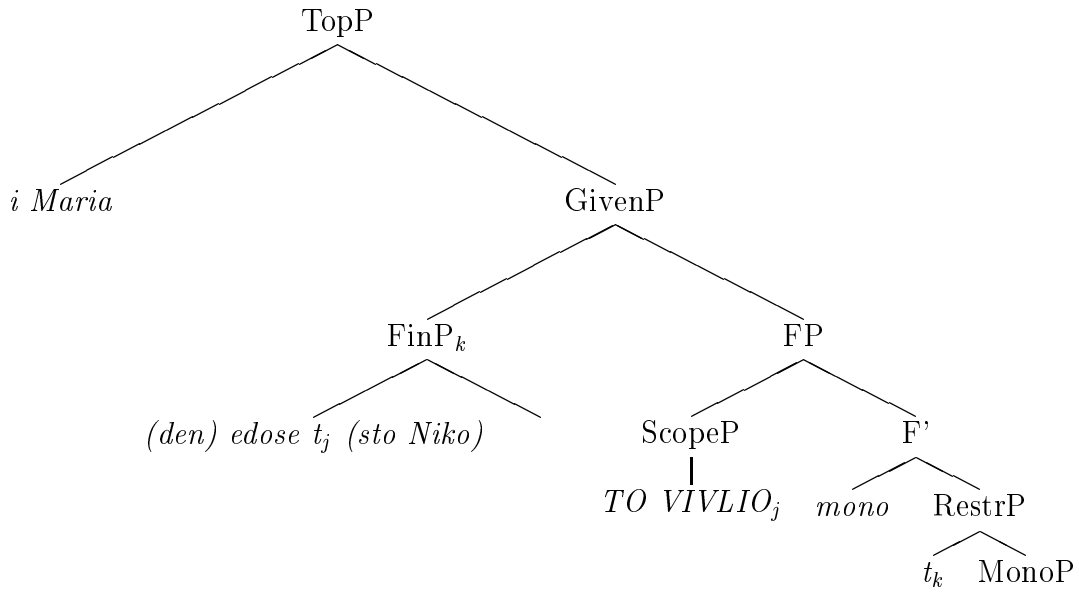
(68a)	I Maria	TO VIVLIO	mono	edose sto Niko
	Mary-nom	the book-acc	only	gave to Nikos
(68b)	I Maria	[edose]	TO VIVLIO	mono [t] sto Niko
	Mary-nom	gave	the book-acc	only to Nikos
(68c)	I Maria	[edose sto Niko]	TO VIVLIO mono [t]	
	Mary-nom	gave to Nikos	the book-acc only	
	'Mary gave only THE BOOK to Nikos.'			
(69a)	To vivlio	I MARIA	mono	to edose sto Niko
	the book-acc	Mary-nom	only	it gave to Nikos
(69b)	To vivlio	[to edose]	I MARIA	mono [t] sto Niko
	the book-acc	gave	Mary-nom	only to Nikos
(69c)	To vivlio	[to edose	sto Niko]	I MARIA mono [t]
	the book-acc	it gave	to Nikos	Mary-nom only
	'Only MARY gave the book to Nikos.'			

I will not list the variations that result a) from placing *mono* in all its possible positions (i.e., after the focused noun and at the right edge of the clause) and b) from having a clause-final topic —twenty-four possible orders in all! All these orders, though, are perfectly grammatical and present no problem for the derivation I have proposed for them in previous sections.

Let us now look at the paradigm in (68, 69). First, the same GivenP projection I have been using to derive post-verbal foci seems to be needed here. The (b) and (c) variations in the paradigm above can be derived in the same way the post-verbal foci were derived, as seen in (70), that is, by moving the verbal constituent (FinP or IP[7]) over the focused noun to GivenP.

[7]The question with (69b) is whether the whole FinP moves to GivenP or a smaller constituent than that does, such as IP. I believe it must be the latter, since the indirect

(Tree 70)



Second, although it appears as though the difference between (68b) and (68c) is that in the former we are dealing with head movement and in the latter with whole XP movement, this is not the case: We can immediately see in (69b) that there is more than a simple verb moving, since in this example the clitic moves together with the verb[8]. Also, in the negative version of this example, the negation would move together with the (clitic and) the verb, as shown in tree (70) above.

Third, the orders in the (b) examples above can be derived by first moving the Indirect object out of the verbal constituent (see footnote 7) as shown in (71b), and then moving the remnant of the verbal constituent up to GivenP (71c):

(71a) I Maria TO VIVLIO mono [edose sto Niko]

(71b) I Maria TO VIVLIO mono [sto Niko]$_i$ [edose t$_i$]

(71c) I Maria [edose t$_i$]$_k$ TO VIVLIO mono [sto Niko]$_i$ t$_k$

object *sto Niko* must move out of the verbal constituent before the rest of the verbal constituent moves up to GivenP. If we pursue the FinP movement strategy, then there is no available position (between FinP and ScopeP) for the indirect object *sto Niko* to move to. I will not try to solve this problem here.

[8]Look at footnote 7.

A question that should be answered in connection with (71) is why pied-piping the indirect object together with the verb or leaving it behind are both available. Very possibly, the reason is that each of the three orders has a slightly different meaning, i.e., what is presupposed or topicalized in each example is slightly different. I will leave this matter aside.

6.2 Focus and quantifiers

In this section, I will draw on Beghelli & Stowell (1996) and Szabolcsi (1996) and the structures they have proposed for quantifier scope positions in the pre-verbal field. They propose a hierarchical structure of quantifier phrase (QP) projections in the pre-verbal (CP?) field, where different QPs raise to get their scope. In particular, they distinguish five major classes of QPs, each class displaying different properties, and having different scoping positions available to it.

Here I will concentrate on two of the five classes, counting quantifier phrases (CQPs) and distributive quantifier phrases (DQPs). First CQPs: they are QPs like *more than* n *NPs, fewer than* n *NPs, ...*, and it is assumed that such QPs can't move beyond the positions where case is assigned to them.

Consider then the paradigm in (72):

(72a) O Giannis STI MARIA sistise pano apo 2 ipurgus
John-nom to Mary-acc introduced more than 2 ministers

(72b) O Giannis [sistise] STI MARIA [t] pano apo 2 ipurgus
John-nom introduced to Mary-acc more than 2 ministers
'It was TO MARY that John introduced more than 2 ministers.'

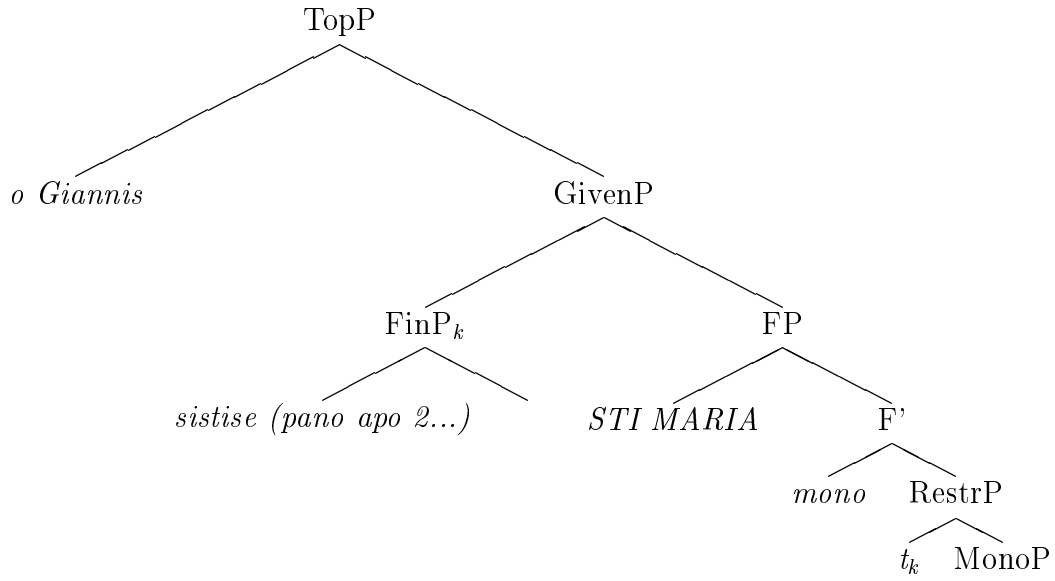
(72c) O Giannis [sistise pano apo 2 ipurgus] STI MARIA
'John introduced more than 2 ministers TO MARY.'

First, only in examples (72a) and (72b) does the focused DP have a contrastive meaning, (72c) being non-contrastive if *mono* is not present, a fact we have already noted in all previous instances of 'post-verbal' focus.

Second, variations (b) and (c) of (72) give further support to the existence of GivenP. They can be derived in exactly the same way as variations of the ditransitive examples ((68) and (69)) in the previous section, that is, by movement to GivenP projection of either FinP/IP after the focused object has moved out (71c), or a remnant of that projection after the non-focused object has moved out too (71b).

Third and most important, the assumption that the CQP *pano apo 2 ipurgus* can't really move to the preverbal field for scope reasons proves useful to our analysis: Without this assumption, we did not have any evidence whether the whole FinP/IP moved to GivenP as one constituent (pied-piping), or alternatively, whether the verb and the object moved in front of the focused noun independently of one another and to different positions. But if it's true that the CQP can't move to the pre-verbal field alone, then it must have pied-piped there along with the verb (73). In (72a), of course, the CQP is in its regular case position.

(Tree 73)



Now, let us look at examples with DQPs. These are QPs like *[kathe NP]* 'each, every NP' and they are supposed to raise to DistP for scope assignment. DistP is assumed to be between TopP and FP.

Consider then (74):

(74a)	O Giannis	STI MARIA	(*ton) sistise	kathe ipurgo
	John-nom	to Mary-acc	clit introduced	every minister
(74b)	O Giannis	(*ton) sistise	kathe ipurgo	STI MARIA
	John-nom	clit introduced	every minister	to Mary-acc
	'Only TO MARY John introduced every minister.'			
(74c)	O Giannis	kathe ipurgo	STI MARIA	*(ton) sistise
	John-nom	every minister	to Mary-acc	clit introduced
(74d)	O Giannis	kathe ipurgo	*(ton) sistise	STI MARIA
	John-nom	every minister	clit introduced	to Mary-acc
	'Every minister, John introduced him TO MARY.'			

Examples (a) and (b) give further support for the structure we have been assuming so far, of FinP/IP moving to the postulated GivenP projection. Examples (74c, d) suggest that the DQP which *precedes* the verb is in TopP. Support for this claim comes from the obligatory clitic doubling in (74c and d); as we've been assuming so far, only topicalized objects clitic double. Contrast this with (74a and b) where clitic doubling is not allowed since the DQP is the real object in that example, not a topic.

In the following section I will derive clause final topics.

7 Clause-final topics

As we've already seen in the list of possible word orders in section 2, topic DPs can also appear clause-finally. I repeat the relevant examples here as (75a) for final object topic, and (76a) for final subject topic. Topics may not occur between the focused DPs and the verb, as (75b, 76b) show:

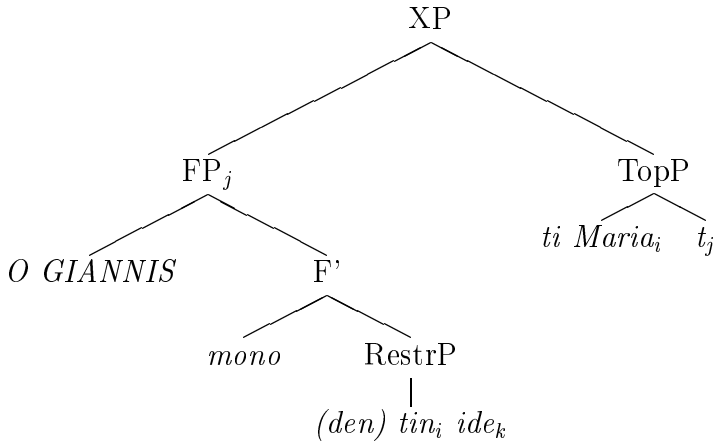
(75a)		O GIANNIS	(mono)	tin	ide	ti Maria
		John-nom	only	clit	saw	Mary-acc
		'It was only JOHN who saw Mary'				
(75b)	*	O GIANNIS	(mono)	ti Maria	tin	ide
		John-nom	only	Mary-acc	clit	saw
(76a)		TI MARIA	(mono)	(den)	ide	o Giannis
		Mary-acc	only	(not)	saw	John-nom
		'It was only MARY that John saw'				
(76b)	*	TI MARIA	(mono)	o Giannis	(den)	ide
		Mary-acc	only	John-nom	(not)	saw

Why the difference between the (a) and (b) examples? For (76), we could say that the nominative DP *o Giannis* is really the subject and that focusing

triggers Subject-Aux inversion, which would explain the unacceptability of (76b). However I will not adopt this explanation for several reasons: i) focusing has not been argued to trigger SAI in any language studied so far, ii) SAI will not explain the unacceptability of (75b), (because *ti Maria* is the object) so we will need a different story to explain that, and iii) saying that the non-focused DPs in (75, 76) are real arguments and not topics is an undesirable complication, since it necessitates different structures for the clause-initial and clause-final orders.

On the other hand, if both clause-initial and clause-final non-focused DPs are topics, a more uniform picture emerges: TopP appears, as I have been assuming so far, in the left periphery; clause-final topics result by movement of the rest of the clause around TopP, to the specifier of a projection above TopP, as shown in (77). Koopman (1996, 1997) utilizes such a projection to derive clause final topics in Dutch imperatives, by moving the whole clause over TopicP (see also Kural (1997)). Finally, both (75b) and (76b) are unacceptable because in the structure presented in (77) there is no way for the topics to intervene between FP and the verbal complex (neg-clitic-verb).

(Tree 77)



What is the nature of XP? What drives movement of the clause to [Spec, XP]? We can get some answers to these questions by looking at data from embedded clauses and the position of topics/foci relative to complementizers in the next section.

7.1 Complementizers and topic/focus

Rizzi (1995) argues for the dissolution of CP into several functional projections —in the same way that Pollock (1989) argued for an articulated IP field— based on evidence from the distribution of complementizers in relation to left-dislocated XPs in Italian. I will not reproduce his arguments here; rather, I will present evidence from Greek which supports his proposals.

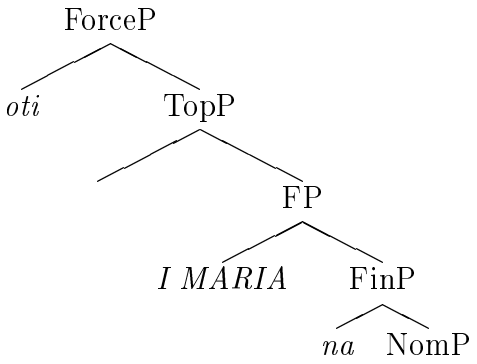
In Greek, the complementizers *pos/oti* 'that' must precede foci (78), but the subjunctive complementizer/particle *na* must follow them (79).

(78) pistevo oti I MARIA (*oti) kerdise
believe-1s that Mary won
'I believe that MARY won'

(79) pistevo (*na) I MARIA na kerdise
believe-1s Mary won
'I expect MARY to have won'

In (78) and (79), we see complementizers appearing on either side of FP — the projection where focused DPs appear. If we assume a unique C position, it is difficult to explain such data. Rizzi's proposal is that there are two different projections hosting different complementizers: a projection above TopP and FP, which he calls ForceP, and a projection below FP, which he calls FiniteP (FinP). According to him, "Complementizers in ForceP express the fact that a sentence is a question, a declarative, an exclamative, a relative, [...], and can be selected as such by a higher selector." On the other hand, FinP, expresses "... a specification of finiteness, which in turn selects an IP system with the familiar characteristics of finiteness: mood distinctions, [...]". So, according to these specifications, *oti*, the declarative complementizer in (78) will appear in ForceP, thus before the focus, and the subjunctive *na* in (79) will appear in FinP, right after the focus, as shown in (80).

(Tree 80)



Additional evidence for an articulated C system and the ForceP, FinP projections comes from the differences in distribution of relative pronouns and wh-pronouns in relation to topics. Relative pronouns must appear before topics (81), but wh-pronouns after them (82).

(81)	enas anthropos	ton opio i Maria,	(* ton opio)	ton filise
	a man	whom Maria		kissed him
(82)	(*pion)	I Maria,	pion	filise?
	who-acc	Mary-nom	who-acc	kissed
	'Who did Maria kiss?'			

In a split CP system, relative pronouns will appear in ForceP, characterizing the sentence as a relative, whereas wh-pronouns must appear in a lower position. We get evidence on where wh-pronouns appear in Greek from the inability of foci and wh-pronouns to co-occur. This fact was mentioned in section 2.1 as the wh-effect. I repeat the relevant examples here: topics can co-occur with wh-words (83), foci can't (84).

(83)	Tu Gianni,	ti	tu	ipes?
	to John	what	clit	said-2s
	'To John, what did you tell him?'			
(84)	* TU GIANNI	ti	ipes?	
	to John	what	said-2s	

This co-occurrence restriction suggests that wh-words appear at [Spec,FP], the position of focused elements, meaning they are focused. Since each clause can have only one focus, we get the badness in (84). Furthermore, it is a well known fact that in question-answer pairs, the question word can be replaced in the answer by a focused word, again suggesting that wh-words are focused:

(85a) Who wants coffee?

(85b) MARY wants coffee.

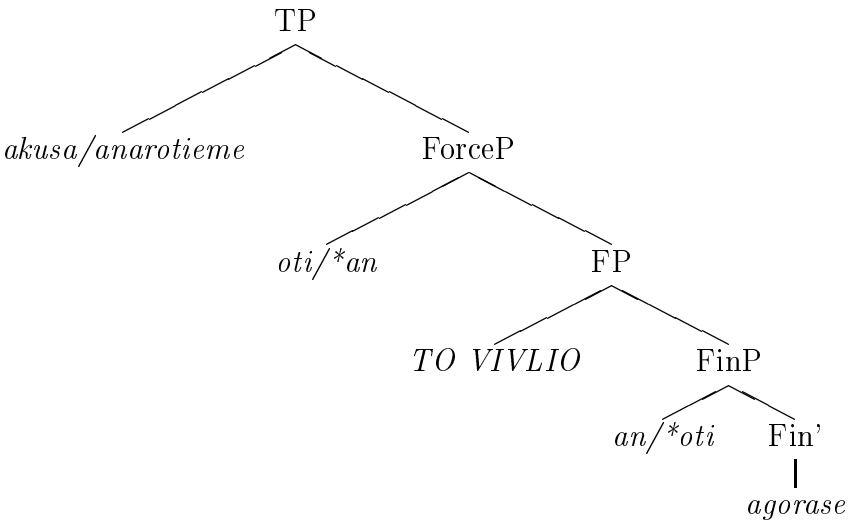
So now we can answer the questions of the preceding section: What is the nature of the XP projection above TopP and why does the clause move to it in topic-final orders? The answer: XP=ForceP and the clause moves to it to give the sentence emphatic force. A sentence that starts with a focused DP is slightly more emphatic than one that starts with a topic DP followed by focus.

There's also evidence for this split CP proposal to be found by comparing embedded declaratives with embedded questions. In the pair of examples below, we see that the complementizer *oti* in (86) has to appear before focus, while the indirect question particle *an* 'if' in (87) has to appear after focus, another indication that a split CP approach accounts for the facts better that a unique CP does. In (87), I assume that *an* fills the [Spec,FinP] position, with the verb in Fin^o.

(86)	Akusa	oti	TO VIVLIO	(*oti)	agorase	i Maria
	heard-1s	that	the book		bought-3s	Mary-nom
	'I heard that Mary bought THE BOOK.'					
(87)	Anarotieme	(*an)	TO VIVLIO	an	agorase	i Maria
	wonder-1s		the book-acc	if	bought	Mary-nom
	'I wonder whether Mary bought THE BOOK.'					

(88) shows the positions of *oti* and *an*:

(Tree 88)



8 Conclusion

I have presented focusing and topicalization, two phenomena in Greek that require a DP to appear on the left periphery of the clause, each with a different syntactic and semantic realization. Different structures for topicalization and focusing were presented: focusing involved movement to an FP projection, whereas topicalization involved base generation of the topic in TopP.

The basic argument of this study was that there is only one basic structure with unique projections for topics and foci, and that the word order variations attested in Greek all derive from that basic structure, each one being the result of a series of large XP movements and/or remnant movements. So it was shown that surface syntax involves more complex structures than it looks like at first glance. I provided structural positions for the *mono* and EI operators which give contrastive meaning to focused phrases. Furthermore, I presented evidence that both preverbal and post-verbal foci actually appear in the same position, [Spec,FP], and that post-verbal foci appear to be post-verbal because the verbal constituent has moved over the FP to GivenP, which is higher than FP. Finally, I proposed that clause-final topics are the result of movement of a large constituent over the topic phrase to the ForceP projection.

Also, I gave evidence that there is need for decomposing CP into a several functional projections —among them a topic and a focus projection— comprising the CP field.

References

[1] Antonia Androutsopoulou. On remnant DP-movement in Modern Greek. Master's thesis, UCLA, 1997.

[2] Filippo Beghelli and Tim Stowell. Distributivity and negation: the syntax of Each and Every. In Anna Szabolcsi, editor, *Ways of Scope Taking*, pages 71–109. Kluwer Academic Publishers, 1996.

[3] Michael Brody. Remarks on the order of elements in the Hungarian Focus Field. In Istvan Kenesei, editor, *Approaches to Hungarian*, volume 3. JATE, Szeged, 1990.

[4] Michael Brody. Focus and Checking Theory. In Istvan Kenesei, editor, *Levels and Structures*, volume 5 of *Approaches to Hungarian*. JATE, Szeged, 1995.

[5] Gennaro Chierchia. *Dynamics of Meaning*. University of Chicago Press, 1995.

[6] Noam Chomsky. Conditions on Rules of Grammar. *Linguistic Analysis*, 2:303–352, 1976.

[7] Guglielmo Cinque. *Types of A'-Dependencies*. MIT Press, Cambridge, Massachusetts, 1990.

[8] Edward Garrett. XP Focus and problems of scope in Nweh. Ms., UCLA, 1996.

[9] Julia Horvath. Structural Focus, Structural Case, and the notion of Feature-Assignment. In Katalin É Kiss, editor, *Discourse Configurational Languages*, pages 28–64. Oxford University Press, New York, 1995.

[10] Julia Horvath. Interfaces vs. the Computational System in the syntax of Focus. Handout from talk, Tel-Aviv University, 1997.

[11] Sabine Iatridou. Clitics and island effects. Ms., MIT, 1990.

[12] Richard S. Kayne. Overt vs. covert movement. Ms, New York University, 1997/1998.

[13] Istvan. Kenesei. On the logic of Hungarian word order. In S. Abraham, W.-de Meij, editor, *Topic, Focus, Configurationality*. John Benjamins, 1986.

[14] Katalin É. Kiss. The Focus Operator versus Information Focus. Ms., 1997.

[15] Hilda Koopman. The Spec-Head configuration. In Edward Garrett and Felicia Lee, editors, *Syntax at Sunset*, volume 1 of *UCLA Working Papers in Syntax and Semantics*, pages 37–64, 1996.

[16] Hilda Koopman. Imperatives. Presented at Nias, 1997.

[17] Hilda Koopman and Anna Szabolcsi. Hungarian verbal complexes: incorporation as XP movement. Ms., UCLA, 1997.

[18] Manfred Krifka. Association with Focus and association with Focus phrases. Handout from a talk at UCLA, 1996.

[19] Murat Kural. Postverbal constituents in Turkish and the Linear Correspondence Axiom. *Linguistic Inquiry*, 28(3):498–519, 1997.

[20] L. Kalman N. van Leusen. *The semantics of free Focus*. ILLC Prepublications, University of Amsterdam, 1993.

[21] Barbara Partee. Topic, Focus and Quantification. In S. Moore and A. Wyner, editors, *Proceedings from SALT I*, Ithaca, NY, 1991.

[22] Matthew Pearson. Pied-piping into the left periphery. In *NELS 27*, 1997.

[23] Jean-Yves Pollock. Verb movement, UG and the structure of IP. *Linguistic Inquiry*, 20:365–424, 1989.

[24] Luigi Rizzi. The fine structure of the left periphery. Ms., Université de Genève, 1995.

[25] Michael S. Rochemont. *Focus in Generative Grammar*. John Benjamins, Amsterdam, 1986.

[26] Michael S. Rochemont and Peter W. Culicover. *English Focus constructions and the Theory of Grammar*. Cambridge University Press, Cambridge, 1990.

[27] Mats Rooth. *Association with Focus*. PhD thesis, University of Massachusetts, Amherst, 1985.

[28] Mats Rooth. A Theory of Focus Interpretation. *Natural Language Semantics*, 1:75–116, 1992.

[29] Mats Rooth. Focus. In Shalom Lappin, editor, *Handbook of contemporary Semantic Theory*, pages 271–297. Blackwell, Oxford, 1996.

[30] Anna Szabolcsi. The semantics of Topic-Focus articulation. In J. Groenendijk et al., editor, *Formal Methods in the Study of Language*, volume 2, pages 503–540. Matematisch Centrum, Amsterdam, 1981.

[31] Anna Szabolcsi. Focusing properties, or the trap of First Order. *Theoretical Linguistics*, 10:125–145, 1983.

[32] Anna Szabolcsi. All Quantifiers are not equal: the case of Focus. *Acta Linguistica Hungarica*, 42:171–187, 1994.

[33] Anna Szabolcsi. Strategies for Scope Taking. In Anna Szabolcsi, editor, *Ways of Scope Taking*, 1996.

[34] Ianthi Maria Tsimpli. Focusing in Modern Greek. In Katalin E. Kiss, editor, *Discourse Configurational Languages*. Oxford University Press, 1995.