

## Another look at incorporation in Modern Greek: the case of quantifying adverbs<sup>1</sup>

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### *Abstract*

*This paper investigates Adverb Incorporation in Modern Greek, focussing on the combination of verbs with a certain class of adverbs, namely the quantifiers 'poli', 'kala' and 'para-'. The syntactic and semantic properties of the compounds are discussed with the aim of providing a syntactic account of their derivation. It is argued that the syntactic processes are activated due to focus properties and structural deficiency of the adverbs in question.*

### **1. Introduction**

The issue of whether verbal composites involving arguments in Modern Greek are derived through syntactic processes or are the result of lexical rules has been the focus of a long-lasting debate among researchers. Rivero (1990) suggested the possibility of adverb incorporation drawing on the work of Baker (1988), who attributed compounding to head-to-head movement. Drawing on ECP and the notions of barrierhood and government, Baker limited the possibility of incorporation only to elements c-commanded by the lexical head acting as the host. With regard to Modern Greek, Rivero claimed that the instances of adverb+verb combinations are the result of syntactic processes. Along the lines of Baker, she proposed that only a limited class of adverbs, i.e. VP-internal adverbs which are selected as arguments of the verb, can incorporate onto it.

At the other end of the spectrum, other researchers have claimed that incorporation is not a syntactic process in Modern Greek and that instances of compounding should be regarded as lexical derivations. Kakouriotis et al (1997), Smyrniotopoulos & Joseph (1997) and Xydopoulos (1995) based their opposition to theories of incorporation in Modern Greek on the following facts: firstly, the lack of productivity, as only a very limited class of adverbs seem to have the ability to appear as prefixes on the verb - *ksana* being the only one that freely occurs as a prefix - and, secondly, the inability of the derived word to be analysed into its two constituents as it acquires quite a different meaning from them. A case in point is the verb

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*kalomatheno*, which means 'spoil somebody', while its two apparent constituents are the adverb 'well' and the verb 'teach' respectively.

However, there are instances of adverb+verb compounding which raise questions with regard to the lexical nature of their derivation. In Greek, in particular, a large number of verbs appear with prefixes which quantify over the state or event the verb denotes. Such are the prefixes *para-* meaning 'too much', coming from the adverb *para poli*, *poli-* meaning 'much', coming from the adverb *poli* and *kalo-* meaning 'well' literally and by extension 'sufficiently', coming from *kala*. What is interesting about them is the fact that they all exhibit a similar behaviour to that of the corresponding adverbs in root form with respect to their scope assigning properties while they demonstrate a parallel syntactic behaviour, as the examples below illustrate:

(1) **poli+verb in negative environment**

- a. Dhen politroo glika.  
not much+eat-1s sweets-acc  
'I don't eat sweets much'
- b. Dhen polivlepo tenies.  
not much+see-1s films-acc  
'I don't see films much'
- c. Dhen polidiavazo efimerides.  
not much+read-1s newspapers-acc  
'I don't read newspapers much'
- d. Dhen ton polivlepo ton Yiani.  
not him much+see-1s the-acc John  
'I do not see John much'
- e. Dhen to polievrasa to kreas.  
not it-acc much+stewed-1s the-acc meat  
'I did not stew the meat much'
- f. Dhen ta poliprosehi ta pedia tis.  
not them much+look-3s the-acc children-her  
'She does not look after her children much'

(2) **kalo+verb in negative environment**

- a. Dhen kalothimate leptomeries.  
not well+remember-3s details-acc  
'He/She does not remember details well'
- b. Dhen ton kalovlepo ton pinaka apo edho.  
not it-acc well+see-3s the-acc board from here  
'I do not see the board well from here'

(3) **para+verb in positive environment**

- a. Paraefaga glika simera.  
too much+ate-1s sweets-acc today

- 'I have eaten more than enough sweets today'
- b. Paraidha tenies ton perasmeno mina.  
too much+saw-1s films-acc the-acc last month  
'I saw more than enough films last month'
- c. Paradiavases efimerides.  
too much+read-2s newspapers-acc  
'You have read newspapers more than enough'
- d. Ton paraidha ton Yiani sto Parisi.  
him too much+saw-1s the-acc John in Paris  
'I saw John more than enough in Paris'
- e. To paraevrasa to kreas.  
it-acc too much+stewed-1s the-acc meat  
'I stewed the meat more than enough'
- f. Ta paraprosehi ta pedia tis.  
them too much+look-3s after the-acc children-her  
'She looks after her children more than enough'

As can be seen, the *poli/kalo*+verb compounds are only found in negative environments. Furthermore, in the case of definite NP objects, a clitic doubling pronoun also appears in the sentence.

All the examples above involve transitive structures as in this way scope assignment and its interplay with definiteness and negation in the case of '*poli*' + verb compounding becomes clearer. In what follows, I will discuss the similarities of *para/poli*+verb compound forms as regards the scope properties of the quantifiers. A further parallelism will then be drawn between the behaviour at LF of '*poli*' and the individual operator *mono* 'only', whose scope assignment properties are also influenced by both negation and definiteness. Then the syntactic properties of the compound forms will be discussed with the aim of providing a syntactic account of their derivation in the framework of incorporation theory.

## 2. Semantic analysis

In all the above data one cannot help noticing the similarity of the above types of prefixes on pragmatic grounds in that they all function as comments on the proposition denoted by the predicate. In the *para*+verb combinations, the adverbial shows the negative attitude of the speaker towards the event/state described. A sentence such as (3a), for instance, implies a negative comment on the part of the speaker over the event of eating sweets, and can be paraphrased into (4):

- (4) I shouldn't have eaten so many sweets.

In the case of *poli/kala-* the negative marker together with the adverb is used in order to comment on a presupposed event/state. In Italian, a similar

property of the negative marker *non* is observed when in combination with the post-verbal "presuppositional negative marker" *mica*, whose occurrence is pragmatically limited to contexts where "the non-negative counterpart of the proposition is assumed in the discourse" (Zanuttini, 1997: 226). Thus, in the following example (taken from Zanuttini, *ibid*) the proposition of Gianni buying a new car forms part of the common ground in the discourse:

- (5) Gianni non ha mica comprato una machina nuova  
Gianni neg has neg bought a car new

In the same way, the combination of *neg+poli/kala* constitutes new information and at the same time quantifies over a presupposed proposition, as is shown by (6a), (6b) and (7a), (7b) the paraphrases of (1a), (1d) and (2a), (2b) respectively:

- (6) a. Troo glika ala ohi poli  
eat-1s sweets-acc but not much  
'I eat sweets but not much'  
b. Vlepo ton Yiani ala ohi poli.  
See-1s the-acc John but not much  
'I see John but not much.'
- (7) a. Thimame leptomerias ala ohi kala.  
remember-1s details-acc but not well  
'I remember details but not well'  
b. Vlepo ton pinaka ala ohi kala.  
see-1s the-acc board but not well  
'I see the board but not well.'

I assume that the adverbs are negative polarity items, licensed by the negative marker *dhen*, as also argued by Alexiadou (1994). Furthermore I will claim that both these adverbs are different from their homonymous ones, i.e. the quantifying adverb *poli* and the manner adverb *kala*, which appear both in the absence and the presence of negation and do not show similar patterns of behaviour to the ones under discussion.

If the complex verbs in the data are instances of incorporation, they should be reanalysed into their compositional parts at LF, which would have to retain their semantic properties with respect to scope assignment. This can be seen by examining the scope allocation properties of the adverbs in the compound form and comparing them with those of the adverbs as such in transitive constructions with both definite and indefinite NP objects.

With respect to (in)definiteness, it seems that the latter affects the scope of both *para-* and *poli-/kala-*, as shown by the following data:

- (8) a. Dhen polivlepo tenies.  
not much+see-1s films-acc  
b. Dhen ton polivlepo ton Yiani.  
not him much+see-1s the-acc John.
- (9) a. Dhen kalothimame leptomeries.  
not much+remember-1s details-acc  
b. Dhen ton kalovlepo ton pinaka apo edho.  
not it-acc well+see-1s the-acc board from here
- (10) a. Paraida tenies ton perasmeno mina.  
too much+saw-1s films-acc the-acc last month  
b. Ton paraida ton Yiani sto Parisi.  
Him too much+saw-1s the-acc John in Paris

In all the sentences containing indefinite NP objects (8a, 9a, 10a), the adverbial elements have scope over the verb predicate so that the NP is included in the quantification. What is more, the sentences are ambiguous between the reading in which the event/state is quantified and one in which the noun receives the quantificational force:

- (11) a. It is not the case that [I see films much/often].  
b. It is not the case that [I see many films].
- (12) a. It is not the case that [I remember details much]  
b. It is not the case that [I remember many details]
- (13) a. It is the case that [I saw films too many times]  
b. It is the case that [I saw too many films]

On the other hand, the clitic doubling constructions (8b, 9b, 10b) do not display this ambiguity; the verb is included in the scope of the quantifying element while the definite NP seems to have escaped even from negation and behaves as a topic:

- (14) Ton Yiani, dhen ton vlepo poli/sihna.  
the-acc John, not him see-1s much/often  
John, it is not the case that [I see him much/often]
- (15) Ton pinaka, dhen ton vlepo kala/arketa.  
the-acc board, not it-acc see-1s well/enough  
The board, it is not the case that [I see it well/much]
- (16) Ton Yiani, ton idha para poli/poles fores sto Parisi.  
the-acc John, him saw-1s too much/many times in Paris  
John, it is the case that [I saw him too much/often]

The account of these phenomena seems to lie in the differentiation between non-quantificational and definite, referential nouns, as proposed by Diesing (1991). As indefinite NPs are not presupposed, they are bound by the

existential closure operator  $\exists$  and in a tripartite structure, consisting of the operator area, the restrictive clause, which is the domain of the functional projections, and the nuclear scope, the domain of VP, bare plurals remain in the latter and raise at LF by QR when bound by the quantifier. In contrast, definite NPs, escape binding by the quantificational operator due to the presuppositional nature of the determiner.

In the case of the above data containing indefinite NPs, there are two possibilities with regard to the operator by which the latter are bound; as seen in (17a), which represents (8a), the adverb binds the event position of the verb (Higginbotham, 1985), while the noun has been bound by the existential operator and remains in the nuclear scope of the sentence. In this case, the whole adv+VP is amalgamated with negation. On the other hand, in (17b), which is a representation of (8b), the quantifying operator binds the NP and are both under the scope of the negative marker, thus acquiring the reading of 'few' (=not many).

- (17) a. [ $\exists$  tenies<sub>y</sub>] [*neg*+ polix vlepox]  $\rightarrow \exists y$  films (y)  $\wedge \neg$  see y at x times  
 b. [*neg*+vlepo [polix tenies<sub>x</sub>]] I don't see many x

The addition of a contrastive clause shows even more clearly the two choices of the quantifier with respect to the constituents it binds. Thus, when it binds the event position, a different verb can be used contrastively, as in (18a). Otherwise, the contrastive element will be a different NP, as in (18b):

- (18) a. Dhen polivlepo tenies, ala diavazo kritikes.  
 not much+see-1s films-acc, but read-1s reviews-acc  
 'I don't see films much but I read reviews'  
 b. Dhen polivlepo tenies, ala vlepox theatrika erga.  
 not much+see-1s films-acc, but see-1s plays-acc  
 'I don't see films much but I see plays'

The *para*- prefix seems to display a similar behaviour as it binds either the bare plural noun or the event argument of the predicate, as illustrated by the paraphrases of (10a) in (19):

- (19) a. Idha para poles tenies  
 saw-1s too many films-acc  
 'I saw too many films'  
 b. Idha para poles fores tenies.  
 saw-1s too many times films-acc  
 'I have seen films too many times'

In the case of the definite NP object, the adverb binds the event argument of the verb only, as seen by the representations (20) and (21) of (14) and (16) respectively:

- (20) Ton Yiani [him *neg*+*polix* *vlepox*]  
 (21) Ton Yiani [him *para polix* *idhax* ]

The presence of the clitic pronoun in the case of all the above-discussed adverbs becomes obligatory, as the latter seems to play a crucial role in the scopal properties of the adverbs. Thus, the verb complex is to be included in the scope of the quantifying adverb only in clitic doubling constructions. This is seen more clearly when a contrastive sentence is included:

- (22) a. Dhen ton poliksero ton Yiani (ala ton simpatho).  
       not him much+know-1s the -acc John (but him like-1s)  
       'I don't know John much (but I like him)'  
       b. \*Dhen ton poliksero ton Yiani (ala ton Petro).  
       Not him much+know-1s the-acc John (but the-acc Petro)  
       'I don't know John much (but Peter)'

In the case of its absence, the sentences containing the complex *para*+verb sound at least awkward (23,24), if not ungrammatical, according to my informants, and become more acceptable only if the noun receives focus through phonetic stress as in (25):

- (23) ??Paraksero ton Yiani  
       too much+know-1s the-acc John  
 (24) ??Dhen poliksero ton Yiani, ala ton simpatho  
       not much+know-1s the-acc John, but him like-1s  
       'I don't know John much but I like him'  
 (25) Dhen poliksero TON YIANI, ala ton Petro ton ksero  
       not much+know THE-acc JOHN, but the-acc Peter him know-1s  
       'I don't know JOHN much, but I know Peter'

As shown by the sentences intended as possible continuations of the utterance, in the case when there is not in-situ focus on the noun phrase, the sentence sounds unnatural without the clitic as the whole verb phrase is included in the scope of negation+adverb:

- (26) (*zneg*) [yadv+V DP] but [yVP]

However, when the NP is focused, it escapes negation (FP [*neg* [adv+V *e*]) :

- (27) Dhen poliksero TON YIANI, ohi ton Petro.

not much+know-1s the-acc John, not the-acc Peter  
 'I don't know JOHN much, not Peter'  
 or  
 TON YIANI dhen poliksero, ohi ton Petro.

On the other hand, the presence of a clitic pronoun in this case would render the sentence ungrammatical (28):

- (28) \*Dhen ton poliksero TON YIANI  
 not him much+know-1s THE-acc JOHN

As we can see from the above discussion, the quantificational elements are inherently emphatic elements and focalise the items which are included in their scope – that is the verbal predicate.

At this point, it would be helpful to compare the behaviour of these emphatic adverbs to that of the individual operator *mono* 'only' (Tsimpli, 1995) which is also subject to syntactic constraints as regards scope allocation. The latter also necessitates the presence of a clitic pronoun along with the definite NP if scope is to be assigned to the VP. Thus, sentence (29) can be paraphrased into (30) when the contrastive *mono* retains its inherent negative meaning and moves out of the IP together with the NP and the scope of sentential negation. On the other hand, when in the scope of sentential negation, it either allocates scope to the VP, in which case it triggers the appearance of a clitic as in (31) – which would, otherwise, be ungrammatical – or it assigns focus only to the NP, thus not allowing the proposition to be negated. In this case the verb escapes its scope and a clitic would be ungrammatical (32):

- (29) Dhen ksero mono ton Yiani  $\rightarrow \neg (\exists x, x \text{ John, } )$  such that I know  $x$   
 (Tsimpli, 1995)

- (30) ymono ton Yiani [<sub>z</sub>neg [<sub>x</sub>ksero]] [<sub>y</sub>ton Petro [ton ksero]]  
 only the-acc John not know-1s the-acc Peter him know-1s  
 'It is only John that I don't know (as for Peter, I know him.)'

- (31) Dhen \*(ton) ksero mono ton Yiani ala ke vgenume mazi.  
<sub>z</sub>neg [<sub>y</sub>mono [<sub>x</sub>ksero ton Yiani]] ala ke [<sub>x</sub> vgenume mazi]  
 not only know the-acc John but also go-1pl out together  
 'Not only do I know John but we also go out together.'

- (32) a. [<sub>x</sub>ksero] <sub>z</sub>neg [<sub>y</sub>mono ton Yiani] ala ke [<sub>y</sub>ton Petro]  
 know-1s not only the-John but also the-acc Peter  
 'Not only do I know John but also Peter.'  
 b. \*Dhen ton ksero [mono ton Yiani [ala ke ton Petro]]



not him know-1s only the-acc John but also the-acc Peter

In sum, all the elements discussed are of a quantificational nature and seem to be affected by the presence of a clitic element. Thus, in its presence the verb complex receives a focussed reading while in its absence focus is allocated to the definite object. Furthermore, the emphatic nature of *para-* should be noted, which is highly productive when used to stress the occurrence of an event as in the following made-up context in which a possible response to question (33) is the emphatic structure with the *para+*verb compound (34a), paraphrased as (34b):

- (33) Ton kseris to Yiani?  
 him know-2s the-acc John?  
 'Do you know John?'  
 (34) a. Ton ksero ke ton paraksero  
 him know-1s and him too much+know-1s  
 'Not only do I know him but I know him only too well'  
 b. ton ksero ohi mono poli ala para poli.  
 [<sub>x</sub>ton ksero] *neg* [<sub>y</sub>mono poli] ala [<sub>y</sub>para poli]  
 him know-1s not only much but too much

### 3. Syntactic analysis

From the discussion so far, it can be concluded that the adverbs in the verbal composites retain their semantic properties at LF, something which points to a syntactic account of the derivation of the latter. Furthermore, their similarities to the individual operator *mono* with respect to the syntactic constraints they are subject to suggest that they should be treated as emphatic elements, coming from the lexicon with a [+focus] feature, which differentiates them from the homonymous adverbs. Such elements are also found in other languages such as French and Italian where the adverbs *bien*, *bene* (=indeed), respectively, obligatorily appears in front of the past participle, contrary to the usual verb-final position they occupy when they are manner adverbs:

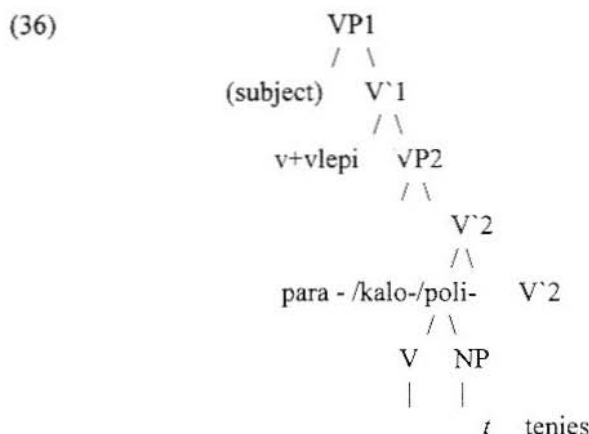
- (35) a. Pierre a *bien* cuisin<sub>é</sub>  
 'Pierre has cooked well/indeed'  
 (Cardinaletti & Starke, 1994:99)  
 b. Gianni avr<sub>á</sub> *ben* risposto  
 Gianni will have answered indeed  
 (Belletti, 1994: 36)

According to Cardinaletti & Starke (1994), who first suggested a tripartite classification of pronouns and adverbs to strong, weak, and clitic ones, depending on whether they have or lack complex structure, the Italian and

French adverbs belong to the class of weak elements, which are deficient, full phrases, lacking the highest functional level of strong elements, namely a CP, and appear displaced, at the spec of a functional phrase, probably ASPP, whose head is occupied by the participial form.

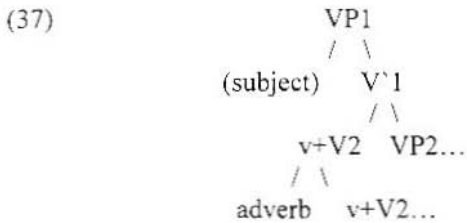
In the same vein, the Greek adverbs appear displaced. However, these also display severe deficiency as they are of an  $X^0$  status as they lack the layer of prosodic features ( $\acute{O}P$ ). In order to recover their missing features, they have to be in a local relation with  $\acute{O}^1$ , the head of a functional projection located higher than the inflectional domain, which hosts both polarity and focus features, as proposed by Laka (1991). This relation could be achieved via incorporation to a lexical head which has a complex structure and may raise to this projection, namely the verb.

Quantificational adverbs like *para-*, *poli* and *kala* are closely related to the VP, as they quantify the verb or its constituents, something also suggested by Xydopoulos. However, contra Xydopoulos, who argues for their base-generation at the  $A'$ -spec position of the VP, and following Chomsky who argues against adverbial adjunction to theta-related phrases and claims that "adverbials [...] can be 'base-adjoined' only to  $X'$  or to phrases headed by  $v$  or functional categories" (1995: 330), I postulate that the adverbs in question are adjoined to  $V^2$  by merge in a Larsonian type of shell in which the verb phrase (VP2) is the complement of a light verb projection (VP1) headed by the light verb  $v$  to which the verb raises to form the complex [ $v$  [ $V+v$ ]].



Being a clitic element, the adverb raises and adjoins the verb at  $v$ , creating an adjunction structure. Since only a segment of the verb dominates the adverb, it does not c-command it (in the sense of Kayne, 1994). Hence, the latter is able to antecedent-govern its trace. One could argue that adverbs do not move as they can just be merged at the point where they can have scope. In the particular case, however, the adverb needs to satisfy its [+focus] feature and at the same time acquire the prosodic layer, something which is done

through adjunction and subsequent incorporation at the level of morphology. The adjunction structure thus created after raising of the adverb is the following:



After adjunction to the verb, the composite adverb+verb raises as high as the head of the  $\bar{O}P$ , so as the focus feature of the adverb is checked against that of the functional projection. The presence of a clitic, in the case of constructions with definite objects is an indication of the movement of the verb past the IP, where the clitic could be adjoined, and further up.

In contrast, the corresponding adverbs *poli*, *kala* appearing post-verbally differ in two respects. Firstly, they are full phrases and, therefore, not subject to incorporation processes and, secondly, they are not negative polarity items. As evidence, consider the fact that they do not appear in compound forms in positive environments:

- (38) a. \*Poliefaga gliká hthes.  
 much+ate-1s sweets yesterday  
 b. \*Ton polivlepo ton Yiani.  
 him much+see-1s the-acc John  
 c. \*Ton poliksero ton Petro.  
 him much+know-1s the-acc Peter

Besides, the instances of composites with the manner adverb *kala* do not display the syntactic properties of the forms discussed so far, such as licensing by negation or the necessitation of a clitic doubling pronoun and furthermore they are not semantically transparent. From that we can conclude that these are different lexical items appearing as such in the lexicon:

- (39) a. \*Kalothimame leptomerías  
 well+remember-1s details-acc  
 b. \*Ton kalovlepo ton pinaka apo edho  
 it-acc well+see the-acc board from here  
 (40) a. Kalofagame simera.  
 well+ate-1pl today  
 'We ate well today (in quality)'

- b. Kalovlepi ti thesi tu diefthinti  
 well+see-3s the-acc position of the-gen manager  
 'He covets the position of manager'

#### 4. Conclusion

To summarise, in this paper I provided evidence in favour of syntactic incorporation in Modern Greek. In particular, I argued that there are instances of adverb+verb forms in Modern Greek are the result of a productive syntactic process, due to the discourse function of the elements, which are used in emphatic structures and their structural deficiency at the prosodic level, which triggers the incorporation process. The transparency of the complex words, shown by their behaviour regarding scope allocation and their specific syntactic properties, constitutes strong evidence for the claim that they are syntactically derived. The fact that adverb+verb composites exist which are not subject to similar syntactic constraints or semantically transparent indicates that the latter are, in contrast, instances of lexical processes.

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