Subject–verb Inversion in Greek: 
Implications for Head Movement and 
Typology*

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Abstract

The empirical domain of investigation in this paper is the phenomenon of ‘obligatory (subject–verb) inversion’ in Greek, whereby a subject cannot intervene between a fronted interrogative phrase and the inflected verb in constituent questions. The paper examines three accounts of the phenomenon that have been proposed in the literature and provides a host of evidence against two of them, which employ T–to–C head movement. I also show

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that the third analysis (Anagnostopoulou 1994), which relies on Relativized Minimality (Rizzi 1990, 2001), is not entirely satisfactory and I propose to supplement it with a condition requiring PF (linear) adjacency between the verb group (V+clitics+preverbal particles) and the covert interrogative C_{+Q} at PF. Having established the fact that this requirement is distinct from V–to–T verb movement I (i) argue that ‘normal’ head movement belongs to narrow syntax (contra Chomsky 2001), and (ii) examine the typology of inversion, by considering the similarities and differences of the Greek inverted orders to these of other languages.

Keywords: head movement, obligatory inversion, Greek, adjacency, T–to–C movement

1. Introduction

In this paper, the phenomenon of obligatory inversion (that is, subject–verb inversion in constituent questions) will be examined in an attempt to answer the following major question:

(1) Does Greek exhibit T–to–C movement in obligatory inversion contexts?

This is a question of importance, given the fact that the Greek verb moves at least as high as T\textsuperscript{1} in declaratives in order to pick up (or—alternatively—check) its inflectional features, but it is questionable whether it proceeds to C in interrogatives, despite the obligatory V–S order exhibited in them.\textsuperscript{2}

If indeed the covert interrogative complementizer in Greek is a

\textsuperscript{1} In the rest of this paper I will follow Iatridou (1990), Chomsky (1995) and Spyropoulos (1999) (in the literature on Greek) in assuming an AGR-less functional hierarchy (but see Guasti & Rizzi 2002), although this assumption is not crucial to the proposals made here.

\textsuperscript{2} See the discussion in Theophanopoulou-Kontou (2002: 165).
bound question morpheme \([Q]\) (see Baker 1970; Radford 1997; Roberts & Roussou 2002) that needs a host, then head movement to \(C\) should be obligatory in Greek. If, however, this is not the case, then two questions arise: (i) How is the \(Q\) element/[wh]-feature of \(C\) accommodated in Greek, and (ii) what gives rise to subject–verb inversion in interrogative contexts in Greek?

These two issues will be examined in this paper, and will prompt a re-examination of obligatory inversion in Greek and a new approach to the phenomenon, in which it will be claimed that obligatory inversion is not the effect of a single cause, but it is brought about by the interplay of two independent factors:

(2) a. the Relativized Minimality effects that left-dislocated preverbal subjects induce with respect to \(A'\)-movement, and

b. an adjacency requirement between the clause-typing interrogative complementizer (henceforth, \(C_{[Q]}\)) and the phonological phrase of the verb group).

The present analysis of obligatory inversion will have important consequences for both the status of head movement in syntactic theory and the overall typology of inversion:

The status of head movement has been a debated topic in current syntactic research (see, among many others, Chomsky 2000, 2001; Koopman & Szabolcsi 2000; Boeckx & Stjepanović 2001; Zwart 2001; Lambova 2002) with opinions divided as to whether it belongs to the narrow syntactic component or to the phonological one (PF). I assume in this paper that if two different relations of proximity holding between successive syntactic heads are distinguished, one sensitive to hierarchical relations and displaying the ‘traditional’ characteristics of head movement (mostly the Head Movement Constraint (HMC)), and the second being subject to constraints pertaining to linearization only, then we should attribute the former
to narrow syntax and the latter to PF. If such a distinction can be made, and it will be the aim of this paper to show that it can, then there is evidence for the existence of strictly syntactic head movement (although the existence of PF operations relating phonological phrases and—possibly—heads with each other is also evidenced).

As for the overall typology of (obligatory) subject–verb inversion, it will be noted that obligatory inversion is obtained (a) by movement of the verb to C when C\textsubscript{[+Q]} is a bound affix, and (b) by C-verb group adjacency when C\textsubscript{[+Q]} is a particle. Of course, a third option is also realized, according to which (c) C\textsubscript{[+Q]} is an autonomous head, i.e., an interrogative complementizer. These three options correlate with differing degrees of tolerance with respect to \textit{wh}-verb adjacency. Violation of this adjacency gives a *-violation in the case of T–to–C movement, it gives a ?-violation in the case of linear C-verb group adjacency, and no ungrammaticality when C\textsubscript{[+Q]} is an autonomous head.

This paper is structured as follows. In section 2, I present the core facts of obligatory inversion in Greek and specify the three major accounts of the phenomenon that have been offered in the literature. Section 3 is an interlude introduction to clause structure in Greek that will be helpful for the rest of the discussion. Section 4 is devoted to the examination of the possible causes of obligatory inversion in Greek and the problems they exhibit. In section 5, I present the core proposal of this paper. In sections 6 and 7 the implications of the proposal for head movement and typology (respectively) are presented. Section 8 concludes the article.

2. Obligatory Inversion: The Descriptive Alternatives

\textit{Obligatory} (or triggered) \textit{inversion} (cf., Torrego 1984, Suñer
1994, Uriagereka 1999, Zubizarreta 2001 among others), is obtained in structures where a subject may not intervene between a fronted wh-phrase and the inflected verb in a constituent question, exemplified below:

(3) a. I maria aghapai ton ilia.
the Maria.NOM love.3SG the Ilias.ACC
‘Maria loves Ilias.’
b. Pjon aghapai i maria?
who.ACC love.3SG the Maria.NOM
‘Who does Maria love?’
c. I maria pjon aghapai?
the Maria.NOM who.ACC love.3SG
‘Who does Maria love?’
d. *Pjon i maria aghapai?
who.ACC the Maria.NOM love.3SG
‘Who does Maria love?’

(3a) is a normal SVO declarative in Greek. After object wh-fronting, the subject surfaces either on the right of the verb, as in (3b), or before the preposed wh-element (as in (3c)\(^3\)). The order \(wh\)-element–subject–verb (shown in (3d)) is ungrammatical. This is, of course, a well-known pattern in Romance, as we can see in the parallel examples (4a) to (4c):

(4) a. Che cose (*Maria) ha detto (Maria)?
What Maria has said Maria
‘What has Maria said?’

\(^3\) In this case the subject occupies a CP-adjoined or even CP-external position. This is tolerable in Greek. Consider cases where the left-dislocated subject precedes an embedded complementizer:

(1) panta pistevame o janis oti tha ghinotan spudheos.
Always believed.1PL the Janis.NOM that would become.3SG important
‘We always believed that John would become important.’
The phenomenon is termed *obligatory inversion* in order to be distinguished from so-called *free inversion*, a term attributed to cases of optional positioning of the subject in postverbal position in declaratives of null subject languages (cf., Burzio 1986, Brandi & Cordin 1989):

(5) Aghapai I maria ton ilia.
love.3SG the Maria.NOM the Ilias.ACC
‘Maria loves Ilias.’

I will not be concerned with free inversion in this paper; the reader is referred to rich bibliography in Greek discussing the placement of the subject in inverted declaratives (Philippaki-Warburton 1985; Alexiadou 1999, among others). I will, nevertheless, use this term in subsequent sections, where it will be proposed that obligatory inversion in Greek questions is actually a subcase of free inversion.

Let us return to obligatory inversion. As far as I know, there are three ways to explain the facts in (3-4). First of all, cases like these have been explained as a consequence of overt I–to–C (or T–to–C, in more recent terms) verb movement (Rizzi 1996). In this view, the subject occupies its canonical preverbal position ([Spec, TP] or, as we will see, [Spec, TopP] in Greek) and the verb moves past it all...
the way up to C. According to this account, obligatory inversion is akin to the verb second phenomenon of Germanic languages, which is supposed to involve fronting of a constituent to [Spec, CP] followed by T–to–C movement (den Besten 1983).⁴

(6)

A second way to explain the facts in question might not employ subject–verb inversion at all (in the sense of actual movement of one of the two elements). This view makes use of the well-known fact that preverbal subjects in Greek (as in other languages, see Barbosa 1995) do not occupy the canonical [Spec, TP] position but are Clitic Left Dislocated Elements, i.e., elements occupying a base-generated position in the left periphery (presumably, in [Spec, TopP]). If we now assume that the projection that hosts topics is consistently situated higher than the projection that contains the question morpheme (C/F(ocus)) in Greek, then we derive the desired result: a subject can precede the wh-element or follow the verb in a

⁴ In (2) and subsequent tree-diagrams and other examples I follow the (by now standard) minimalist convention of representing silent copies (‘traces’) of moved elements in strikethrough font.
constituent question, but it can never intervene between them, so according to this explanation, (7) represents (3c).

If we follow this alternative we might again suppose that T–to–C movement is operative in Greek. So, although the two first accounts differ in the exact positioning of the subject, they converge as to the presence of T–to–C/F movement (even if this is not a necessity but a possibility in the latter construction). A third way to account for ‘obligatory inversion’ does not involve verb movement to C at all. According to this explanation, ‘obligatory inversion’ is a sub-instance of free inversion, that is, the verb in (3b) moves as high as T only and the subject occupies its VP-internal position. What bans the sequence \( wh \)-element–subject–verb in (3d) is a prohibition on A’-movement across an A’-specifier (the left dislocated subject). So,
according to this view, the phenomenon is a case of relativized minimality violation (in the sense of Rizzi 1990), with the A’-subject prohibiting the formation of the A’-chain, as we see in (8).

(8) *

If this explanation is true, then (3c) is licit because the subject is situated in a higher projection than the one that hosts the moved wh-element and, therefore, it does not interfere with A’-movement. The subsequent sections will be devoted to discussion of these three alternatives. If the first or the second is correct, then Greek exhibits T–to–C alongside V–to–T head movement. In such a case (i) there is no way for us to check whether these two instances of head movement are both phonological or both syntactic, and (ii) Greek obligatory inversion is akin to ‘residual verb second’ in Romance, as described by Rizzi (1996).
However, I will show that an analysis endorsing T–to–C faces severe empirical defects, as observed also by Anagnostopoulou (1994), and I will partially support the third account of the phenomenon, attributing a major part of obligatory inversion phenomena to a Relativized Minimality effect. This will open up the question of what prompts and what prohibits head movement, since it will be argued that the verb cannot move any further than T in Greek due to (a) the lack of inflectional triggers and (b) the blocking effects of preverbal particles.

However, I will also depart from Anagnostopoulou’s account in claiming that Relativized Minimality alone cannot capture all the peculiarities of Greek obligatory inversion which is also caused by a requirement of linear adjacency between the head containing the covert question morpheme/particle and the phonological group comprising the inflected verb and the elements phonologically attached to it (particles and clitics).

3. Greek Clause Structure

In this section I present some basic characteristics of clause structure in Greek that will be relevant to our discussion in the subsequent sections. As is well known, Greek is a null subject language with rich verbal inflection. Almost all possible word orders are tolerated in Greek, but the VSO and SVO are the predominant ones, with VSO being more unmarked (Philippaki-Warburton 1985) and, hence, assumed to be ‘basic’. Subjects may appear on either side of the verb and, when overt, in VS(O) structures they are said to occupy their VP-internal base position. On the other hand, subjects in SV(O) structures have been shown to exhibit topic-like properties and differ in a number of crucial respects from ‘legitimate’ [Spec, TP] subjects of other languages. It has thus been proposed (Philippaki-Warburton 1987, Tsimpi 1990, Alexiadou & Anagnostopoulou...
1999, Spyropoulos 1999, Spyropoulos & Philippaki-Warburton 2001) that they occupy a peripheral position ([Spec, TopP] or left-adjoined to some high functional projection) and are coindexed with an argumental *pro*.\(^5\)

\[(\text{TopP subject} \ldots [\text{TP} \ldots [\text{VP} \ldots \text{pro} \ldots [\ldots ]]]]\]

This topicalized position differs from the canonical [Spec, TP] position, among others, in the fact that it is an A’-position instead of an A-position. This fact will become relevant later on in this paper.

A further characteristic of Greek syntax that will prove useful in our discussion is the fine structure of the left periphery. Apart from the required Focus and Topic projections and the projection of the complementizer (CP), Greek is assumed to have projections that host a number of preverbal particles which end up phonologically attached to the verb stem. These are the Mood particles *na/as* (marking the subjunctive), the particles *dhen* and *min* marking negation and the future particle *tha*. Although it has been proposed that these particles are part of the verbal inflection, akin to bound morphemes by some researchers (Joseph 2002), in this article I will follow the analysis of Philippaki-Warburton & Spyropoulos (1999), who offer ample evidence for their being particles and not affixes. The structure of these particle layers, as proposed in Philippaki-Warburton (1998) is the following:

\[^5\] And possibly, in Spyropoulos and Philippaki-Warburton’s system also with a null subject clitic in [Spec, TP] (but see Kotzoglou 2001 for some counterarguments).
If we now follow standard practice by supposing that a focus projection is situated between CP and MoodP and a Topic projection is found below the focus one, then we have the following structure:

(11) \[ CP \[ FocP \[ TopP \[ MoodP \[ NegP \[ FutP \[ Fut \[ TP \ldots \]]]]]] \]

What remains is a higher topic projection which will accommodate pre-complementizer topics in Greek, since topics can appear on either side of a complementizer (see also footnote 3):

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6 See Roussou (2000) for a novel account adopting and extending proposals by Rizzi (1997) concerning the left periphery. I think that Roussou’s claims are not incompatible with the core proposals put forth in the present paper since Roussou’s proposal also: i) distinguishes between the particle status of mood elements such as na (and even tha, in her analysis) and the affixal imperative ending, and ii) attributes the unavailability of negative imperatives to a blocking effect of negation.
(12) Ksero (i matina) oti (i matina)  
know.3SG the matina.NOM that the Matina.NOM  
enthusiazete efkola.  
grow-enthusiastic.3SG easily  
‘I know that Matina grows enthusiastic easily.’

So, it will be assumed in the rest of the paper that clause structure in Greek is as follows:

(13) [TopP [CP [FocP [TopP [MoodP [NegP [FutP [TP . . . ]]]]]]]]

4. Accounts of Inversion

Let us now turn to the examination of the three accounts of obligatory inversion that I discussed in section 2. A first step would be to reduce them to two for our purposes. This move becomes almost straightforward once we take into consideration the similarities of the first two explanations of inversion presented. The first one requires movement of the wh-element in [Spec, CP] (or whatever the relevant position for moved wh-phrases is), and movement of the verb to the head of this projection. Inversion in Greek applies when the subject remains either in its base ([Spec, VP]) or its left dislocated ([Spec, TopP]) position:

(14) [CP wh-element [C- verb [TopP subject . . . [TP verb . . . [VP subject]]]]]

So, (14) is the structure attributed to cases like (3b). Cases like (3c) can be explained in this account if we assume the existence of a pre-CP topic projection that may host ‘subjects’ (as in (13), cf., footnote 3).

The second way of explaining obligatory inversion effects, which I presented in section 2, resembles the first one in every
respect apart from having a topic projection lower than the landing site of the verb. That is, this position assumes that (3b) can have only the following structure:

\[(15) [_{CP \text{wh-element}} [_{C' \text{verb}} [_{TP \text{verb}} . . . [_{VP \text{subject}}]]]]\]

In other words, proponents of this solution would claim that the projection that hosts wh-elements in matrix clauses is necessarily lower than the one that hosts left dislocated subjects (and, for that reason, SVO subjects).

A possible argument for the existence of a low topic projection that hosts subjects might come from the fact that complementizers in embedded questions can precede (as well as follow) SVO subjects, as we saw in (12). Moreover, as we shall see below, preverbal subjects seem to be marginally tolerated between a fronted wh-element and the inflected verb if the fronted element is an adjunct:

\[(16) \text{?Pote o pantelis kerdhise to propo?} \]
\[\text{when the Pantelis.NOM won.3SG the pools.ACC} \]
\[\text{‘When did Pantelis win the pools?’} \]

If the account of the ‘subject–above–focus/wh’ projection (presented in (3c)) were true, then sentences like (16) would be completely ungrammatical, since the landing site of the wh-element should always be lower than the position of the preverbal subject. So, I conclude that this account falls short of explaining the Greek data.

4.1. Residual T–to–C and Verb Raising

In effect, then, I have reduced the possible explanations of obligatory inversion in Greek to two, one explaining the phenomenon as a consequence of verb movement and the spec–head relation and a second claiming that it is the intervention of the
subject in the A’-chain of the wh-element that creates ungrammaticality. The first analysis is directly influenced by verb second phenomena in Germanic languages, and more specifically by the work of den Besten (1983). As mentioned in section 2, this analysis maintains that the inflected verb moves from T–to–C (possibly via other intermediate head projections) and thus it remains adjacent to the wh-element which is fronted in [Spec, CP]. The subject remains in its derived [Spec, TP] position, as shown in (17).

\[
(17) \left[ \text{CP } \text{wh-element } \left[ C' \text{ verb } [\ldots [\text{TP subject } [T' \text{ verb } [\text{VP } \ldots ]]]]] \right] \right] \text{ (see also (2))}
\]

If we wish to be in accordance with the Greek descriptive apparatus presented in the previous section, then in the above structure the position of the subject is [Spec, TopP].

\[
(18) \left[ \text{CP } \text{wh-element } \left[ C'/\text{Foc'} \text{ verb } [\ldots [\text{TopP subject } [\ldots [\text{TP verb } [\text{VP } \ldots ]]]]] \right] \right] \text{ (see also (2))}
\]

The essence of the argument is the same, of course under either interpretation.

Let us now see closely what would force T–to–C movement in this account. The original proposal by Rizzi relies on the postulation of a criterion, the ‘so-called’ wh-criterion, forcing the spec–head relation between an operator and the inflected verb:

\[
(19) \text{Wh-criterion}
\]

a. A wh-operator must be in a Spec–head configuration with a [\(+wh\) X\(^0\)].
b. A [\(+wh\) X\(^0\)] must be in a Spec–head configuration with a wh-operator.

(Rizzi 1996: 64)

In Rizzi’s account, it is assumed that the verb (more specifically,
T/I which is incorporated on the verb) has a [+\textit{wh}] feature that needs to be checked against a raised operator. This requirement drives \(T\rightarrow C\) movement.

However, the spec–head relation is no longer a viable theoretical tool within the minimalist program. In the more recent versions of minimalism, it is supposed that the alleged spec–head relation is actually the relation between a probe that seeks satisfaction of a certain feature and a goal that remains ‘active’ in the derivation and can satisfy the feature of the probe. Movement of the goal to the Spec of the probe is not triggered by any specific ‘Spec–head’ requirement, but by the presence of an EPP- (or, more recently Chomsky 2004, OCC-(urrence)) feature on the probe. So, let us suppose that interrogative \(C\) contains (either intrinsically or via \(T\rightarrow C\)) an uninterpretable \textit{wh}-feature (\(u\textit{wh}\)) that needs to be eliminated by Spell-Out and it also has an EPP-feature. Then it probes for a phrase that contains an interpretable \textit{wh}-feature. By long-distance Agree, the \textit{wh}-feature of the probe is satisfied and subsequently the \textit{wh}-phrase becomes a Spec of the probing head ([\textit{Spec, CP}]) because of the EPP-feature. This explains the second clause of the \textit{wh}-criterion (19b) in minimalist terms.

However, (19a) remains unaccounted for, because this clause requires of the moved \textit{wh}-element to act as a probe and trigger \(T\rightarrow C\).\footnote{Recall that for Rizzi the \textit{wh}-feature on the verb is generated on \(T\) (I, in Rizzi’s system) rather than \(C\). If it were on \(C\), \(T\rightarrow C\) movement would not be motivated in (17).} Such a situation is theoretically untenable within minimalism since (a) once movement to Spec, CP has taken place narrow syntactic movement to \(C\) is countercyclic, (b) movement after a probe-goal relation is triggered by an EPP-feature; we cannot assume that such a feature is present on the moved \textit{wh}-phrase (and if it were it would be strange if it could target heads and move them to its right).
So, following Rizzi’s system has brought us to a difficult situation. An [$uwh$] feature on C is required so that it can trigger the $wh$-dependency (and, via EPP, the $wh$-movement), but (i) if this feature is on C then it cannot trigger T–to–C movement, (ii) if it is on T, then there is no theoretically satisfactory way within the minimalist program for us to account for T–to–C either, since this feature is the one that triggers $wh$-movement to [Spec, CP] and it is not the case that the phrase moved to [Spec, CP] induces T–to–C so that the [$uwh$] will be brought in a Spec–head relation with it.

The theoretical solution, which is by no means novel, is to assume that T–to–C is not driven by the $wh$-criterion but by an independent requirement of the interrogative C head. Suppose, in other words, that C hosts a Q element with clause-typing properties (akin to a covert interrogative complementizer) and that this element is also a bound morpheme.8 Then, T–to–C movement would be triggered by the need of this morpheme to be accommodated, in the same way that Tense, Agreement, Aspect and other morphemes trigger head movement. The existence of a Q element is obvious in languages where it is overt like Japanese (although in these languages Q is not a bound morpheme, but an autonomous head).

We might then assume for the time being (seeking to ‘save’ the T–to–C account) that the interrogative C head in Greek might contain a [Q] morpheme and it also comes with two kinds of features: [$uwh$] and [EPP]. The Q needs to a host (as a bound morpheme), while the [$uwh$]-feature probes the first available $wh$-phrase in its domain and EPP$_C$ triggers pied-piping of the $wh$-phrase to [Spec, CP].9 This account might explain the data in (2).

However, a number of complications arise once we consider the

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9 I am setting aside the possibility that head movement might work in an EPP-triggered fashion as well (in other words, that C might have another EPP-feature triggering verb movement, as in Matushansky 2006). Even if this is so, the argumentation put forth here is not affected.
case more closely. First of all, as observed by Anagnostopoulou (1994), there is a contrast between the ungrammatical sentence in (3d) and the considerably better (20), where the wh-element that is fronted is D-linked (in the sense of Pesetsky 1987).

(20) ?Pjon apo tus filus su
which.ACC of the friends.ACC your.GEN
o nikos dhen kalese sto parti?
the Nick.NOM NEG invited.3SG at party.ACC
‘Which of your friends didn’t Nick invite at the party?’

If we assume that the ungrammaticality of (3d) is caused by the local relation between [Spec, CP] and the head C, where T has raised, then we are left with no place to accommodate the subject in (20), which is a sentence considerably better than (3d). What is more, we do not seem to have an explanation for the contrast between the two judgments (* vs ?) holding in the case of non-D-linked versus D-linked wh-elements. Thus, the ‘residual verb second’ account faces problems.

A second complication concerns the pattern of embedded frontings. Unlike V2 in the Germanic languages, which show a root/nonroot asymmetry with respect to T–to–C, Greek shows obligatory inversion even in embedded contexts, as we see in (21):

(21) a. Dhen ksero pjon skeftete i
NEG know.1SG whom.ACC thinks.3SG the
roksani.
Roxanne.NOM
b. *Dhen ksero pjon i roksani
NEG know.1SG whom.ACC the Roxanne.NOM
skeftete.
thinks.3SG
‘I do not know who Roxanne is thinking of.’
In this respect, Greek obligatory inversion differs from English residual verb second:

(22) a. *I do not know who.ACC likes Roxanne.NOM.
    b. I do not now who.ACC Roxanne.NOM likes.

Thirdly, parentheticals can intervene between the fronted wh-element and the verb, as in (23), contrary to expectations.

(23) Pjon lipon pantreftike i mirsini?
    whom.ACC well married.3SG the Myrsine.NOM
    ‘Who did Myrsine marry?’

If we assume (with Cardinaletti 1997) that parentheticals cannot attach to an intermediate projection, then we have to admit that the wh-element and the verb cannot be in a Spec–head relation in the structures under consideration.

Moreover, my main objection to T–to–C in Greek is based on the order of preverbal particles in Greek. The structure I assume, as I said in section 3, is that of (24=10):
What is interesting for our discussion is the fact that if obligatory inversion is derived by head movement to C, then the preverbal particles do not appear to block T–to–C movement. When a negated verb is questioned, or when a verb in the subjunctive mood is questioned, the relevant particles appear on its left, as in non-inverted orders:

(25) a. Pjon [dhen tha apolisi] o petros?
   whom.ACC NEG will fire.3SG the Peter.NOM
   ‘Whom will Peter not fire?’

b. Se pjon [na dhosi] o
to whom.ACC SUBJ give.3SG the
tachidhromos to ghrama?
postman.NOM the letter.ACC
   ‘To whom should the postman give the letter?’

First of all, this state of affairs is strange, if we assume a theory of incorporation such as Baker’s (1985, 1988) where the order of the incorporated elements is the mirror image of the order of their respective projections. In other words, if we assume a T–to–C movement account of obligatory inversion in Greek, with the verb moving head–to–head up to C, then we should expect the order of morphemes with respect to the verb stem to be a mirror order of their hierarchical projections. If this were so, then we should expect the exponents of Mood, Negation, Future to appear on the right of the verb stem.

However, the situation is completely different in the Greek ‘verb group’\textsuperscript{10}: we find some ‘low’ inflectional elements which are normally attached to the right of the stem (such Aspect, Tense, Agreement, etc.), and a number of preverbal elements which exhibit

\textsuperscript{10} I call here ‘verb group’ the inflected verb plus its phonological paraphernalia (particles and clitics).
a completely different behaviour, they are left attached/adjoined to the verb. If we wish to maintain the idea that I have entertained in the last couple of paragraphs, that is, that preverbal elements are also affixes picked up by verb movement, then we have to ask why they are not attached to the right of the verb stem, as low inflectional affixes do.\textsuperscript{11} If, on the other hand, we want to give to these particles the status of autonomous preverbal heads, then we should ask why they do not induce Head Movement Constraint effects (in (25), for example) and we should also account for the fact that they end up phonologically attached to the verb. Both of these problems are avoided if we assume that T–to–C movement does not exist in Greek.

Preverbal particles lead us to a further observation concerning T–to–C. We can see in (24) that Mood (or C in Rivero 1994, 2001) accommodates the imperative suffix. Note here that in T–to–Mood movement negation does act as a blocker:

\begin{align*}
\text{(26) a. } & \text{Dhose } stο \text{ niko to vivlio!} \\
& \text{give.2SG to-the Nick.ACC the book.ACC} \\
& \text{‘Give the book to Nick!’}
\end{align*}

\begin{align*}
\text{b. } & \text{*Dhose mi sto niko to vivlio!} \\
& \text{give.3SG NEG to-the Nick.ACC the book.ACC} \\
& \text{‘Don’t give the book to Nick!’}
\end{align*}

So, we are left with a puzzle. Negation seems to permit T–to–C in questions (appearing on the left of the verb), but block T–to–Mood in imperatives. If both (25) and (26) are instances of head

\textsuperscript{11} Of course, a strictly lexicalist approach to verb formation might be adopted with verbs fully inflected in the beginning of the derivation but, even then, the fact that (i) the way the two aforementioned domains are configurationally distinct (above and below TP) and (ii) the different placement of their exponents with respect to the verb stem cannot be accidental (see on this Philippaki-Warburton & Spyropoulos 1999).
movement, then the different patterning of NEG with respect to blocking of movement cannot find a principled explanation. On the other hand, an account that rejects T–to–C in Greek questions does not seem to face any problem with these data. Since the exponent of imperative mood in Greek is not a particle but a bound affix I assume that it triggers head movement which is subject to the HMC, whereas the non-movement T–to–C relation in (25) is not.

A further puzzle for the T–to–C account concerns the placement of pronominal clitics. These are normally proclitic with respect to the verb.

(27) To ksero.
    it.ACC know.2SG
    ‘I know it.’

and they follow negation and the Future particle:

(28) Dhen tha to vro.
    NEG FUT it.ACC find.1SG
    ‘I won’t find it.’

Clitics are generally assumed to target either T itself or TP\(^{12}\) (or a projection near it). Interestingly, clitics appear on their usual (proclitic) position in obligatory inversion contexts, a fact that indicates that they are carried along with T if we wish to maintain a T–to–C movement solution:

(29) Poses iposchesis tu edhoses?
    how-many promises.ACC him.GEN gave.2SG
    ‘How many promises did you give to him?’

On the other hand, clitics appear to the right of the verb in imperatives:

(30) a. Kita me!
    look.3SG me.ACC

    *Me kita!
    me.ACC look.3SG

‘Look at me!’

Again, if (the alleged) T–to–C and T–to–Mood were both instances of the same operation of head movement, we would expect clitics to pattern alike with respect to the directionality of their attachment. If cases like (30) are derived through clitic attachment on the verb and subsequent verb excorporation from the V+clitic bundle for verb movement to a higher head, then it is curious that this does not happen in (29), if (29) involves T–to–C movement.

So, evidence from the effects of D-linked wh-elements on the grammaticality of inversion, as well as the consideration of the distribution of particles and clitics lead us to the conclusion that obligatory inversion in Greek does not involve T–to–C movement. The subject does not occupy the left dislocated position it has in normal SVO in Greek, but rather the thematic [Spec, VP], as in ‘free inversion’ VSO constructions.

Therefore, no verb movement to C takes place in Greek constituent questions. The verb moves as far as T, in order to pick up the inflectional affixes and subsequent verb movement is blocked by the preverbal particles. Verb movement to Mood takes place only in imperatives, triggered by the inflectional morphology (that is, the imperative suffix). This instance of verb movement is blocked by an intervening negation head and leaves the clitic in a position to the right of the verb (I assume with Philippaki-Warburton et al. 2002, 2004 that clitics target the periphery of TP).

A possible counterexample to this proposal might be argued to
derive from the behaviour of the periphrastic verb forms in Greek. These are formed by the auxiliary verb *echo* (have) plus a non-finite perfective form of the verb:

(31) Echo potisi ta luludhja.
    have.1SG water.1PERF.ACT the flowers.ACC
    ‘I have watered the flowers.’

In (31), it is generally assumed that the auxiliary verb moves as far as T and the main verb raises above VP, at least as far as VoiceP, through AspP (since it inflects for both). In any case, the main verb raises above the base position of the subject and lower than TP. Now, if we assume that in obligatory inversion the inflected part of the periphrastic forms stays in T, then we have a difficulty in explaining forms like (32).

(32) Pjon ichan ta pedhja
djhaleksi ja arxigho tus?
    who.ACC had.3P1 the children.NOM
    chose.3PERF.ACT for leader.ACC their
    ‘Whom had the children chosen as their leader?’

A T–to–C account seems to be supported by (32), since in this account the subject *ta pedhja* occupies its [Spec, TopP] position without problems. On the other hand our account (which argues that the inflected verb moves no higher than T in obligatory inversion) seems to face a problem in accommodating the subject. However, this is not a real problem, since the subject can intervene between auxiliary and verb in declarative instantiations of the periphrastic forms, as in (33):
It seems, therefore, that the possibility of having a subject position between T and Voice exists independently at least for a number of speakers of Greek. Therefore, the data in (32) do not provide evidence against the view that argues that the verb stays in T in obligatory inversion, in other words, they do not suggest that the aspectual verb has crossed over the position of the preverbal subject.

Let us recapitulate briefly. I argued against T–to–C movement, based on a number of diagnostics, the most prominent of which made use of the functional hierarchy between TP and CP in Greek. However, the problems I noted previously remain. If obligatory inversion in Greek is a subcase of free inversion, then why is it obligatory? I have adduced evidence that the postverbal position of the subject is the same with the one in free inversion situations, but since I have rejected T–to–C movement, we cannot explain why a subject cannot intervene between the wh-element and the verb.

4.2. Relativized Minimality

A second solution to this puzzle which has been offered in the literature hinges on the position of the preverbal subject. Anagnostopoulou (1994) notes the contrast between (3d) and (20)
that we saw before. Anagnostopoulou argues that D-linked \textit{wh}-phrases do not trigger inversion (for her sentences like (20) are completely grammatical). This leads Anagnostopoulou to the conclusion that obligatory inversion is a consequence of the prohibition on A’-movement over an A’-specifier (as in (34), also (8)), that is, the left dislocated subject in Greek SVO (see also Zubizarreta 2001). If no movement takes place, as happens in the case of D-linked elements, Relativized Minimality is obeyed and no ungrammaticality arises.

\begin{equation}
(34) [\text{CP } \textit{wh}-\text{element}_i [\text{TopP } \text{subject } [\text{TP} \ldots [\text{VP} \ldots t_i ]]]]
\end{equation}

However, there are a couple of problems with this kind of solution as well. First of all, it predicts that the sequence D-linked(\textit{wh})–subject–verb is completely grammatical, while it is slightly odd, according to my judgment. Moreover, it predicts that \textit{wh}-extraction across an embedded subject should give the same ungrammaticality as \textit{wh}-movement across a matrix subject, which is not correct. Consider (35):

\begin{equation}
(35)\begin{align*}
a. & \quad \ast \text{Pjon } i \text{ marina thimithike?} \\
& \quad \text{who.ACC the Marina.NOM remembered.3SG} \\
& \quad \text{‘Who did Marina remember?’}
\end{align*}
\end{equation}

\begin{equation}
\begin{align*}
b. & \quad ?\text{Pjon nomize } o \text{ Janis oti } \\
& \quad \text{who.ACC thought.3SG the John.NOM that} \\
& \quad i \text{ marina thimithike?} \\
& \quad \text{the Marina.NOM remembered.3SG} \\
& \quad \text{‘Who did John think that Marina remembered?’}
\end{align*}
\end{equation}

\begin{equation}
\begin{align*}
c. & \quad \text{Pjon nomize } o \text{ janis oti } \\
& \quad \text{who.ACC thought.3SG the John.NOM that} \\
& \quad \text{thimithike i marina?} \\
& \quad \text{remembered.3SG the Marina.NOM} \\
& \quad \text{‘Who did John think that Marina remembered?’}
\end{align*}
\end{equation}
If obligatory inversion was a consequence of Relativized Minimality, then (35a) and (35b) should not differ with respect to the degree of ungrammaticality, since both of them involve movement over a preverbal subject (matrix in (35a), embedded in (35b)). However, this is not so. Of course (35c), with both subjects in the postverbal A-position, is grammatical. So, we are led to the conclusion that Anagnostopoulou’s solution is not entirely satisfactory. Moreover, this kind of solution does not recognize the contribution of the interrogative complementizer to the problem of obligatory inversion. In other words, it explains the phenomenon as stemming from the interference of a preverbal subject with the A’-movement of a phrase. However, wh-movement of a phrase (or an operator) takes place also in relative clauses in Greek. In relative clauses, however, no obligatory inversion effects are observed, although the wh-element crosses over the A’-subject. Sentence (36a) is well-formed (or, for some speakers, slightly awkward compared with its VS equivalent), although the object wh-element crosses over the subject, see (36b).

(36) a. O petros thimate ekina
    the Peter.NOM remember.3SG those.ACC
    [ta opia i gonis tu ksechnun].
    the which.ACC the parents.NOM his forget.3PL
    ‘Peter remembers the things that his parents forget.’

b. O petros thimate ekina [ta opia i gonis tu ksechnun ta opia].

I conclude that the ‘Relativized Minimality account’ provides a good explanation of some aspects of obligatory inversion, but it also fails to account for:

(37) a. the asymmetry between fronting of a wh-element over a matrix preverbal subject and fronting of a wh-element
over an embedded preverbal subject, and
b. the lack of ‘obligatory inversion’ effects in relative clauses.

5. Proposal

5.1. Obligatory Inversion as the Effect of Two Factors—The role of C[+Q]

Let us take the two problems just noted as a point of departure for our proposal. Point (37b) cannot receive an explanation couched in the nature of either the wh-elements participating in A’-movement in interrogative and relative constructions, or of the blocking effect of preverbal topics (at least not totally), since it is generally assumed (cf., Chomsky 1977) that the same kind of A’-movement takes place in both relatives and interrogatives. So, the absence of obligatory inversion effects in relativization leads us to the conclusion that obligatory inversion effects have to do (at least partially) with the properties of the (covert) interrogative complementizer, which is not present, of course, in relative clauses.

A similar conclusion can be drawn from the data in (35), that is, the asymmetry (37a). Let us repeat (35a-35b) as (38a-38b) and add (38c-38d) to the picture:

(38) a. *Pjon i marina thimithike?
   who.ACC the Marina.NOM remembered.3SG
   ‘Who did Marina remember?’

   b. ?Pjon nomize o janis oti
      who.ACC thought.3SG the John.NOM that
      i marina thimithike?
      the Marina.NOM remembered.3SG
      ‘Who did John think that Marina remembered?’
c. *O janis rotise pjon
the John.NOM asked.3SG who.ACC
i marina thimithike.
the Marina.NOM remembered.3SG
‘John asked who Marina remembered.’
d. O janis rotise pjon
the John.NOM asked.3SG who.ACC
thimithike i marina.
remembered.3SG the Marina.NOM
‘John asked who Marina remembered.’

The generalization that emerges from data (38a-38d) is that fronting of a wh-element across another wh-element is bad (38a-38c), but it is considerably worse if the preverbal subject that induces the Relativized Minimality effects belongs to an interrogative clause (i.e., to the clause where the wh-element lands, examples (38a) and (38c)), than if the preverbal subject belongs to a declarative clause (out of which the wh-element raises, example (38b)). It seems, then, that the left dislocated subject both induces the alleged Relativized Minimality effect (which I regard as a weak ungrammaticality (question mark-) effect) and somehow produces a strong ungrammaticality effect when found in interrogative clauses, that is, clauses with a [+Q] Complementizer (C[+Q]).

Let us, therefore, accept as a working hypothesis that (i) Relativized Minimality effects and (ii) the presence of a left dislocated element after the covert clause typing C[+Q] are the two causes of the effect of obligatory inversion. The former is well known since Rizzi (1990) and, in the case of movement of arguments over other wh-material, it gives rise to weak ungrammaticality effects, since arguments are theta-marked.\(^{13}\) As

\(^{13}\) In GB terms, movement of an argumental wh-element over another A’-element produces weak ungrammaticality, since it is a subjacency violation but not an ECP violation.
for the latter, there is no other obvious way for us to interpret it than as a requirement of the C head to be adjacent to the clausal heads it dominates (that is, the heads of the functional hierarchy presented in (10)). An obvious way to formulate this would be to capitalize on the T–to–C relation, even without movement, but this would not do for our purposes. I noted in previous sections that preverbal elements host their own projections between C and T and are able to induce HMC effects, so they should act as blockers of a narrow-syntactic T–to–C relation. On the other hand, the preverbal particles (and the clitics) attach onto the verb stem phonologically, that is, I assume, at PF. I claim, thus, that the requirement of adjacency does not hold between the clause-typing $C_{[+Q]}$ and T, but between $C_{[+Q]}$ and the rest of the verb group as a phonologically collapsed whole.

This proposal, though novel, can be theoretically justified, I believe. Let us consider that functional elements, such as C, Neg, T, etc., might have three instantiations: they might be syntactically bound elements, i.e., bound affixes, such as T, Asp, Voice in Greek. If affixal, these elements require narrow syntactic head movement and fail to induce HMC effects, since they end up phonologically incorporated on the verb stem. If Baker’s mirror principle holds (and there is empirical evidence that, at least for some languages, it does), then incorporated elements attach invariably to the right of the verb stem. A second option for any functional element is that of complete independence. This is the case with declarative complementizers in Greek, English, etc., and with interrogative $[+Q]$ Complementizers in Chinese. These elements do not induce head movement, do give rise to HMC effects and need not (in fact, cannot) become phonologically attached to the verb stem at any point in the derivation. A third kind of functional elements, I assume, is that of particles. Here, I agree with Philippaki-Warburton & Spyropoulos (1999) that particles have an intermediate status between totally autonomous elements and affixes. I assume that particles in Greek are the occupants of the functional heads of Negation, Future, Mood
(apart from the affixal imperative) and $C_{[+Q]}$. I also assume that particles are autonomous heads in narrow syntax, giving rise to HMC effects (see (26b)), but they are also phonologically dependent in that they need a host at PF. So, they attach on the verb post-syntactically, their attachment being subject to a requirement of linear adjacency and not to the mirror principle.

So, I have concluded that the status of the interrogative complementizer is subject to parametric variation across languages. It might be a completely autonomous head, as in Chinese, a phonologically dependent particle, as in Greek, or even an affix, in other languages (e.g., English). I will return to this tripartite distinction in section 7. The requirement that $C_{[+Q]}$ needs to be phonologically attached in Greek might seem strange at first, given the fact that it is covert and, at first sight, it does not seem to have any phonetic content. However, I assume that it contributes to the interrogative intonation, so it really does have a phonetic effect on the sentence.\(^{14}\)

### 5.2. Checking the Proposal—the Empirical Coverage

Having discussed the role of $C_{[+Q]}$, let us now turn to our proposal. In effect, this article argues that:

\[(39)\] Obligatory inversion violations in Greek are the cumulative effects of:

a. a Relativized Minimality effect created by left dislocated preverbal subjects which block $wh$-extraction, and

b. the requirement of linear adjacency between the non-overt interrogative complementizer particle $C_{[+Q]}$ and the rest of the verb group.

\[^{14}\text{This is supported by the fact that obligatory effects are also evidenced in instances of contrastive focalization. I assume that in those cases, again, an F head which contributes bearing the strong stress needs to find a phonological host.}\]
I assume that each of these factors on its own gives rise to mild ungrammaticality (judgments).\textsuperscript{15}

Proposal (39a) predicts that if (39b) is violated but no movement across a topic is evidenced (e.g., in the case of D-linked wh-phrases or in if the subject is postverbal), then the effect is weak ungrammaticality. Proposal (39b) predicts that when (39a) is violated (let’s say, by wh-movement across the left dislocated subject of a lower, declarative clause), but the wh-element ends up in an interrogative clause which obeys the adjacency requirement between $C_{[+Q]}$ and the rest of the verb group, then again the effect is mild ungrammaticality. Let us now check these predictions:

Sentences which involve a moved wh-phrase with $C_{[+Q]}$ adjacent to the verb group (that is, the verb plus particles and clitics) without violation of Relativized Minimality (i.e., no subject interveners in any instance of wh-movement) are grammatical, as in (40):

\begin{verbatim}
(40) Pjon idhe o petros?
whom.ACC saw.3SG the Peter.NOM
‘Who did Peter see?’
\end{verbatim}

In this case, (39a) is satisfied because the subject o petros is postposed and, therefore, it does not intervene to wh-movement, and (39b) is satisfied since the covert $C_{[+Q]}$ following $pjon$ is adjacent to the verb $idhe$.

Moreover, sentences containing involve an unmoved wh-phrase (in other words, directly merged in its derived position, D-linked) with $C_{[+Q]}$ adjacent to the verb group are grammatical (of course in this case the question of Relativized Minimality is irrelevant since no

\textsuperscript{15} The mild ungrammaticality effect is explained in the case of (39a) (as a weak island effect, see footnote 13), but it remains unexplained as far as (39b) is concerned.
movement occurs). 16

(41) Pjon apo tus filus tu idhe o petros?
    which.ACC of the friends.ACC his saw.3SG the Peter.NOM
    ‘Which of his friends has Peter seen?’

In this case, as well, both requirements of (39) are satisfied.

Now, sentences with a preposed unmoved(/D-linked) wh-phrase with C[+Q] non-adjacent to the verb group are deviant.

(42) ?Pjon apo tus filus su o nikos
    which.ACC of the friends.ACC your the Nick.NOM
    dhen kalese sto parti?
    NEG invited.3SG at party.ACC
    ‘Which of your friends didn’t Nick invite at-the the party?’

In (42), requirement (39a) is satisfied, since the wh-phrase *pjon apo tus filus tu* is partitive, and hence D-linked, and it does not violate Relativized Minimality. (39b) is, nevertheless, violated by the intervention of the subject *o nikos* between C[+Q] and the verb group. Since only one of the two requirements of (39) is violated, mild ungrammaticality ensues.

Sentences which involve a moved wh-phrase with C[+Q] adjacent to the verb group with violation of A’-minimality (necessarily due to an embedded topicalized subject) are again slightly deviant.

16 I am aware that D-linking vs. non-D-linking difference has, recently, been explained not with resort to movement vs. non-movement, but as an effect of movement of an element which contains ‘more functional structure’ than the potential intervener in work by Rizzi (2001), Starke (2001). Nevertheless, I keep describing D-linking here in terms of lack of movement for convenience, though the current proposal fares equally well with the novel view of D-linking as well.
(43) ?Pjon nomize o janis oti
   who.ACC thought.3SG the John.NOM that
   i marina thimithike?
   the Marina.NOM remembered.3SG
   ‘Who did John think that Marina remembered?’

In this case, (39a) is violated, since the non-D-linked wh-phrase
pjon crosses over the embedded Left Dislocated subject i Marina.
(39b) is, however, respected, since the subject is postposed in the
interrogative clause and it does not disrupt the required C [+Q]-verb
group adjacency.

Finally, sentences containing a moved wh-phrase with C [+Q] non-
adjacent to the verb group with violation of Relativized Minimality are
ungrammatical (this is the core case of obligatory inversion).

(44) *Pjon I maria aghapai?
   who.ACC the Maria.NOM love.3SG
   ‘Who does Maria love?’

Here, both requirements of (39) are violated. Let us summarize the
results below:

(45)

<table>
<thead>
<tr>
<th></th>
<th>Minimality respected</th>
<th>Minimality violated</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-verb group adjacency</td>
<td>√ (40, 41)</td>
<td>? (43)</td>
</tr>
<tr>
<td>No C-verb group adjacency</td>
<td>? (42)</td>
<td>*(44)</td>
</tr>
</tbody>
</table>

It seems, then, that the empirical data are compatible with our
proposal. So, under our interpretation, the ungrammaticality
judgment attributed to examples like (3d)—the classic examples of
obligatory inversion—stems from the cumulative effect of two
independent violations: the violation of Relativized Minimality on
the A’-movement of the *wh*-element and the violation of the PF adjacency requirement between the Q particle and the phonological word constituting the verb group.

5.3. Loose Ends

5.3.1. Fronting of Adjuncts

Let me now consider two problems that this proposal faces. The first one is shared, as far as I can tell, by all accounts of obligatory inversion. Therefore, it does not constitute evidence for or against any of the proposals concerning this phenomenon. I am referring to the fact that if the *wh*-element that is fronted is an adjunct instead of argument, then the sentence improves in grammaticality:

(46) a. *Pjon i sula ghnorise sto parti?
   whom.ACC the Sula.NOM met.3SG in-the party
   ‘Whom did Sula meet in the party?’

   b. ?Pote i sula ghnorise ton aleksandhro?
      when the Sula.NOM met.3SG the Alexander.ACC
      ‘When did Sula meet Alexander?’

It is difficult to explain the above contrast, since it is not obvious why fronting of an adjunct should fare better than fronting of an argument. On the contrary, fronting of an adjunct across a left dislocated subject should give even worse ungrammaticality than fronting of an argument, since—in somewhat traditional terms—adjunct extraction is not only subject to subjacency (as argument extraction is) but also to the ECP. So, whereas extraction of an argument over an A’-element (as in (39a)) gives a ?-violation, adjunct extraction should result in severe ungrammaticality as a violation of (39a) on its own (even without taking into account (39b)). In other words, Relativized Minimality effects should rule
out adjunct extraction completely, but this does not happen. Let us try to single out the reason why (46b) is not completely ungrammatical by resorting to the following contrast:

(47) a. ?Pote i sula ipe oti when the Sula.NOM said.3SG that pire proaghogi o alexsandhros?
took.3SG promotion.ACC the Alexander.NOM ‘When did Sula say that Alexander got a promotion?’
b. Pote ipe i sula oti o when said.3SG the Sula.NOM that the alexsandhros pire proaghogi?
Alexander.NOM took.3SG promotion.ACC ‘When did Sula say that Alexander got a promotion?’
c. Pote ipe i sula oti pire when said.3SG the Sula.NOM that took.3SG proaghogi o alexsandhros?
promotion.ACC the Alexander.NOM ‘When did Sula say that Alexander got a promotion?’
(assuming an embedded reading of the temporal adverb pote in all three sentences)

As we see, mild ungrammaticality arises only when the $C_{[-O]}$-verb group adjacency is interrupted, as in (47a), that is, when (39b) is violated, but not when the $wh$-element crosses over a left dislocated subject, as in (47b). So, it seems that adverbs pattern with D-linked elements in being exempt from the requirement to obey Relativized Minimality in obligatory inversion contexts.

We might then speculate that adjuncts can be directly merged in [Spec, CP] and need not be moved from their VP-internal positions, so they escape movement over left dislocated preverbal subjects (case (39a)). This might be due to the fact that adjuncts are not obligatorily selected by the verb and need not be present in the VP,
which constitutes the kernel of thematic role assignment.

However, this account, while it could explain the empirical facts presented above, is not strong enough theoretically. It is well known that adjunct extraction out of weak islands produces strong ungrammaticality in languages like English:

(48) *When did who speak?

Adjunct *wh*-phrases cannot escape strong islands in Greek:

(49) *Pote se tromakse to gheghonos oti when you.ACC frightened.3SG the fact that katerina iche kakes parees? the Katerina.NOM had bad companies ‘When did the fact that Katerina had bad companies frighten you?’ (assuming an embedded reading of the adverb *pote*)

If adjuncts could be directly merged in [Spec, CP], then we would expect (48-49) to be well-formed. So, I have to leave the issue of adjunct fronting open for future research.

5.3.2. The Position of Parentheticals

Let us now briefly examine another potential problem for our account. As I noted in (23), repeated here as (50), parentheticals like *lipon* can intervene between C and the verb group.

(50) Pjon lipon pantreftike i mirsini? whom.ACC well married.3SG the Myrsine.NOM ‘Who did Myrsine marry?’

The grammaticality of (50) is strange for our account, since *lipon*
seems to disrupt the required linear adjacency between \( C_{[-Q]} \) and the verb group, so (50) should get a ? as a violation of (39b). At first approximation, we might argue that all accounts concerning parentheticals in syntax capitalize on their relative ‘independence’ from the sentence in which they occur. Parentheticals seem to be in a ‘different tier’ with respect to intonational properties of the sentence. It is no wonder, then, that they do not appear to disrupt the C-verb group relation. However, since this explanation is somewhat speculative, let us offer yet another, more syntactic one.

The difference between (50), where a parenthetical disrupts the C-verb group sequence and (3d) where a subject does might well have to do with the different positions that the two respective elements occupy. Parentheticals are adjuncts to some maximal projection, while left dislocated subjects are specifiers of the TopP phrase. This difference explains why syntax is blind as to the presence of *lipon* in (50). If we assume with Bobaljik (1994), Chomsky (2004) that adjuncts get linearized after PF, then we can explain why they do not interfere with C-verb group adjacency.

6. Implications for Head Movement

Let us now turn to the theoretical implications that my proposal has for verb movement and head movement in general.

I have argued that two different operations involving heads can be evidenced in Greek, that is: successive cyclic head incorporation, evidenced in V–to–T head movement triggered by inflectional affixes, and the PF phonological merger of particle heads and clitic with the inflected V–T complex. As for the latter, I have provided

\[\text{Reference: Bobaljik (1994: 11 footnote 8)}\]

\[\text{Reference: Roberts (1994), van Riemsdijk (1998), Philippaki-}\]
evidence that it belongs to the PF component.

The question that arises concerns the placement of the former, that is, whether head movement takes place in narrow syntax or PF. Evidence for syntactic head movement would be to show that the V–to–T relation is either facilitated or blocked by structures that are present only in narrow syntax and not at PF. Similarly, evidence for the claim that head movement belongs to PF might be derived if we show that structures that are present at PF block head movement, or structures that are elided at PF facilitate its application.

In this paper, I have already argued that the blocking effects of negation on head movement constitute a clear argument for narrow syntactic head movement. Recall that the negation particles *dhen*/*min* induce HMC effects on T–to–Mood movement, triggered by the inflectional nature of the imperative suffix:

\[(51)\]

a. Dhose sto niko to vivlio!
give.2SG to-the Nick.ACC the book.ACC
‘Give the book to Nick!’

b. *Dhose mi sto niko to vivlio!
give.3SG NEG to-the Nick.ACC the book.ACC
‘Don’t give the book to Nick!’

On the other hand, the PF-relation between the C\_[+Q]\_] and the V–T complex is not interrupted by the presence of intermediate heads, which are also part of this phonological relation, i.e. the verb group formation. Now, since at PF the preverbal particles and the V–T have collapsed, there is no Neg head projected hierarchically as such. This head has been cliticized onto the V–T complex head. So, if head movement took place at PF negation would not create HMC effects on T–to–Mood movement, as it does not create such effects

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Warburton & Spyropoulos (1999), with different conclusions, sometimes, from the ones I am reaching here.
on the PF T–to–C relation. However, it does.
I conclude that the behaviour or preverbal particles with respect to blocking of head movement provide evidence that affix-triggered head movement in Greek cannot belong to PF and, therefore, it must be a part of narrow syntax.

7. Implications for Typology: Patterns of Inversion

Let us now turn to the implications that our analysis of obligatory inversion has for the overall typology of constituent questions.
I have argued that apart from being an autonomous head (as in (52) from Mandarin Chinese) or an affix that triggers T–to–C movement (as in English (53)), the Q-element on C might also be a particle, in the sense of Philippaki-Warburton and Spyropoulos (1999). This option is realized in Greek.

(52) Hufei mai-le na-yi-ben-shu ne?
Hufei buy-ASP which-one-CL-book Q
‘Which book did Hufei buy?’

(Cheng 1991)

(53) Who did Jonathan ti admire?

In other words Q (when it is a particle) may have the status of an autonomous head in narrow syntax, but need to be phonologically attached to the ‘verb group’ at PF. It, therefore, does not trigger obligatory inversion on its own, but it needs to be linearly adjacent to the verb group at PF (which is, as I have argued, one of the two factors that give rise to the obligatory inversion effect in Greek).
Now, given that some languages are sensitive to Relativized
Minimality effects of preverbal subjects in obligatory inversion contexts, but not to the requirement of linear adjacency between C and V, we can assume that these two requirements can be found dissociated, i.e., that the nature of complementizers (bound affix/particle/autonomous head) is one of the parameters that give (or do not give) rise to obligatory inversion effects, while the presence vs. absence of a preverbal subject (e.g., Zubizarreta 2001) is the other issue involved in the phenomenon.

So, the overall typology of $wh$-inversion might be along the lines of the following table. Languages in which preverbal subjects induce Relativized Minimality effects, such as Spanish and Greek, for example, divide as to the nature of the Q-element (particle vs. autonomous head). Languages in which preverbal subjects do not give rise to A’-intervention effects (such as English and Mandarin Chinese) also differ as to whether Q is an autonomous head realized in isolation or a bound affix triggering T–to–C movement:

\begin{center}
\begin{tabular}{|c|c|c|}
\hline
 & A’-subjects & no A’-subjects \\
\hline
Q-bound morpheme & ?? & English \\
\hline
Q-autonomous head & Spanish & Chinese \\
\hline
Q-particle & Greek & ?? \\
\hline
\end{tabular}
\end{center}

Of course more work needs to be done towards the confirmation of the existence of the proposed dichotomy as to the nature of obligatory inversion (with the hope of filling the question marks in the above table). I hope that the examination of Greek obligatory inversion has shed some light on this problematic area.
8. Conclusions

In this paper, I tried to provide an account of obligatory subject–verb inversion in constituent questions in Greek. First of all, I examined the traditional T–to–C account of inversion and I concluded that in Greek we do not need to employ T–to–C movement in order to account for the *wh*-verb adjacency.

Following Anagnostopoulou (1994), I argued that the T–to–C account fails to capture the effects of D-linked *wh*-phrases on the amelioration of obligatory inversion effects and that (contrary to expectations) Greek does not exhibit a root/nonroot asymmetry in obligatory inversion. Moreover, I acknowledged the blocking effects that preverbal particles (especially negation) should exhibit if indeed T–to–C head movement were operative in Greek, and also the peculiar facts of clitic placement in the constructions under consideration.

All these facts led to the conclusion that verb movement in Greek stops where inflectional affixes stop, which is on T (or on Mood in imperatives). Preverbal particles are full heads which block head movement in all instances (as we saw with respect to the imperative). Their ultimate phonological cliticization on T is a PF requirement operating under linear adjacency. There is narrow syntax T–to–Mood movement in Greek. Seeking to explain obligatory inversion, I observed that Anagnostopoulou’s (1994) account, according to which left dislocated preverbal subjects induce Relativized Minimality effect on A’-movement must hold. However, I also concluded that this requirement produces only weak ungrammaticality.

The effects of obligatory inversion in Greek can, therefore, be attributed to two independent factors: i) intervention effects on phrasal *wh*-movement caused by the left dislocated subject, plus ii) a requirement of PF linear adjacency between $C_{[+Q]}$ and the phonological phrase consisting of the verb and its particles. This
requirement stems from the particle nature of the interrogative complementizer, which needs a host at PF.

As far as head movement is concerned, the fact that elements present on head positions in narrow syntax but absent (cliticized on T) at PF (such as negation) seem to act as blockers of head movement (HMC effects on T–to–Mood) lends support to the view that head movement does not belong to PF but to narrow syntax (since these heads do not block the PF–relation between C_{[+Q]} and the verb group). This study also offers a new way to look at the crosslinguistic patterns of obligatory inversion. It has been acknowledged that in some languages obligatory inversion is triggered by the affixal nature of the interrogative complementizer (C_{[+Q]}) which needs a host in narrow syntax (and triggers T–to–C head movement). It is also acknowledged that obligatory inversion might be forced by the A’-status of preverbal subject in null subject languages. However, a third option is realized in Greek, with obligatory inversion being forced by both the requirement for linear C_{[+Q]}–verb group adjacency at PF (prompted by the particle nature of Q) and the A’-status of preverbal subjects.

**References**


Subject–verb Inversion in Greek: Implications ~


Roberts, I. 1994. Two Types of Head Movement in Romance. In D.


