Clitics and Clause Structure:
The Late Medieval Greek System

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We rebut Pappas' critique (this issue) of our treatment of Late Medieval Greek clausal syntax and clitic placement (Condoravdi & Kiparsky 2001), point out some weaknesses of his counterproposal, and suggest directions for further research.

1   Clitic placement in Late Medieval Greek

In Condoravdi & Kiparsky 2001 we traced two paths of grammaticalization in the evolution of Greek clause structure: the reduction of Wackernagel (X^{max}) clitic pronouns to word-level affixes via an intermediate stage of word-level (X^0) clitics, and the emergence of auxiliaries and mood markers as heads of new functional projections. The two trajectories are connected in that the positioning of X^{max} clitic pronouns responds to changes in the clausal syntax, thereby providing a diagnostic for the emergence of the articulated Infl projection previously posited for standard Modern Greek (Tsimpli 1995, Tsimpli & Roussou 1996, Giannakidou 1998, among others), and confirmed by our findings for other modern dialects and for Late Medieval Greek.[1]

Both these Greek developments have broad parallels in Indo-European and beyond, which gives them more than just parochial interest. In the context of the recent controversy over the actuation of syntactic change, we argued that our findings support the view that syntactic change proceeds in small but discrete increments in certain structurally/functionally motivated directions, over the opposing position that it involves "catastrophic" reanalysis with no intrinsic directionality.
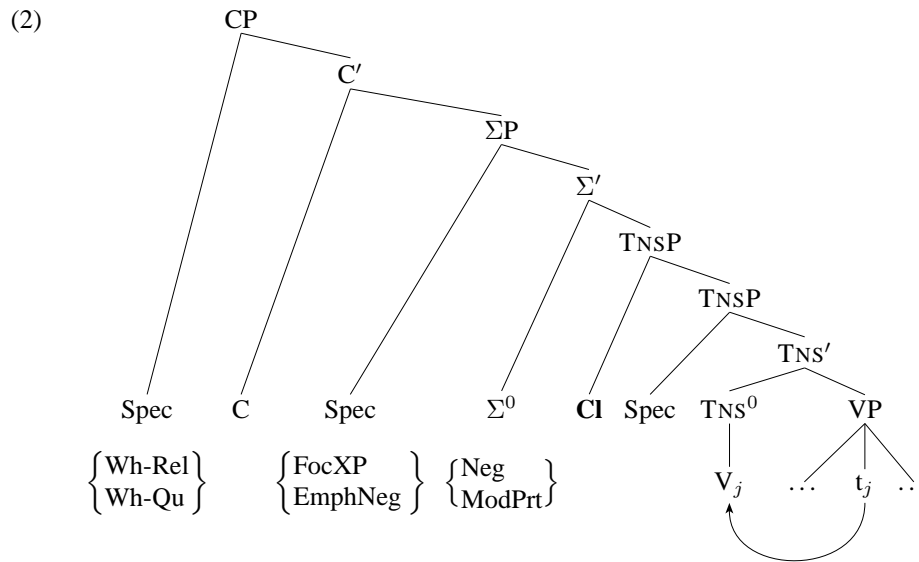
Our analysis addressed, in addition to data from contemporary dialects, the Late Medieval Greek cliticization pattern described in Mackridge 1993. We proposed that it is substantially the same as that of Cappadocian and the other dialects that we grouped into our Type A.

Pappas (2001) revised Mackridge's descriptive generalizations, and proposed a synchronic and historical interpretation of them. In this issue he summarizes his results, and argues that his analysis of LMG is superior to ours. After considering his arguments we have come to the opposite conclusion. Since some of our disagreements reflect different views about the nature of grammar and syntactic change, our response will have to touch on some matters of principle as well.

The descriptive generalizations for Late Medieval Greek (LMG) can be summarized as follows.

(1)   LMG clitic placement: the descriptive generalizations

a. A clitic pronoun *follows* the verb if the verb is

1. clause-initial, or immediately preceded by
2. a coordinating conjunction,
3. a fronted object with a resumptive clitic pronoun,
4. the conjunctions *oti* "that", δ*ioti* "because", *i* "if", or
5. the negation *u(k)*.

b. A clitic pronoun *precedes* the verb if the verb is immediately preceded by

1. a mood marker,
2. a negation other than *u(k) (mi,* δ*en)*,
3. a fronted object without a resumptive clitic pronoun,
4. a fronted adverbial (other than a temporal adverb),
5. a complementizer *(pos, an)*, or
6. a *Wh*-expression (relative pronoun, clausal connective, comparative).

c. A clitic *either follows or precedes* the verb if the verb is immediately preceded by

1. a temporal adverb, or
2. a subject.

This scheme is simpler than Mackridge's original one thanks to Pappas' finding that Mackridge's five-way classification of contexts can be reduced to the three shown in (1). In particular, cases (c1) (temporal adverbs) and (c2) (subjects) do not have a significantly different effect on the placement before or after the verb. So amended, the generalizations fit our theory even better. Here is the phrase structure we proposed for both Late Medieval and Modern Greek (repeated here because it was disfigured at the printing stage in C&K 2001).

(2)

$$
\begin{array}{c}
\text{CP} \\
\diagdown \\
\text{C}' \\
\diagdown \\
\Sigma\text{P} \\
\diagdown \\
\Sigma' \\
\diagdown \\
\text{T\textsc{ns}P} \\
\diagdown \\
\text{T\textsc{ns}P} \\
\diagdown \\
\text{T\textsc{ns}}'
\end{array}
$$

Spec C Spec Σ^0 **Cl** Spec $\text{T\textsc{ns}}^0$ VP

$\left\{\begin{array}{l}\text{Wh-Rel}\\\text{Wh-Qu}\end{array}\right\}$ $\left\{\begin{array}{l}\text{FocXP}\\\text{EmphNeg}\end{array}\right\}$ $\left\{\begin{array}{l}\text{Neg}\\\text{ModPrt}\end{array}\right\}$ V_j $\dots$ t_j $\dots$

The first functional projection above the VP is T\textsc{ns}P, which is headed by the finite verb. This is where clitics are adjoined. T\textsc{ns}P is the complement of ΣP, whose head can be occupied by a negation or a modal particle *(na, θa, as)*. The specifier of ΣP is the site of focused constituents, including those with emphatic negation such as *kanenas*. We also suggested that in some dialects, probably including LMG, [Spec,ΣP] can host even ordinary nonfocused subjects. ΣP in turn is the complement of CP, which can be headed by a complementizer (*pos, pu* etc.); its specifier is the site of Wh-phrases and relatives. Uncontroversially, topicalization (which normally leaves a resumptive clitic in case of an object) is adjunction to the clause at the highest level (ΣP or CP).

On this understanding of the phrase structure, the generalizations about clitic placement stated in (1) can be streamlined. In part (a) of (1), the three cases (a1), (a2), and (a3) can be combined. They all come down to the clause-initial case (a1), because topicalized objects as well as co-ordinating conjunctions sit outside the clauses that they conjoin (this provides the theoretical motivation for the "factor initial" whose unity Pappas establishes statistically). Cases (a4) and (a5) require an extra assumption, but not necessarily about the clitic themselves; we suggested that *uk, oti,* δ*ioti,* and *i* are placed in [Spec,CP] and that the immediately following finite verb is in C, where it hosts the clitic.[2] Given this additional assumption, all five cases of postverbal clitic placement in (a) fall under the same generalization.

As for part (b) of (1), all cases fall under the generalization that clitics precede the verb if there is something before them within the clause. A look at (2) shows that this can be one of the following elements (from right to left):

- a mood marker or negation in Σ^0 (cases (b1) and (b2)),

- a focused expression or emphatic negative in [Spec,ΣP] (cases (b3) and (b4))

- a complementizer in C (case (b5)), or

- a *Wh*-phrase in [Spec,CP] (case (b6)).

Finally, the apparent option in (1c) is just a consequence of the ambiguous status of preposed subjects and adverbials in written texts. Unlike objects, they leave no resumptive pronouns behind when topicalized. So, in the absence of sufficient intonational or contextual cues, a preverbal subject or adverbial could be parsed as either a topic or as a focused element. Hence the descriptive generalization that after a preverbal subject or adverbial, a clitic may come either after the verb or before it.

The upshot is that (2) allows us to distill (1) to (3):

(3) LMG clitic placement: revised descriptive generalizations

    a. A clitic *follows* the verb if the verb is initial in its core clause.

    b. Otherwise it *precedes* the verb.

(3) is more perspicuous than (1), and, more importantly, it brings LMG into line with the cross-linguistic typology of cliticization worked out by Halpern 1995 and others. Even more importantly, it furnishes the basis for a principled formulation of LMG clitic placement. Clitics are adjoined to the functional projection headed by their governing verb, which in LMG is TNSP. So the basic clitic position is preverbal, as shown in (2). Clitics are put after the verb as per (3a) only when there is nothing on their left for them to encliticize to. In minimal satisfaction of their need for a prosodic host on their left, they cliticize to the verb by PROSODIC INVERSION.[3] If clitic adjunction and prosodic inversion are general mechanisms as hypothesized, then the LMG-specific residue is that clitics in this language lean leftwards:

(4) LMG clitic placement: final formulation

    - Clitics are enclitic.

The rest would be a matter of grammatical principles that LMG shares with all languages.

In replacing (1) by (3) we went from a complex formulation framed in terms of *categories* to a simple one framed in terms of structural *positions*. Both are equally theory-laden; they just rely on different theoretical constructs and assumptions. The reformulation paid off with the further simplification in (4). This final formulation has real explanatory content, and moreover, unlike the previous ones it covers a new set of cases that have been ignored in the literature (section 2.2 below).

2 The analysis of clitics: syntactic issues

2.1 Pappas' alternative

According to Pappas, the LMG distribution of clitics "cannot be captured by a single generalization or even a set of generalizations". However, "the pattern can be viewed as the product of an on-going analogical change". Before going into the details, let us try to understand these general claims, and the reasoning that leads Pappas to them.

The statement that LMG syntax "can be viewed as the product of an on-going analogical change" is in one sense trivially true. It is uncontroversial that languages are always changing, and that syntactic change is fundamentally analogical. What is controversial is whether those analogical mechanisms are best modeled as reanalysis plus extension, as grammaticalization, as optimization, or as something else. So, the syntax of *every* language *must* be the product of on-going analogical change. But Pappas seems to have a more drastic claim in mind: that LMG syntax is somehow special in that a sequence of analogical changes has undermined its clitic system, and left it with a pattern that cannot be captured by any syntactic generalizations. Too complex to be stable, this pattern is soon regularized again by analogical change. The paradox is that analogical change is here portrayed both as a source of chaos and disorder and as a regularizing force.[4]

We concur with Pappas that chaotic parts of grammar are unlikely to be diachronically stable. It is significant, therefore, that the LMG clitic pattern is that of the Type A dialects, where has remained stable in many separate localities. From Marioupoli and Azov in the Ukraine to the ancient Greek communities scattered through Cappadocia and Bithynia, the Cycladic islands, the Dodekanese islands of Karpathos, Kos, and Astipalaia, and the two communities of Ajassos and Plomari on Lesbos, the Type A system remains in all essentials the same.[5] Yet most of these communities have had no significant contact for well over a thousand years. In medieval Greek, according to Mackridge (1993), the pattern was stable through nearly 600 years.[6] This undermines the notion that there is no generalization or set of generalizations behind the Type A clitic system. Logically, there are two possibilities. Either the dialects had the same idiosyncracies from the start, or they arrived at them independently. If they inherited the Type A system from a time before they split, why has it remained so stable in them for so long? Shouldn't most of the putative anomalies have been ironed out in most of the dialects?[7] And if the Type A features developed independently after the dialects had dispersed, why did all the dialects converge on the same supposedly arbitrary distribution of clitics? If, as we propose, the clitic system is firmly anchored in the structural givens of the language, then stability and convergence are to be expected.

A second major issue concerns the treatment of variation. As far as clitic placement is concerned, LMG is basically a Type A system, in the classification of our article, but it is not an unalloyed variety such as we see in most of the modern Type A dialects. Many LMG texts have an admixture of constructions representing the later

system of X^0 clitics and lexical prefixes. In particular, preverbal clitics in the environments listed in (1a) (initial position, after a coordinating conjunction, etc.) cannot be derived by the Type A grammar. It is, however, the regular pattern of Type B dialects with proclitics, such as the dialect of Kozani, and Type C dialects, including standard Modern Greek. Crucially, the LMG variation is not a random mixture but an orderly coexistence of two independently attested patterns. The variation in clitic placement documented by Mackridge and Pappas for LMG can be described as the union of enclitic Type A syntax and Type B/C syntax of the proclitic variety, with the former strongly predominating, of course. *Every* option of clitic placement in LMG that does not fit the Type A pattern conforms to the modern proclitic patterns, and nearly all the features of the latter occur at least occasionally in the LMG texts.

There are several ways to model this generalization, including grammar competition (Kroch 2000), unranked constraints (Anttila 1997), and stochastic OT (Boersma and Hayes 2001). They all unify variable and categorical patterns in a principled way, allowing them to relate the variation pattern in the LMG texts to the categorical patterns of the modern dialects.[8] Pappas, in spite of his reference to Kroch 1982/1989, instead resorts to the older "variable rule" technique, which can detect covariation but is too unconstrained to model the orderly relationship between categorical and variable patterns. His choice of this descriptive framework is related to his view that each environment is in principle a law unto its own.

2.2 Preverbal clitics

Pappas' analogical derivation of the LMG pattern starts from a stage in Early Medieval Greek when clitics were postverbal. When the category of the Mood Phrase (= our ΣP) arose, clitics began to be placed after its head, the new subjunctive marker *na*. This gave rise to the rule that clitics are preverbal after *na*. That new rule was then analogically generalized from *na* to other elements which typically appear immediately before the verb, provided they had "clause-typing or subordinating properties". Such elements were negative markers, complementizers, and Wh-expressions, but not coordinating conjunctions and *oti*. Fronted constituents (focused NPs and PPs, and VP adverbials) became associated with preverbal clitic placement by a further analogical change, based on the generalization that pronouns are preverbal after an element that is "salient in the interpretation of the VP". Pappas suggests that the reason preverbal placement does not extend to the context after topicalized objects (preposed objects with resumptive clitics) is "because they are not part of the verb's argument structure". In that case, presumably, the clitics alone are the verb's arguments.

Pappas does not say *why* precisely this set of elements "typically appear immediately before the verb". They happen to be just those which appear in the clausal periphery before TNSP (namely, in one of the four structural positions between [Spec,C] and Σ^0 in (2)). Thus, our explanations differ in how they conceive of the relation between the syntax of the clause's left periphery and clitic placement. For us the relation is direct, for Pappas it is mediated by a sequence of analogical processes. For us it

reflects an important generalization inherent in the grammatical system, for Pappas there is no generalization to be made.

One overarching generalization is however built into his system: that clitics in LMG always come either immediately before or after a verb. Surprisingly, this generalization turns out to be false because there are verbless sentences, which can have ethical dative ("benefactive") pronouns.

(5)   a. tis su   i δolia tixi
             what you-Dat the wretched fate
             'What a wretched fate for you!' (*Threnos* 105)

        b. pu   mi   to fos to esϑiton
             where me-Dat the light the perceptible
             'Where is the perceptible light for me (= my eyesight)?' (*Belisarios* 487)

The amended descriptive generalization is that clitics come next to the verb *if there is one*. Nothing need be added to our analysis to cover verbless sentences. Clitics are placed at the left edge of the TNsP projection that is headed by the verb, and undergo prosodic inversion around the verb if they find no host on their left. This rule remains valid even when the TNsP lacks an overt head (or the head is a null copula). Our analysis also correctly predicts that in modern Standard Greek, where object clitics are affixed to verbs at the word level, they must appear next to a verb:

(6)   ti   ϑa mas traγuδisis apopse, ke ti   (*mas) avrio
        What Fut us-Gen sing   tonight,   and what (*us)   tomorrow
        'What will you sing for us tonight, and what tomorrow?'

Before looking further into what the synchronic evidence has to say, let us note that the two proposals also make different predictions about the history. Pappas predicts that preverbal clitic placement begins with the subjunctive marker *na*. We predict that elements in Σ^0 (including *na* if that already was a modal head) and elements in [Spec, Σ^0] should begin to induce preverbal clitic placement at the same time, since the specifier and the head are both eligible hosts for clitics. In general, we expect preverbal clitic placement to have evolved hand in hand with the elaboration of the left-peripheral functional categories.

2.3   Subjects

Turning now to the apparent option between preverbal and postverbal clitic placement recorded in case (1c), recall that for us this option is not about clitic placement at all, but about alternative structural positions to which subjects and adverbials can be preposed. A preverbal subject or adverbial could be either a topic adjoined to ΣP, or a focus in [Spec,ΣP]. If it is a topic, it occurs with postverbal clitics, if it is a focus, it occurs with preverbal clitics.[9] (The same two positions are available for objects, but their place can be detected even in written discourse because topicalized objects normally correspond to a resumptive pronoun.) Independently of cliticization, intonational criteria can distinguish between these two structures. In written texts, we must

be satisfied with clues from the discourse context, which constrain the distribution but obviously do not always uniquely determine it.

To counter our claim that the discourse function of a preposed element is related to clitic placement, Pappas cites a pair of examples with "the same interpretation with respect to the focus/topic distinction" but differing clitic placement.

(7) a. okapot apesosasin ilϑan is to montorion ‖ o   δuks tus apoδexϑiken
         sometime finished-3pl came-3pl to the Montorion ‖ the duke them received-3sg
         'In time they finished [their journey], they came to Montorion. The duke
         received them.' (*Phlōrios* 303-304)

    b. kavalikevun arxondes ipaγun s to palati ‖ kj o vasilefs eδexϑin tus
         ride-3pl   lords   go-3pl to the palace ‖ and the king   received-3sg them
         'The lords ride, they go to the palace, and the king received them' (*Phlōrios*
         938-939)

Pappas' argument is based on the claim that (7a) and (7b) have the same reading (he doesn't say whether focus or topic). The mere possibility that they might have a different reading would invalidate it. It seems to us that it is more than possible. A focus reading for (7a) "the duke himself received them" actually enhances the narrative by conveying the additional information that the travelers could well have been received by some other, less important personage. At any rate, the focus reading is consistent with the context. On the other hand, a plausible reading for (7b) "the king received them" has focus on the verb with the subject construed as a topic. The general point is that focus structure is not automatically fixed by the textual context, or even by the extralinguistic context, because it depends on what the speaker has in mind and wants to express. A constituent may be focused if the speaker or writer thinks of it as contributing a particularly noteworthy or surprising piece of information, or wishes to represent it as such, but in the absence of enough syntactic and intonational cues one would have to be a mind-reader to predict when that is the case.

A further complication is that in certain types of presentational sentences, even modern Greek literary style allows topicalization of objects without clitic doubling:

(8) tin avli tis   filakis eluze o ilios
     the yard of-the prison washed the sun
     'the prison yard was bathed in sunlight' (K. Theotokis, *O Kataδikos*)

Here colloquial Greek would require a resumptive clitic *(Tin avli tis filakis tin eluze o ilios)*. Was this special feature of presentational sentences present in LMG already? This question must be left for further work.

Finally, as mentioned, even non-focused subjects can apparently be placed in [Spec,ΣP]. There seems to be some variation among texts on this score. In *Threnos*, subjects are predominantly preverbal, and consistently induce preverbal clitics.

2.4 Adverbs

Mackridge had noted that a class of one-word adverbs of time allow preverbal clitics more readily than other preposed adverbials. We suggested that these adverbs are optionally nonprojecting (X^0) categories which appear within ΣP, just as a smaller set of time adverbs like *panta* 'always' and *tote* 'then' still does in modern Greek (Alexiadou 1994).[10] As maximal projections, the same adverbs are topicalized outside the core clause.

Contesting this, Pappas asserts that all "temporal expressions" are equally associated with preverbal and postverbal cliticization. This is possible. However, we think that he may have dismissed Mackridge's observation too hastily. Unfortunately he does not tell us how he categorized adverbs, but the one "temporal expression" that he does cite is the measure phrase *xronus peninda* "for fifty years". This suggests that he may have misclassified the relevant adverbial categories by conflating temporal adverbs with measure phrases which happen to refer to time. It is well known that measure phrases (adverbials of extent) such as *(for) fifty years* pattern syntactically like spatial measure phrases such as *(for) fifty miles*, and unlike adverbs of time such as *today* and *in fifty years*. In many languages the former constitute a clearcut separate category with characteristic syntactic properties of its own. For example, in Finnish they shift from accusative to partitive case under negation, like objects but unlike time adverbials. In Sanskrit they are the only adverbials which passivize. In Greek, English, Finnish, and other languages they are usually preposed only when focused or as contrastive topics, with the special intonation contours appropriate to those discourse functions, whereas regular adverbs of time are easily preposed under neutral discourse conditions.

(9)   a. símera perpátisa δío óres.
             today   I-walked   two hours
          'Today I walked two hours.'

       b. δío óres perpátisa símera.
             two hours I-walked   today
          'Two hours I walked today.'   (*two hours* is focus or contrastive topic)

Both in Greek and English, (9a) can receive normal intonation, while (9b) requires a special intonation.

In view of this we would be surprised if a more fine-grained investigation of LMG adverbs, based on a syntactically adequate classification, did not reveal different preferences with respect to topicalization and focusing, correlating with differences in the clitic placement they induce.

Pappas' own interpretation of the variable effect of temporal adverbs on clitic placement is this: "Temporal expressions are usually clausal adjuncts, and subjects are rendered partly redundant by pro, so I suggest that speakers were ambivalent about the significance of such elements, hence the free variation in these environments. It is quite possible that the focus/topic distinction was also instrumental in creating this

distinction since fronted constituents are more likely to be focused elements than subjects. It must be emphasized that such linear relationships, as the ones I propose, are by definition weaker than structural ones, which would explain why the pattern of variation appears to be so fluid at first sight."

The notion of speakers' "ambivalence" is a little vague here, but maybe the idea is that subjects leave a null resumptive pronoun which counts optionally as a verbal argument, and that clitic placement with preposed adverbs depends on whether they are adjuncts or subcategorized. These predictions are certainly worth testing; at this point we have no evidence either way. We do not see in what sense order is a "weaker" relation than constituency. In point of fact, *all* of Pappas' proposed analogical generalizations are based on linear word order relations rather than on constituent structure. Therefore, he can hardly appeal to the "weakness" of linear word order relations to explain why temporal adverbs and subjects are special in allowing seemingly free variation in clitic placement.

2.5   Gerunds and imperatives

Although we did not specifically discuss gerunds and imperatives in our article, our analysis straightforwardly predicts that they require postverbal clitics. Gerunds clearly have none of the diagnostic properties of ΣPs. They do not allow focused constituents or preverbal subjects or emphatic negation, as they should do if they had a [Spec,ΣP] position. And they do not allow modal particles or δen, as they should do if they had a Σ^0 position. The conclusion is that they are not ΣPs (as Piñon (1993) already argued on similar grounds for Hungarian). On that understanding, there is nothing to the left of the gerund that can host a clitic. Therefore prosodic inversion must take place, which is to say that postverbal clitic placement in gerunds is obligatory.

Pappas' claim that we cannot derive the cliticization pattern associated with gerunds is simply an error, based on the false premise that gerunds are ΣPs.

As for the imperative: as a non-tensed but modal verbal category, it ought to be in Σ^0 (just as tensed verbs are in Tns^0, and for analogous reasons). This seems to be basically correct. It predicts that imperatives cannot be negated (imperatives must be replaced by subjunctives under negation), and provides the [Spec,ΣP] position needed for preverbal focus (*to vivlio fere mu* "bring me the BOOK"). This suffices to account for the main differences between gerunds and imperatives. Gerunds do not project a ΣP or CP, hence do not have preverbal focus, and have postverbal cliticization. Imperatives do project a ΣP and therefore allow preverbal focus in its specifier.

However, Pappas has discovered an extra element of variation in LMG imperatives: when an imperative verb is preceded by a focus, a following clitic is preverbal about half the time. The variation may indicate that an imperative verb may, instead of raising to Σ^0, stay in T^0, like a regular finite verb. If it moves to Σ^0, a following clitic is postverbal, by the standard encliticization to the preceding element (unlike postverbal cliticization with finite verbs or gerunds, which is the result of prosodic inversion). If

it stays in T⁰, the clitic will be preverbal if it has a host on its left, which is to say in the presence of a preverbal focus.[11] When imperative verbs stay in T⁰, we predict the possibility that they might be negated. And in fact, instances of negated imperatives occur in LMG:

(10) to thelima mou pliroson ke apiϑis   mi γinu
      the wish   my   fulfill   and disobedient not become
      'Fulfill my wish and do not be disobedient.' (*Belisarios* 221)

2.6   Auxiliaries

Pappas found an instance of a clitic between the auxiliary *exo* and the infinitive:

(11) na   xes to teliosi
      Subj have it   finish-Inf
      'If only you had finished it' (*Rhodos* 454)

We had predicted the existence this construction as part of an intermediate syntactic system (with proclitic V⁰) and found it in the modern Kozani dialect. However, Pappas dismisses (11) as an "aberration" on the grounds that it is the only example he found, in accord with the maxim *unus testis, nullus testis*.

While this maxim is a sound rule of thumb, it should not be applied in a mechanical way. Even a single occurrence of a construction should be taken seriously, as long as *(1)* the reading has good textual and editorial support, *(2)* the construction itself is rare enough that the existence of a single token could be due to chance, and *(3)* there is a principled explanation for the construction. These three criteria, which Pappas has elsewhere articulated and invoked himself,[12] are fully applicable to (11) and militate against discarding the reading as a scribal error or other textual corruption. While not wishing to trumpet this one example as further confirmation for the predicted Kozani pattern until we see evidence of the other parts of that pattern, we find its peremptory dismissal as an "aberration" premature.

2.7   The syntax of *olos*

Pappas 2001:102 notes that a topicalized object unexpectedly allows preverbal clitics when accompanied by *olos* 'all'. This possibility arises when *olos* is focused and the rest of the nominal appears to its left in Topic position:

(12) [[tes xores   mu oloγira]_DP [[oles]_QP tes afanizi]_ΣP]_ΣP
          the countries my all-around   all   them destroys
      'My countries all around, he destroys them all.' (*Rimada* 1308, Pappas 2001:79, Pappas, this issue)

It does not matter for purposes of the present discussion whether the quantifier and the nominal phrase are separated by a movement process (the usual assumption), or base-generated in separate positions and coindexed by a rule of construal or anaphora.

What is important is that such sentences have *both* a topic *and* a focus corresponding to the same argument, so to speak. The gross descriptive generalizations in (1) do not give a clear result for this case, since they do not spell out which phrase the resumptive clitic pronoun is associated with. The more adequate descriptive generalization in (3) and the final formulation in (4) correctly predict that the focused element will host a preverbal clitic whether there is a topic adjoined before it or not.

Pappas cites example (13) as a problem for our analysis.

(13) ta iδes   ke ta ikusas   ola afiγisu me ta
      that you-saw and that you-heard all   narrate   me   that
      'what you have seen and heard, tell it all to me' (*Lybistros* 2784)

He overlooks that this sentence has an imperative verb. As we have just seen, imperatives work differently in that they can move to Σ^0, in which case a clitic will follow them. Pappas' objection is therefore unfounded.

In Pappas' own analysis, the preverbal placement of clitics after *olos* is treated as an idiosyncrasy which has only a historical explanation. Pappas ascribes it to contamination with the "partitive" construction. His idea is that, at the stage when clitics were still consistently postverbal, sentences like (14a) could be misparsed as having, instead of a genitive clitic that is part of the object, an object clitic before the verb, as in (14b).

(14)   a. [olus tus]$_{NP}$ [epatise]$_{VP}$
             all(Pl) them   he-conquered
           'all of them, he conquered'

        b. [olus]$_{NP}$ [tus epatise]$_{VP}$
             all(Pl)   them he-conquered
           'All, he conquered them'

This misparsing gave rise to a new special rule "object clitics can precede the verb after *olos*", which then gave rise to sentences with unambiguous preverbal clitics like (15b), replacing previous (15a).

(15)   a. olin γnorizis tin
             all   you-know it/her
           'you know it all'

        b. olin tin   γnorizis
             all   it/her you-know

The proposed analogy is implausible, empirically unmotivated, and unexplanatory.

It is implausible because hearers or learners could hardly have assigned the wrong structure to sentences like (14) in the face of massive evidence that object clitics were postverbal and possessive clitics postnominal. It is as if hearers or learners of English were to misparse sentences like (16a) as (16b), with the meaning of (16c),

(16)   a. [My friend in Athens]$_{NP}$ [is happy]$_{VP}$.

    b. [My friend]$_{NP}$ [in Athens is happy]$_{VP}$.

    c. [My friend]$_{NP}$ [is happy in Athens]$_{VP}$.

and come up with a rule that replaces *John is happy in Athens* by **John in Athens is happy*.

    The analogy is unmotivated because it does not relate the change to anything else in the Type A system. Exactly the same analogy could be formulated for the postverbal clitic system of the Pontic dialects, for example. Our analysis of Pontic clitics as word-level enclitics explains why that change never happened in any Pontic dialect.

    Finally, the analogy is unexplanatory because it does not relate the special clitic behavior after *olos* to the special syntax of *olos*. We might ask, for example, why an analogous misparsing of (17a) as (17b) did not give rise to the rule that object clitics can precede the verb after *pateras* 'father', as in (17c), which is ungrammatical in these dialects.

(17)   a. [ton patera mas]$_{NP}$ [esosan]$_{VP}$
          the father   our   they-saved
       'our father, they saved'

    b. [ton patera]$_{NP}$ [mas esosan]$_{VP}$
          the father   us   they-saved
       'father, they saved him for us'

    c. *[ton patera]$_{NP}$ [mas ton esosan]$_{VP}$
          the father   us   him they-saved
       'father saved us'

Our analysis offers an account for why it is precisely the quantifier *olos* that allows preverbal cliticization, and not some other element or class of elements.

2.8   *uk* and *an uk*

Mackridge and Pappas noted that *uk* is associated with postverbal clitic placement and *an uk* is associated with preverbal clitic placement. We proposed that *uk* is located in a higher operator position ([Spec, C], let us assume) and that it attracts the verb to C⁰. But, since *an* "if" is a complementizer (as its behavior on its own shows, see (1b5)), it fills the C⁰ position, which precludes the verb from moving to C⁰. The position of *uk* is then determined by its scope. If *uk* has scope over *an* in C⁰, it moves up to [Spec, C] (*uk an* "not if"), if it comes under the scope of *an*, it remains in the lower position where negation normally appears (*an uk* "if not"). In either case, the clitic of course remains preverbal, since it has something on its left to lean on.

    Similar variation in the placement of negation is found in some of the other older Indo-European languages. In Old English, the negation *ne* is assumed to be in [Spec, C] (or in some high operator position), where it attracts the verb to the following C⁰ slot (see (18a)). But in the presence of the complementizer *gif* "if" in C⁰, negation and the verb stay in a lower position, as in (18b).[13]

(18) a. & ne bið ðær nænig ealo gebrowen mid   Estum
          and not is   there any   ale   brewed   among Estonians
      'and no ale is brewed among the Estonians'

      b. Gif þes bealdwyrda biscop acweald ne bið
          If   this bold   bishop killed   not will be
      'If this bold bishop will not be killed'

Pappas insists that *an uk* is a problem for us. Somehow he missed the obvious solution just presented, even while proposing a similar one of his own. According to him, pronouns appear postverbally after *uk* because *uk* is proclitic and pre-empts the preverbal position. When *an* and *uk* are combined they form a phonologically independent unit which no longer requires a host. As a result, the preverbal position is free, and, since the verb is preceded by a function word, the pronoun is placed to the left of the verb.

Though broadly similar in conception, our respective solutions differ in the assumptions they rely on. Ours depends on the principle that the order of operators reflects scope, and on the constraint that the complementizer slot cannot be multiply filled. This so-called "doubly-filled Comp filter" holds for Modern Greek and is widely attested elsewhere; it is likely to have been valid for Medieval Greek as well.[14] Pappas' proposal assumes that a clitic pre-empts the preverbal position, so that there can be only one proclitic per host.[15] But a putative constraint blocking multiple clitics does not even hold for Greek. Pappas himself (2001:79) effectively refutes it for LMG by his observation that, when a verb is associated with two clitics, both are put on the same side of the verb, either before it or after it. So, if a procliticized *uk* on the verb prevents proclisis of a pronoun to it, why doesn't a procliticized pronoun on the verb prevent it? On Pappas' account we would expect the first pronoun to push the second into postverbal position, but Pappas states that split cliticization (Pronoun+V+Pronoun) does not occur in his database.

The *uk* and *an uk* data turn out to support our analysis. Pappas' criticism is misplaced. His own solution requires an otherwise unmotivated constraint on multiple proclitics which moreover is inconsistent with his own data and with his analysis of object clitics.

3   The analysis of clitics: prosodic issues

3.1   Preverbal clitics

On our analysis clitics are always enclitic, while on Pappas' analysis they are enclitic only in postverbal position, and proclitic otherwise. The point of disagreement is the prosodic affiliation of preverbal clitics.

On historical grounds, it would not be surprising if object pronouns were enclitic in LMG, as they were in the classical language and continue to be in a number of

modern dialects, including Pontic (Type B), and, more interestingly, to at least some Cappadocian dialects (Type A). In the latter, a clitic assigns a stress to a preceding mood marker, which is otherwise unstressed (see (19c), Dawkins 1916:496, Janse 1998).

(19) a. ná   se pitákso
          MoodPart you I-send
          'I want to send you'

      b. ná   se ta dóso
          MoodPart you him I-give
          'I'll give him to you' *(ibid.)*

      c. na   galǰépso
          MoodPart I-ride
          'for me to ride' *(ibid.)*

This what we called active subcategorization, after Inkelas 1989.

Preverbal proclisis in the LMG system would be unexpected on our analysis, though not impossible. Descriptively, it would mean that the structures (3a) and (3b) would be associated with different stress patterns. A clitic in its basic position would attach prosodically to the preceding element, whether X^0 or X^{max}, without forming a prosodic word with it, and so would not assign a stress to the preceding syllable. Prosodic inversion, on the other hand, would result in a more intimate combination, analogous to that of a noun with a possessive clitic, which constitutes a prosodic word and so would get a second stress if the first one is more than three syllables from the end. A rule to this effect could be added to our analysis, though such a complication in an otherwise utterly simple system might raise suspicion.

What does the data tell us? There are two potential sources of evidence: the accentuation of the manuscripts, and the metrical practice of poets. Let us consider them in turn.

3.2 The written accents

Before a clitic, no rhythmic stress is marked on the final syllable of a preceding noun or other preceding constituent, as in (20a), but it is marked on a preceding verb, as in (20b).

(20) a. síselon   tón epétaksa
          with-saddle him threw
          'I threw him [off his horse] together with his saddle' (*Lybistros* 2047)

      b. trémusín ton i   árxontes
          fear   him the rulers
          'The rulers fear him' (*Belisarios* 300)

If we take these stress markings at face value, as Pappas does, we would conclude on our analysis that prosodic inversion around the verb creates a phonological word.

But some caution is in order. How do we know that the accentual difference in (20) actually renders the author's speech? It may reflect a spelling convention introduced in the course of the MS tradition, or even by the modern editor of the text. Some of the LMG accent markings certainly *must* be just that, and cannot be direct records of the spoken language of the time. For example, the ancient rule that clitics assign an accent to the final syllable of properispomena but not to the final syllable of paroxytona (see (21)) is faithfully adhered to in the text, even though the accentual distinction between acute and circumflex, and the length distinction that supported it, had been lost for well over a thousand years.

(21)   a. ποῖσέ τον (*Belisarios* 53)

        b. ποίσω σε (*Belisarios* 197)

Similarly, preverbal clitics are always written with an accent, even though they were almost certainly unstressed, at least before a following stressed syllable, whereas postverbal clitics were written without an accent. In such cases Pappas would presumably agree that the spelling is artificial.

3.3   The evidence from meter

To support his claim that clitics do not assign a stress to a preceding syllable, Pappas argues on metrical grounds that in a line such as (22), the syllable *-tes* could not receive a stress from the following enclitic.

(22) i érotes ton eɣénisan
      the cupids him gave birth
      'the cupids gave birth to him' (*Achilleid* 1113)

For if it did, "the hemistich would have three beats, on the second, fourth, and sixth syllables, *which is a rhythmic pattern that I have not encountered anywhere else*" (our italics).

We are puzzled by this argument, for two reasons. First, a three-beat rhythmic pattern with stress on the second, fourth, and sixth syllables occurs on virtually every page of every text in *politikos dekapentasyllabos* meter that we have seen. Opening our copy of Wagner 1970 literally at random, we find hemistichs with beats on the second, fourth, and sixth syllables such as:

(23)   a. kefáli, xéria, sómata
          head   hands bodies
          'head, hands, bodies' (*Threnos* 82)

        b. dukádes, kúnti, prínkipes
          dukes   counts princes
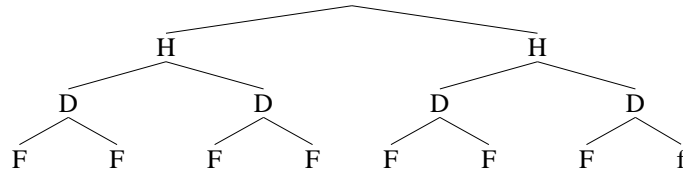   'dukes, counts, princes' (*Threnos* 177)

Secondly, in (22) the last beat actually falls on the *seventh* syllable, not on the sixth as Pappas says, because the first dipody ends in an extra unstressed syllable. But this

does not change the conclusion, for hemistichs with this rhythm, having beats on the second, fourth, and seventh syllables, are also well attested:

(24) a. mikrón to léγει o próloγos
          small   that says   the prologue
          'what the prologue says is a small thing' (*Threnos* 19)

      b. amí sxolázo, afíno to
          but I-stop   I-leave it
          'But I stop here, I leave it' (*Threnos* 42)

This is not in the least surprising if we consider the structure of the meter. It is based on four iambic dipodies, of which the last is catalectic. Thus it belongs to a vast family of meters, which includes also the ancient Greek iambic tetrameter, the Latin septenarius,[16] the English fourteener, and, in 20th century Greece, the ballad meter of Kavvadias. It is derived simply by successive binary branching, so that a line consists of two hemistichs (H), a hemistich of two dipodies, or cola (D), a dipody of two iambic feet (F), and each iambic foot of two syllables, except for the last foot, which is unary (f).

(25)

```
                         _____
                        |                   |
                        H                   H
                      /   \               /   \
                    D       D           D       D
                   / \     / \         / \     / \
                  F   F   F   F       F   F   F   f
```

There is an obligatory caesura between the hemistichs. Every even-numbered syllable falls in a strong position and is a preferred location for stress, although weak positions may be stressed. Each dipody must contain at least one stress. Therefore, each hemistich has *at least two* "clearly felt beats". But it can also have *more than two*, as lines like (23) and (24) show.[17] Hence we think that the argument from metrical usage, far from being "subtle" and "convincing", is incorrect.

Pappas (this issue) argues that a clitic is prosodically attached to a following verb, on te grounds that it can undergo contraction with it. Again, we think this is a hasty conclusion, because contraction in LMG takes place even between full words. Some of it is reflected in the orthography, and the meter shows even more of it:

(26) Words in isolation: thelo na ipo alla oliga
      Text as written: thelo na 'po all' oliga

                                  s   s   s
      Metrical: thelo na 'po 'll' oliga

But the meter reveals that even possessive clitics, which certainly encliticize to their left, can contract with a following word.

(27) t' ónoma m' u γráfo to
      the name   my not write it
      'I don't write my name' (*Rhodos* 1025)

On the other hand, contraction is optional even with preverbal clitics, as it is between words in general:

(28) mikros i megas dia na pi, dia na se onidisi
      small   or big   for to say for to you blame
      'someone small or big to say or to blame you' (*Threnos* 166)

Here the *-e* of the clitic *se* cannot contract with the following vowel, otherwise the line would lack a syllable. Thus, contraction is neither restricted to clitic boundaries, nor obligatory at them.

In sum, the evidence for preverbal proclisis in LMG is not compelling. The testimony of orthography is suspect because of its artificiality, and so far at least, meter yields no firm clues either way.

4   Conclusion

We think we have shown that our analysis stands up well to Pappas' objections, though we certainly do not expect it to remain the last word on the subject. His own view that the LMG pattern is not subject to any syntactic generalizations seems to us wholly unjustified. This said, we would like to emphasize that his work is the most important contribution to LMG syntax to have appeared in a long time. The reader will have noticed how much of the above argumentation is based on data amassed by Pappas himself. With respect to careful documentation he sets a standard that is only too rarely attained.

Among the open questions that remain on the agenda is the relationship of LMG to earlier stages of Greek and to the modern dialects, and possible finer differentiations within LMG by chronology, style and genre, and provenance. Detailed analysis of the patterns of apparent optionality will very likely reveal additional factors at work. Here syntactic analysis must go hand in hand with statistical methods of the sort used by Pappas. These are a powerful probe into grammar, but the answers they provide can be only be as good as the linguistic questions that go into them. Given a set of candidate factors, statistics can tell us which of them make a difference. For example, Pappas was able to simplify Mackridge's descriptive generalizations by showing that some of the statistical differences between environments are artifacts of meter. But these methods can't detect factors that are not coded into the database in the first place. Since it is impossible to code every logically possible factor into the database, the factors that do get coded had better be well chosen. This is where the choice of syntactic analysis becomes critical. Among the desiderata for future work are a more fine-grained classification of adverbs based on the categories known to be relevant for

word order and constituency, a closer investigation of subject placement, and a fuller exploitation of the metrical evidence.

Notes

[1]We would like to thank Brian Joseph and his co-editors for giving us the opportunity to return to the topic, as well as for their helpful editorial comments.

[2] In general, of course, Modern Greek, has no V-to-C movement. That cases (a4) and (a5) really are residual irregularities from an earlier stage is also suggested by that fact that they are largely eliminated in the modern Type A dialects. In Cappadocian, *u(k)* gets regular preverbal clitics after it everywhere except in the Pharasa dialect, and *di* (the presumed avatar of *oti*) seems to behave as a particle with the verb "say"; see (29), from Dawkins 1916:492:

(29) Ípen di ǰe ǰíno   o fugarás ki   ...
      said *di* and that(DEM) the poor man that(COMP) ...
      'and that poor man said that ...' (with direct discourse)

[3]In C&K 2001 we suggested that prosodic inversion is not syntactic movement, but a strategy for re-solving competing syntactic and prosodic constraints, in the spirit of OT. Several other ways to think about prosodic inversion are currently under debate. For present purposes, the question is not important.

[4]In our view, analogy basically regularizes structure. To be sure, complex mixes of the old system and the new one can occur until the analogy goes to completion. Also, learners may internalize their own (or each others') wrong outputs at intermediate stages of acquisition. See Kiparsky 1979, where these cases are respectively referred to as PARTIAL ANALOGY and FALSE ANALOGY. Pappas' proposal seems different, though. He seems to be saying that a robust antecedent system is disrupted by local analogies which are *not* related to the new system (Modern Greek) that ultimately becomes established. This seems more dubious.

[5]Setting aside mixed dialects like that of Amisos, clitic-specific variation in the dialects is confined to two things: the unique behavior of the negation *ǰo* in the dialect of Pharasa, which preserved the ancient syntax of its cognate *uk* (case (1a5)), and the merger of mood markers with a following clitic into a prosodic word in some dialects (the phenomenon of "active subcategorization"). Such other variation as there exists has to do not with the rules for clitic placement but with the availability of the left-peripheral positions for various types of elements, notably whether non-focused subjects can move to [Spec,ΣP], as mentioned above.

[6]Pappas (this issue, section 2.5) objects on the grounds that change in the direction towards the standard Greek system of preverbal cliticization is found in 17th century prose from Crete. But no-one has claimed that Type A systems are absolutely immutable. The point is rather that they can be stably transmitted, and for the most part have been, which belies their supposedly anomalous status. Like any other regular feature of language, they can change through normative pressure or borrowing, or even by ordinary endogenous processes.

[7]It is telling that the behavior of the negation *u(k)*, a feature of LMG which really is synchronically anomalous, was regularized everywhere except in the more conservative dialect of Pharasa (fn. 2).

[8]Remarkably, Anttila shows that, in a range of interesting cases, the observed frequencies of the variants in a given environment are predicted by the proportion of allowed rankings in which it is the optimal output in that environment.

[9]As mentioned earlier, some dialects also seem to allow non-focused preverbal subjects to be placed in [SPEC,ΣP]. Again this option should correlate with clitic positioning in Type A dialects. This option, and its dialectal distribution, remains to be investigated.

[10]The diagnostic is that they can come right after a focus or a Wh-phrase: *Pjon akoma skeftete o Yanis?* 'Who is John still thinking about?'

[11] This latter situation may persist in the modern Cretan dialects mentioned by Pappas. Kontosopoulos (1994:32) reports preverbal clitics in imperatives in the presence of preposed objects (*ena gafe mu kame* "make me a coffee"), suggesting that in this dialect imperatives, like other finite verbs, remain in T_{NS}^0.

[12] Pappas 2000 defends the authenticity of a *hapax legomenon* comparable to (11), arguing that precisely these three criteria outweigh the *unus testis, nullus testis* principle. It would have been consistent to invoke the same considerations here too.

[13] These examples are cited from Traugott 1992.

[14] The doubly-filled Comp filter is actually one of the earliest typologically general constraints to have been formulated in generative syntax (ultimately dating back to Ross 1967). We do not need to claim that it is universal, of course, merely that it holds for Medieval Greek, which is rather likely for the reasons stated in the text.

[15] Of course we claim that clitics are enclitic even preverbally, but we will set aside this point for the sake of the argument.

[16] Blumenfeld 2004 makes a convincing case that the earliest form of the Latin septenarius, that of Plautus, was actually trochaic.

[17] Pappas' error may be due to a misunderstanding of Horrocks's description (1997:257): "In each hemistich, there are two clearly felt beats, which are provided by accent placement. In the first hemistich the accent may occur either on the second or fourth syllable and on the sixth or eight syllable, while in the second hemistich the accent may occur either on the tenth or twelfth syllable and, obligatorily, on the fourteenth."

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Με την εργασία αυτή υποστηρίζουμε την προηγούμενη ανάλυσή μας (Condoravdi & Kiparsky 2001) της συντακτικής δομής και των προσωπικών κλιτικών αντωνυμιών στα μεταγενέστερα Μεσαιωνικά Ελληνικά, αντικρούοντας την κριτική του Πάππα που δημοσιεύεται σ' αυτό το τεύχος. Συγχρόνως επισημαίνουμε μερικά προβλήματα στην ανάλυση του ίδιου του Πάππα και υποδεικνύουμε θέματα για περαιτέρω έρευνα.