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Clitics and Clause Structure

Abstract

In Medieval Greek and many modern dialects, clitics are syntactically adjoined to an IP projection. In another set of dialects they have become syntactically adjoined to a verbal head. In the most innovating dialects (which include Standard Greek) clitics are agreement affixes. Extending the Fontana/Halpern clitic typology, we propose that the trajectory of lexicalization goes from X^{max} clitics via X° clitics to lexical affixes. The evolution of clitic placement also reveals the rise of a composite functional projection ΣP.

1 Introduction

1.1 The clitic typology

In modern Greek, verbal argument clitics are always adjacent to a finite verb, but in some dialects they always follow or always precede it, and in some dialects they precede or follow it depending on what other material is present on the periphery of the clause. We argue that clitics in modern Greek dialects are of three distinct types:

Type A: X^{max} clitics, syntactically adjoined to a maximal projection.
The clitics of the following dialects are of the X^{max} type: inland Asia Minor (Cappadocia, Bithynia), the Cyclades, some Dodekanese islands (Karpathos, Kos, Astipalaia), two localities on Lesbos (Ajassos, Plomari), Cretan, the Tauro-Roumeic dialects of Ukraine (Marioupoli/Azov), Medieval Greek. All are enclitic.

Type B: X° clitics, syntactically adjoined to a lexical head.
This type of clitic occurs in two forms. X° enclitics are found in the Pontic dialects, spoken in Russia and in Turkey (Greece since 1922, with a small population of Greek-speaking Moslems remaining around Of in Turkey). X° proclitics are found in the town of Kozani in Greek Macedonia.

Type C: lexical clitics, affixed to words.
The clitics of standard Greek are lexical prefixes, as are those of most modern dialects of mainland Greece and of the Western islands, as well as the dialects of Italy.

In general, all the clitics of any given dialect are consistently of type A, type B, or type C. Therefore we can also speak of type A, type B, and type C dialects.[1]

Halpern & Fontana 1994 propose a distinction between X^{max} and X° clitics. X^{max} clitics are maximal projections which adjoin to a phrasal projection and do not require a host of a particular syntactic category. X° clitics, by contrast, require a host of a particular syntactic category. We take this to be the main characteristic of X° clitics. Halpern & Fontana, moreover, claim that X° clitics are in effect inflectional affixes. We argue that there are two types of X° clitics, those that are *syntactically* adjoined to a lexical head and those that combine with their host in the lexicon.

1.2 The phrase structure

Our analysis of clitic positioning in type A dialects is based on certain assumptions about their phrase structure. In this section we briefly motivate those assumptions.

The clause structure of type A dialects is similar to that of standard Modern Greek. Specifically, they share the following properties with SMG: (a) they allow for verb-initial clauses; (b) they have the same distribution of negation and mood particles; (c) a single focused XP or a single emphatic negative element can appear preverbally within the IP; (d) they allow for multiple topics; (e) a preverbal focused XP or emphatic negative is always to the right of any preverbal topics; (f) no argument or adjunct XP can intervene between a preverbal focused XP or emphatic negative and the verb. [1] illustrates properties (c) and (e) for Cappadocian, a type A dialect, and for standard Modern Greek. The discussion of the distribution of clitics in section 2 illustrates all these properties.

[1] **a. T óryo m s KANÍNA dén do hereniško**
the work mine to noone not it entrust
'I entrust my work to noone.' (Axos, Cappadocia; M & K 182)
b. Ti δoulja mu se KANENAN δen tin embistevome.
the work mine to noone not it entrust
'I entrust my work to noone.' (Modern Greek)

Uncontroversially, we assume that arguments originate within the VP, and that finite verbs in Greek move from V to the head of TnsP. Following Laka 1990 and Piñón 1993 we assume that the highest inflectional projection is ΣP, a composite of NegP, MoodP, and FocusP. It is headed by negation *(mi, δen, mina),* if present, and by the mood particles *(na, θa),* and focused XPs or emphatic negatives can move to its specifier position. Modern Greek has no V-to-C movement hence no word order asymmetry between main clauses and subordinate clauses. Topicalization is adjunction to ΣP and to CP.

All Greek dialects with X^{max} clitics require the phrase structure in [2].

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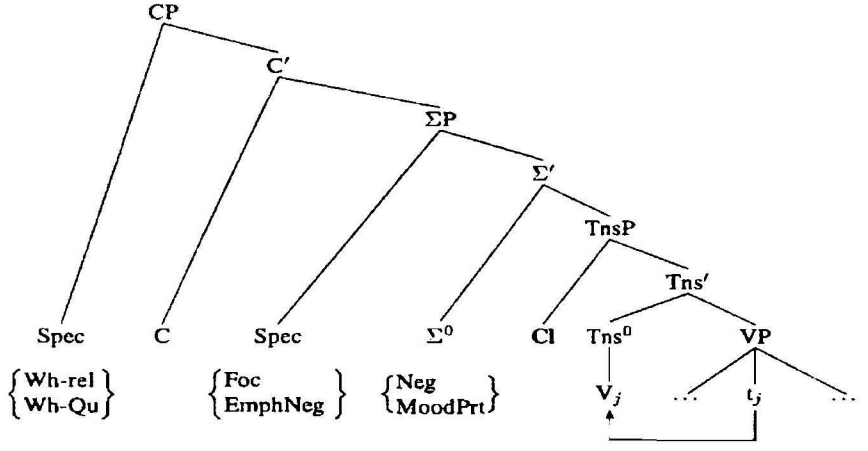
[1]We know of two mixed systems. Amisos, formerly spoken in Turkey, vacillates between type A and B, and parts of the Dodekanese show a mix of type A and type C behavior. Our analysis predicts that they represent dialect mixture due to contact and/or to migration (and not endogenous change in progress).

[2]



Two remarks on this phrase structure are in order. First, we are agnostic as to whether there are functional projections other than the ones we have indicated in [2]. Secondly, like other approaches which posit these or similar IP projections, we owe an account of the unfilled Spec positions (see Alexiadou and Anagnostopoulou 1998, who argue that these specifier positions are not licensed in null subject languages, like Greek).

In the following sections we show how the positioning of clitics is derivable on the basis of this phrase structure.

2 Type A Dialects: X^{max} Clitics

2.1 The distribution of clitics in A dialects

In type A dialects, clitics appear immediately before or immediately after a finite verb. Dawkins (1916) and Janse (1998) describe the distribution of clitics in Cappadocian as follows, taking in effect the post-verbal position to be the default.

[3] a. *Main rule:* Clitics directly follow V.

b. *Special rule:* Clitics directly precede V in the following cases:
1.after a negation,
2.if V is subjunctive or future,
3.after interrogative wh-phrases,
4.after relative pronouns (Janse 1998),
5.after subordinating complementizers (Janse 1998),
6.after preverbal phrases in focus (Janse 1998).

These generalizations hold not only for Cappadocian, but for our type A dialects in general. Significantly, all these dialects conform to the generalizations outlined in the preceding section, which according to us diagnose the presence of a syntactic ΣP projection.

On the surface, it appears that in Type A dialects the clitic or the verb appear in at least two different syntactic positions. We argue instead that both the clitic and the verb appear in a single syntactic position. The distribution of the clitics is a consequence of their syntactic and prosodic properties. Specifically, we claim that clitics originate in (or move to) an X^{max} position, adjoined to a functional projection whose head the verb moves to, namely TNSP. Clitics prosodically subcategorize for a prosodic word on their left within the same CP. Adjoined constituents are not visible for cliticization.[2] If there is no available prosodic host to their left, they encliticize onto the adjacent word on their right by PROSODIC INVERSION (Halpern 1995).[3] According to our proposal then, postverbal clitics are the special case.[4]

Assuming the phrase structure in [2], the distribution of postverbal clitics in dialect A is characterized by the following descriptive generalization:

[4] Clitics are postverbal if and only if there is no (non-adjoined) constituent within the same CP to the left of the clitic.

We show below that the syntactic assumptions in section 1.2 account for the descriptive generalization [4]. To do that, we demonstrate that, under these assumptions, clitics are postverbal exactly when they cannot be preverbal because there is no host for them, in which case prosodic inversion takes effect as a last resort strategy.

2.2 Preverbal Clitics

Clitics are preverbal if and only if there is some non-adjoined constituent within the same CP to the left of the clitic. This may be a complementizer (in C°), a Wh-element (in [Spec,CP]), a negation or modal particle (in Σ°), or a focused constituent (in [Spec,ΣP]}. We take up each of these cases in turn. The clitics are underlined in our examples.

2.2.1 Complementizers

When the sentence is headed by C° with a lexical (overt) complementizer and this complementizer constitutes the rightmost lexically filled position before the clitic, it serves as its host. No prosodic inversion takes place then. The examples in [5] demonstrate this preverbal positioning of the clitic after a variety of subordinating conjunctions. Note the contrast in clitic ordering between the two clauses in [5d].

[2] This appears to be a pervasive generalization governing clitics in need of a theoretical justification.

[3] An alternative would be to assume that the verb moves to Σ° if the Σ and C projections are devoid of any lexical material. What would be the syntactic motivation of such a movement? Terzi (1999), in an analysis of the positioning of Cypriot clitics, which appears to be like that of type A dialects, argues that the clitics need a syntactic licenser and in the absence of any other licenser the verb moves to the highest projection within the IP, (he MoodP, in order to license the clitics. One reason we do not adopt this proposal is that the motivation for syntactic licensing seems rather weak. The set of licensers includes both functional heads, like negation and modal particles, as well as heads of non-functional projections, such as the head of a preverbal focus phrase. It would be a strange licensing requirement that could be satisfied by so disparate a set of licensers.

[4]The distribution of clitics in type A dialects appears very similar to that of Bulgarian. King (1996) has proposed an analysis of the latter that makes use of prosodic inversion as well.

[5] a. **Óp <u>to</u> páišge, ῖrte éna binár koundá**
while him take-PastImp-3sg came-3sg a spring near
'As he was taking him, he came near a spring.' (Ulaghatsh, Cappadocia; D 366)

b. **ton <u>do</u> émaxen**
when it learned-3sg
'when he learned it' (Axos, Cappadocia; M & K 216)

c. **θaró pos <u>táfae</u> ta pitákja**
believe-1sg that them ate-3sg the litle pies
'I believe that he ate the pies.' (Pyli, Kos, Dodekanese; D 230)

d. **Ῑfera <u>toγ</u>, γjatí <u>ton</u> íθela.**
brought-1 sg him because him wanted-1sg
'I brought him because I wanted him.' (Karpathos, Dodekanese; Minas (1970))

2.2.2 Wh-pronouns

In relative clauses and in matrix or embedded wh-questions, the specifier of CP is occupied by a relative pronoun or an interrogative wh-phrase. Therefore, a clitic will always appear preverbally in relative clauses, as in [6a], or in wh-questions, as in [6b,c]. Note that, as in standard Modern Greek, the (CP-adjoined) topic in [6c] is to the left of the wh-element (in [Spec,CP]).

[6] a. **op tó draná**
whoever it sees-3sg
'whoever sees it' (Axos, Cappadocia; M & K 57)

b. **tse rotúsen o γénas ton álton índa <u>tus</u> ítθelen o βasiltás**
and asked-3sg the one the other what them wanted-3sg the king
'and they were asking each other what the king wanted them for' (Astypalaia, Dodekanese; D 57)

c. **Eto to beír čís <u>to</u> épken aúča?**
this the stallion who it made-3sg thus
'Who made this stallion like this?' (Delmeso, Cappadocia; D 314)

2.2.3 Negation and modal particles

Negation and modal particles, we assume, are heads of ΣP. Therefore, when such a particle is present, the rightmost lexically filled position before the clitic is Σ°, which hosts the clitic. No prosodic inversion is necessary.

[7] a. **Túči čin góri zarjaní tu enéka rén <u>čin</u> aγápisi**
this the daughter present his wife not her love-3sg
'This daughter his present wife does not love.' (Silli; D 300)

b. **E <u>si</u> skutonu, na <u>mi</u> padreps.**
not you kill-1sg NA me marry-2sg
'I won't kill you so that you find me a wife.' (Plomari, Lesvos; K 492)

The mood particles *na, θa, as* form a phonological word with the clitic even when they are not phonological words on their own. [8b] shows that the particle *na* is stressed, and therefore constitutes a phonological word, just in case a clitic follows it.

[8] a. **ás <u>to</u> piáso, ás to kópso, ke kalá ás <u>to</u> faγo**
AS it catch- 1sg AS it kill-1sg and well AS it eat-1sg
'Let me catch it, let me kill it, and let me eat it right up.' (Ulaghatsh, Cappadocia; D 366)

b. **Deré βaβá m na ért, ge ná se rotíš ...**
now father my NA come-3sg and NA you ask-3sg
'Now my father will come and will ask you.' (Ulaghatsh, Cappadocia; D 366)

2.2.4 Focus

Preverbal focus and emphatic negatives are housed in [Spec,ΣP]. In [9] and [10] such a focused element constitutes the rightmost pre-clitic position with lexical material. The examples in [10] are answers to wh-questions, with the focused phrase corresponding to the wh-phrase of the question.

[9] a. **[$_{FOC}$ Polí] <u>do</u> séβdinišge**
much him loved-3sg
'She loved him much.' (Ulaghatsh, Cappadocia; D 366)

b. **eší tšáoz deré íleγes ké [$_{FOC}$ eγelfó] <u>to</u> éhis ké aγápanes <u>to</u>.**
you until now said-2sg and brother it have-2sg and loved-2sg it
'Up until now you were saying it (the deer) was your BROTHER and you loved it.' (Axos, Cappadocia; M&K 192)

[10] a. **Ého éna koríč, k [$_{FOC}$ ekíno] <u>tópken</u>**
have- 1sg a daughter and she it said
'I have a daughter and SHE said it.' (Delmeso, Cappadocia; D 314)

b. **[$_{FOC}$ Iγo] <u>tun</u> án^{j}ksa**
I him undressed- 1sg
'*I* undressed him.'
(Plomari, Lesvos; K 493)

2.2.5 Topic versus focus

A topic alone never attracts a clitic to the preverbal position; see e.g. [11a]. Elements within ΣP, such as focus, modal particles and negation, follow all adjoined constituents such as preverbal topics, and they always attract the clitic to the preverbal position, as in [11b,c].

[11] a. **[$_{TOP}$ to semaγéften] ípan <u>mas</u> <u>ta</u> (topic)**
that got-3sg engaged told-3pl us it
'That he got engaged, they told us about it.'
(Axos, Cappadocia; M & K 85)

b. **[$_{TOP}$ to psófsen t aloγo] [$_{FOC}$ deré] <u>t</u> akúo (topic and focus)**
that died-3sg the horse now it hear
'That the horse died, I only heard it *now.*'
(Axos, Cappadocia; M & K 85)

c. **[$_{TOP}$ to na γazandɔ́so útsa pollá] dén <u>d</u> ómza (topic and negation)**
that NA win-1sg thus many not it hoped
'That I would win so many, I didn't hope for it.' (Axos, Cappadocia; M & K 85)

2.3 Postverbal clitics by prosodic inversion

When the specifier and head positions of CP and ΣP are empty, there is nothing for the clitic to cliticize to, so that prosodic inversion obligatorily moves the clitic after the first word, which, given the syntax, is the verb. The simplest case of postverbal clitics, illustrated in [12] by examples from four type A dialects, arises when the clitic is syntactically CP-initial.

[12] a. **Púlsa ta ta dévja.**
sold-1sg them the Devs
'I sold them to the Devs (spirits).' (Ulaghatsh, Cappadocia; D 378)

b. **Vreíšten do ké gelétzepsan.**
called-3sg her and talked-3pl
'He called her and they talked.' (Axos, Cappadocia; M & K 216)

c. *ðókaše* **d éna ftiró**
gave-3pl him a wing
'They gave him a wing' (Plomari, Lesvos; K 490)

d. **Ekaméмasto énas ftoxós γéros**
made us it a poor old man
'A poor old man made it for us.' (Demirdesi; Dang 176)

Because *ke* 'and' and other coordinating conjunctions are outside CP, a clitic which syntactically follows such a conjunction also undergoes prosodic inversion.[5] This is shown by the examples in [13]:

[13] a. **č ékani dun limnʲ**
and made-3sg him lake
'and turned him into a lake.' (Ajassos, Lesvos; K 485)

b. **Amé nžuloftoná ton t afendikón tu tsé** *ðn*žóxni **to, tsé léi tu ...**
but is jealous him the master his and send-3sg away him and tells him
'But his master is jealous of him and sends him away telling him...' (Astypalaia, Dodekanese; D 56)

A clitic need not be strictly CP-initial in order to undergo prosodic inversion as adjoined constituents are invisible to cliticization. Since topics are adjoined, a clitic that immediately follows an argument topic syntactically undergoes prosodic inversion in Type A dialects. [14] illustrates this.

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[5] The fact that coordinating conjunctions do not host clitics is the reason why we believe clitics require their host to be in the same CP, rather than an alternative requirement for a host within the same intonational phrase.

[14] **[TOP Tó líko | rótsan do ...**
the wolf asked-3pl him
'They asked the wolf...' (Axos, Cappadocia; M & K 182)

In addition to argument topics, adjunct topics (that is, adverbial modifiers) can adjoin to the ΣP, with prosodic inversion under exactly the same conditions:

[15] **[TOP símer to purnó] [TOP Pour na paén, | ekaméndes m éna lóo t éna spit**
today the morning before NA leave-3sg made-3sg them with one word his a house
'This morning, before he left, he made them a house with one word.' (Demirdesi; Dang 176)

In order to justify this analysis, it is important to be able to identify a preposed constituent as a topic. Topics serve certain discourse functions, and non-subject argument topics trigger clitic doubling, as in standard Modern Greek. Therefore, a clitic related to a topic will appear postverbally if there is no appropriate preverbal material within the same CP to host it. The predicted correlation is documented for a range of cases in the examples below. In all of these cases Modern Greek supports preverbal topics as well. First, subsectional anaphors are topics.

[16] **Énas patišahos íhe tría perjá. [TOP Ta rjó | díkisén da.**
A king had three sons the two married-3sg them
'A king had three sons. Two of them he married off.' (Ghurzono, Cappadocia; D 340)

A clitic immediately following a contrastive topic in the syntax, as in [17], appears postverbally:

[17] **ekínos píren ti vasilé tin gor ke [TOP to γambró] edosándon tin aδrefí t**
he took the king the daughter and the bridegroom gave-3pl him the sister his
'He married the king's daughter and they married (the would be) bridegroom (of the king's daughter) with his sister.' (Demirdesi; Dang 220)

A shift in narrative perspective can be introduced by a new topic. In that case too, if there is no other material between the topic and the clitic, the clitic will appear postverbally.

[18] **[TOP Imis | lʲpθíkamé dun, pírami mnʲa várka či píγmi či pjásamé dun**
we fell sorry him look-1pl a boat and went-1pl and caught-1pl him
'We felt sorry for him, we took a boat and went and saved him.' (Plomari, Lesvos; K 495)

3 Type C Dialects: clitics as word-level affixes

3.1 The distribution of clitics in C dialects

In type C systems, clitics directly precede the finite verb whose arguments they are. The properties of type C dialects are well known from Standard Greek. The pattern is illustrated in [19].

[19] a. **Tis to ipa.**
her-gen it-acc said-1sg
'I said it to her.'
b. **Tis to exo pi.**
her-gen it-acc have-1sg said
'I've said it to her.'

This pattern is widespread in mainland Greece; the examples in [20] illustrate that the Greek dialects spoken in Italy also conform to it.

[20] Salento(Profili 1999)

Mu svuddhìete e mitti mia bbelletza.
me-Gen discharge the nose one beauty

'My nose is clear, just like that.'

3.2 Deriving the distribution of clitics in C dialects

We assume that type C have the clausal structure [2], like type A dialects. They differ from type A dialects only in the properties of clitics. In type C dialects, clitics attach lexically to the left of the finite verb, we assume in virtue of lexically subcategorizing for a phonological word on their right. As part of the finite verb, they move with it to TNS°. Specifically, we propose that they are word-level affixes (not stem-level affixes, like the subject agreement morphemes of Greek), which attach in the morphology to words, forming larger words.

That clitics in standard Greek are lexical affixes has been argued by Joseph 1988 on the basis of phonological and morphological evidence. A syntactic argument is that they do not combine lexically with non-finite verbs. It is virtually a definitional property of agreement morphemes that they are affixed only to finite verbs. For example, subject agreement in all Greek dialects are restricted to finite verbs. If object clitics are lexical agreement morphemes, we can understand why they obey this restriction; otherwise it remains unmotivated.

A second argument that clitics are lexical affixes in type C dialects is that conjoined verbs cannot share a clitic. If clitics were syntactically adjoined to a V^0 head, then in principle they should be capable of being hosted by a conjoined V^0 head (as they in fact are in the dialects where they are X^0 categories, such as Pontic and Kozani, see below). Sentences like [21] are however ungrammatical in C dialects (in the intended interpretation).

[21]***to eliose ki ehase**
it melted and lost
'She melted it and lost it.'

4 Type B Dialects: Syntactic X° Clitics

4.1 Pontic clitics are always postverbal

In Pontic dialects, the placement of clitics is easily stated: clitics are always postverbal (Papadopoulos 1955, Oikonomidis 1958, Drettas 1997), even in environments where they are preverbal in the other dialects (see section 2.2):

[22] **tiδen k^hj leγne men (Negation)**
nothing not tell-3pl me
'They tell me nothing at all.' (Dr 632)

[23] a. **as akugna ta ek deftern (Mood particle)**
AS hear it from second time
'Let us hear it a second time.' (Dr 632)
b. **prin apoθán prép na δijse vesaét (Mood particle)**
before dies must NA give-3Sg you testament
'Before he dies, he must give you his testament.' (Dr 380)

[24] **ondas telion ato (Complementizer)**
when finish-1sg it
'when I finish it' (Trapezounda; P 224)

[25] **do les me (Wh-interrogative)**
what tell-2sg me
'What are you telling me?' (P 159)

[26] **ekino [$_{FOC}$ eγo] exer ato (Focus)**
that I know it
'Only I know that.' (Trapezounda; P 224)

4.2 Pontic clitics are not suffixes but X^0 enclitics

Clearly, Pontic clitics are *enclitic* rather than *proclitic*. Drettas (1997) claims that they are object agreement suffixes (see also Janse 1998). We think that Pontic clitics require a syntactic analysis. Our proposal is that they are phonologically enclitic (just as in type A dialects), but they are of category X° rather than of category X^{max}. Consequently, they are are head-adjoined to V°, rather than adjoined to the functional projection that the verb heads, and their syntax differ from that of Type A clitics accordingly. The X° status of Pontic clitics is supported by the following three arguments.

First, in the perfect, clitics in Pontic are attached to the infinitive, not to the auxiliary:

[27] **an ihame ndosne se, ihes maθine to maθema s**
if had-1pl beaten you had-2sg learned the lesson yours
'If we had beaten you, you would have learned your lesson.' (Trapezounda; P 174)

Since lexical agreement affixes (morphological argument clitics) go only on finite verbs (section 3.2), this shows that clitics are not agreement affixes.

Secondly, conjoined verbs may share a clitic, which then always appears to their right.

[28] a. **esegen to vutoron s son furnin k elisen k ehasen a.**
put-3sg the butter in the oven and melted and lost it
'She put the butter in the oven and melted it and lost it.' (Adissa Argiroupoleos; P200)

b. **ekomboθen k exegen k eθeken aton sima t**
was duped and look out and put her near him
'He was duped and took her out and put her near him.' (Trapezounda; P 22)

This sharply contrasts with standard Greek, where the clitic is obligatorily repeated in such cases. The behavior of clitics in conjunction thus confirms that they are lexical in standard Greek and syntactic in Pontic.

The third argument comes from phonology, which shows that clitics are not part of the same lexical word as their hosts (though they are surely part of the samae postlexical word). The argument is based on a stress contrast between simple long words and words with attached clitics. In simple long words, when the lexical stress is before the third syllable, rhythmic alternating stresses are asigned to the word (e.g. *éklapsa, éklapsáne, ekimúmunéstine}*. However, no such additional stresses appear in clitic sequences, as explicitly stated by Papadopoulos (1955:32). If clitics were lexical suffixes, this difference would be incomprehensible.

In support of his claim that Pontic clitics are affixes, Drettas 1997 argues that they combine with their hosts in phonologically idiosyncratic ways. Drettas' principal argument is that third person object forms such as *fáisen, fázaton* cannot be derived by phonological rules.[6] In order to assess this argument, consider the paradigms of *fazo* 'feed' *pleko* 'knit', *siro* 'drag', and *vrexo* 'rain' in Pontic.

[29]

		/faz-/	/plek-/	/sir-/	/vrex-/
1.sg.	/-o/	*fázo*	*pléko*	*síro*	*vréxo*
2.sg.	/-is/	*fáis*	*pléks*	*sírts*	*vréis*
3.sg.	/-i/	*fáz*	*plék*	*sír*	*vrés*
1.pl.	/-omen/	*fázomen*	*plékomen*	*síromen*	*vréxomen*
2.pl.	/-eten/	*fázeten*	*pléketen*	*síreten*	*vréseten*
3.pl.	/-ne/	*fázne*	*plékne*	*sírne*	*vréxne*

[6] As Drettas (1997:100) puts it: "On voit que ces phénomènes, obligatoires dans le cadre d'un paradigme donné (en l' occurrence, la conjugation d'un verbe), ne reproduisent pas forcément des contraintes phonologiques et que, par conséquant, on ne peut rendre compte au moyen d'une partie "règles phonologiques" de la langue; nous avons affaire à des faits morphologiques qui seront présentés avec les unités concernées (par example, l' article, l' objet verbal, etc.)." Drettas also advances a weaker argument, based on the claim that there is no phonological explanation why *faz* 'feeds' plus *-sen* 'you' is realized *fáisen*. He claims that avoidance of the prohibited sequence **-zs-* can't be the reason because one could achieve that by other means, for example, by inserting *e* into the cluster. We think that (his argument is fallacious for two reasons. A process is not unmotivated just because *another* process might have achieved the same end. On the contrary, there are almost always multiple ways of avoiding constraint violations. For example, prohibited consonant clusters can be avoided by epenthesis, deletion, lenition, assimilation, or metathesis. A language may use several of these devices under different conditions, depending on the ranking of its other constraints. Secondly, the argument presupposes that the motivation *fáisen* is the avoidance of the sequence **-zs-*. But, as discussed in the text, the process has a different etiology.

We propose to show that regular phonological processes of Pontic account for these inflectional patterns, and that the same regular phonological processes apply to clitic combinations as well.

The alternation of *x* and š in *vréxo, vréxomen* versus *vrẽšeten, vréxne* is due to an automatic palatalization process *x* —> š which applies before a front vowel: a sequence **xi* is impossible in Pontic. The same palatalization process also accounts for 3.Sg. *vrẽš.* Apocope of final *i* is a productive phonological process in Pontic. It is motivated by such contrasts as /podári/ *podár* 'foot' versus /podári-mu/ *podárim* 'my foot', with retention of *-i* in the latter form because it is not final. The rule seems to be automatic, in that no phonological phrase or phonological word can end in *-i*. Thus, we posit the third person ending as /-i/, which triggers palatalization in /vréx-i/ —> *vrẽši,* and is obligatorily apocopated.

From this much it is clear that the derivation is as follows.

[30]	1 Sg.	/fãz-o/	—> *fázosen*
	2Sg.	/fãz-is/	—> *fáis*
	3Sg.	/fãz-i/	—> *fáz*
	1Sg.2Sg.	/fãz-o-sen/	—> *fázosen*
	1Sg.3Sg.	/fãz-o-aton/	—> *fázaton*
	2Sg.3Sg.	/fãz-is-aton/	—> *fáisaton*
	3Sg.2Sg.	/fãz-i-sen/	—> *fáisen*
	3Sg.3Sg.	/fãz-i-aton/	—> *fázaton*

The indicated phonological derivations require only independently motivated automatic processes of Pontic. First, the realization of 2Sg. /fáz-is/ as *fáis,* and 3Sg.+2Sg. /faz-i-sen/ as *faisen* is due to a regular process of Pontic that Papadopoulos 1955:13,26 calls "anameiosis". Without exception, the sequences /-Vsis-/ and /-Vzis-/ are realized as *-Vis-* in Pontic. This holds even for underived lexical items, such as the names *Anastasis —>Anastais, kurnazis—> kurnais, Karagiozis —>Karagöis,* and similarly *Thanais, Thodois, Kondofois* etc. Since /x/ and /s/ merge before /i/ by palatalization, the process predictably applies also to /-xis/ sequences, e.g. /vréx-is/ *vréis* (cf. *vréxo).* Of course, it is more than likely that "anameiosis" is a complex process decomposable into a sequence of elementary steps. A plausible derivation is /fãz-is/—> *fãzis—>fãžs —>fáis* (Malikouti-Drachman and Drachman 1977, Fatima Eloeva, p.c.).[7]

As for 3Sg.+3Sg. /faz-i-aton/—>*fázaton,* this is derived by vowel contraction (synalepha) /i,e+a/—> ä, /ie+o/ —>ö. This is also an automatic postlexical phonological process in Pontic, which applies also across word boundaries, as Papadopoulos (1955:11) makes clear. Finally, 1Sg.+3Sg. /fazo-aton/ —> *fázaton* is a straightforward case of elision of a vowel before another vowel, also a process which applies regularly in Pontic, within and across words.[8]

We conclude that verb + clitic combinations are derived by phonological processes which apply within words and across word boundaries, and which are exceptionless, as far as the evidence shows. If so, the phonology of Pontic clitics is consistent with X° cliticization, and Drettas' argument for their affixal status does not go through.

[7]Perhaps the haplological avoidance of ...C_1 VC_1... sequences is a contributing factor. Drettas 105 cites evidence that such a haplology process applies productively across word boundaries, e.g. *avúta la peðia —>avúta peðía.* We emphasize that our argument depends on the fact that /-sis/ and /-zis/ sequences are systematically reduced to *-is* in Pontic, not on any particular theoretical analysis of that process.

[8]E.g., *ámonto eksérts píson —> ámont eksérts píson* (Drettas 78103).

5 The diachronic perspective

5.1 Lexicalization

The generalization that syntactic combinations may become grammaticalized (or reanalyzed) as lexical, but not conversely, implies that the three dialects are historically related as follows:

[31] System A $\xrightarrow[X^{max} \rightarrow X^{\circ}]{}$ System B $\xrightarrow[X^{\circ} \rightarrow \text{Affix}]{}$ System C

The system of the A-type dialects must be the most archaic of the three. The dialectological picture itself suggests that the A-dialects are archaic because of their peripheral location. More compellingly, the fact that they occur as enclaves in a number of isolated areas within B- and C-dialects, as relics of an earlier wider distribution of the A type.[9] But perhaps the most telling fact is that the syntax of A-dialects is closest to the medieval Greek system, as sketched out in Mackridge (1993). (We demonstrate this in the full version of this paper.)

The original X clitics, then, have become X° in Pontic, and affixes in Western Greek, in conformity with known tendencies of change.

Now we are in a position to concretize the often raised question whether syntactic change lakes place catastrophically or by small stepwise increments. In the case at hand, we can ask whether Western Greek developed directly from a type A system where clitics are X^{max} categories, or whether it passed through an intermediate Pontic-type stage of syntactic X° cliticization.

If both Western Greek and Pontic were directly descended from the common ancestral Type A system with X^{max} clitics, we would have no explanation for why one of them developed proclitics and the other enclitics. It is more likely that they developed from systems with X^{max} clitics which already differed syntactically, in such a way that "Proto-Pontic" had predominantly postverbal clitics (which were lexicalized as X° enclitics in modern Pontic), and "proto-Western Greek" had predominantly preverbal clitics (which developed into the type A and type C proclitics). In the following sections we attempt to trace these respective paths of development.

5.2 Pontic

A dialect with the hypothesized "proto-Pontic" properties is already implicit in our historical analysis. It is simply koine and early medieval Greek prior to the emergence of ΣP. This dialect would have had the phrase structure in [32].

[32] Proto-Pontic:

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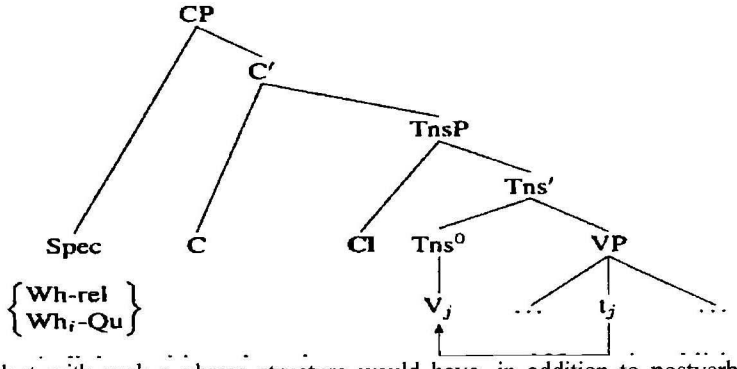
[9]This is not to exclude the possibility that some such enclaves might have arisen by later contact or migrations as well. One likely case of migration is the dialect of Amisos, which has mixed A/B properties. It is known that Amisos, in the Pontic (type B) area, had an influx of refugees from Cappadocian Caesarea (who would have spoken a type A dialect) after the fall of Constantinople in 1453 (Xristopoulos 1974:179a).



A dialect with such a phrase structure would have, in addition to postverbal clitic placement in declarative main clauses, certain other characteristics. Whenever the finite verb does not raise to TNS, and raising to C is blocked by a lexical Comp, subordinate clauses should be verb-final. Germanic-type "double complementizers" occupying Spec-CP and C (such as OE/ME *when that)* might occur. Multiple preverbal negatives, positioned in situ with the verb in clause-final position, would be expected, as opposed to other dialects, where emphatic negatives move to [Spec,ΣP].

At least some of these characteristics, including postverbal clitics and multiple preposed negation, are attested already in medieval documents from the Pontic area. In deeds to the monastery of Vazelon (south of Trebizond), we find:

[33] Medieval Pontic (Ouspensky and Bénéchevitch 1927)

a. **ton de tópon edôkamén soi eis toùs eksẽs kaì diēnekeĩs xrónous**
the Prt place we gave you in the following and everlasting years
'we have given you this land in perpetuity' (O & B, deed dated 1260)

b. **hoson diaphérei mou**
how much belongs me-Dat
'as much as is my share' *(ibid.,* dated 1435)

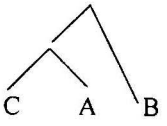
c. **tinán típote ou xreostõ**
nobody nothing not owe-1Sg
'I don't owe anyone anything' *(ibid.,* dated 1291)

In fact, these latter characteristics mark Pontic syntax even today, suggesting that it may still retain a structure with no ΣP.

In a system such as [32] where V raises to C in main clauses, the majority of clitics will end up in postverbal position. In such dialects, lexicalization from X^{max} to X° would naturally give rise to enclitics, as in Pontic.

These considerations suggest that Pontic dialects diverged at an early stage of Medieval Greek, and that the other Greek dialects underwent a period of further common development (which included the rise of ΣP) before in turn splitting off into the ancestors of the Cappadocian dialects and the Western Greek dialects.

[34]



The implication that the Pontic {type B} dialects split off from the rest of Greek quite early, and that type A and type C dialects underwent a period of common development is consistent with Dawkins' (1940) suggestion that the Pontic dialects were separated from the rest of Greek as early as the 11th century by the Seljuk conquests in Asia Minor, whereas the Cappadocians were cut off several centuries later by the Ottomans.

5.3 Kozani: the missing link

As the immediate antecedent of standard/Western Greek we posit a system B', where clitics already precede the verb, but still retain their syntactic X° status, like the Pontic clitics. In at least one dialect, system B' survives to this day.

For two modern dialects, Kontosopoulos (1994:53,101) reports that clitics are placed between the auxiliary and the participle: Kozani (Macedonia) and Chios (off the coast of Asia Minor).

[35] a. **îxan ts vaps (Kozani)** **tus îxan vápsi (Standard Greek)**
had-3Pl them painted
'they had painted them'

b. **îxen me piási (Chios)** **me îxe piási (Standard Greek)**
has-3Sg me caught
'he has caught me'

We hypothesized that these dialects instantiate our predicted "missing link" between types A and B, that is, X° proclitics. This makes several syntactic and phonological predictions. In order to check these predictions, Kiparsky et al. (2001) visited Kozani to interview a speaker of the dialect. Their findings confirmed our expectations.

Kiparsky et al. (2001) found that in the Kozani dialect clitics may be placed either before the auxiliary, or between it and the main verb. This does not seem to be an alternation between standard Greek and the dialect, but a genuine option within the dialect itself.

Our first syntactic prediction is that conjoined verbs may share an X° clitic, as in Pontic. Specifically, whereas Pontic's shared enclitics always follows the verb conjunction (see [28]), in Kozani we expected that its shared proclitics would *precede* it. This is what we find.

[36] a. **n îda ke xerétsa**
her saw-1Sg and greeted-1Sg
'I saw her and greeted (her)'

b.***îda ke t xerétsa**
saw-1Sg and her greeted-1Sg
'I saw and greeted her'

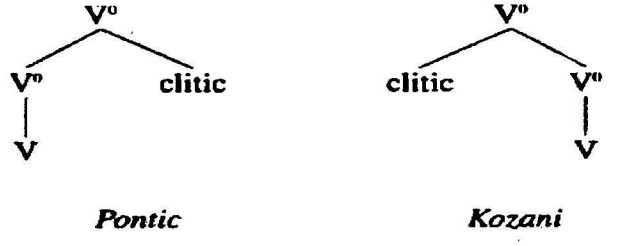
c. **n ída ke t xerétsa**
her saw-1Sg and her greeted-1Sg
'I saw her and greeted her'

In most cases the deletion (though ungrammatical in standard Greek) is preferred.

[37] a. **íxan ts vaps ki ftiaks**
had-3Pl them painted and fixed
'they had painted and fixed them' (preferred)
b. **íxan ts vaps ki ts ftiaks**
had-3Pl them painted and them fixed
'they had painted them and fixed them'

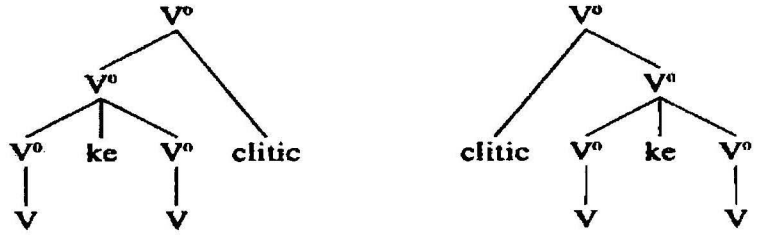
Thus, Kozani constitutes the mirror image of Pontic:

[38]



Pontic *Kozani*

[39]



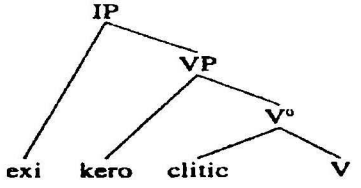
Pontic *Kozani*

A second syntactic consequence is that VP-adverbs may intervene between the auxiliary and the clitic, but nothing may intervene between the clitic and the following nonfinite verb.

[40] a. **íxan keró ts vaps**
had-3Pl already them painted
'they had already painted them'
b.*__íxan ts keró vaps__
had-3Pl them already painted
'they had already painted them'

This follows on the plausible assumption that VP-adverbs are at the left edge of VP, and that the VP is the complement of the auxiliary.

[41]



Kiparsky et al. also give two phonological arguments. One comes from stress. In verb forms which bear lexical stress before the antepenult, a second, equally prominent stress is assigned to the penult, in order to avoid a stress lapse, as in [42a]. No such stress is assigned in cases like [42b].

[42] a. **éfagámi**
ate-1Pl
'we ate'
b. **ìxame to vaps** ***(not* *ìxamé to vaps)**
had-1Pl it painted
'we had painted it'

The reason is that in [42b], the sequence *ixame to* is not a word either lexically or postlexically, according to our analysis. Therefore it is cannot be assigned word stress at any level of the phonology.

The second phonological argument comes from a general process voicing assimilation of [s] to [z] within lexical words.[10] Voicing assimilation does not apply across a clitic boundary, which shows that clitics and their hosts do not form a lexical word.

[43] /exis mas xerétisa/—> [ex^{i}s mas xerétsa] 'you've greeted us'

The Kozani dialect also has *enclitic* pronouns, such as possessive clitics. These seem to have the status of lexical suffixes, just as in standard Greek, as shown by both voicing assimilation and stress.

[44] /ðikos mas/ —> [θkozmas] 'our own'

Thus the hypothesized B' system is confirmed. It remains to be seen how widespread it is, and in particular whether the Xios dialect is similar to that of Kozani.

More importantly, our prediction that the B' system is the immediate antecedent of the standard/Western Greek B system remains to be verified by historical data from earlier stages of Greek.

5.4 Summary of the historical development

In the full version of this paper we attempt to reconstruct the evolution from the two medieval systems back to the Homeric language. Our proposal is based on the reinterpretation of Taylor

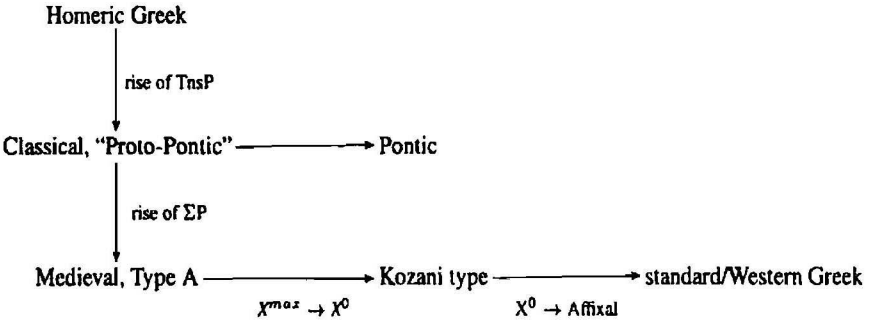
[10]Across word boundary, [s] assimilates to [z] only before the voiced fricalives [β] **and** [δ].

(1994) proposed by Kiparsky (1996). In Homeric Greek, we suppose that no IP (whether TNSP or ΣP) is syntactically projected. Consequently, X^{max} clitics at that stage are adjoined to CP, where they undergo prosodic inversion if necessary to satisfy their enclisis requirement. This is to say that Homeric clitics are second position (Wackernagel) clitics.

In later classical Greek, a syntactic IP (specifically a TNSP, we assume) is introduced. Clitics (still of the X^{max} type) adjoin to this lower projection, while finite verbs may move to C. This is the "proto-Pontic" system, in which clitics are predominantly postverbal. Pontic develops from it by the first stage of lexicalization of X^{max} clitics, by which they became X^0 clitics, with enclitic status.

The dialects from which Western Greek arose developed a ΣP projection, while still at the X^{max} stage. This is the stage seen in medieval Greek, which persists in the modern Type A dialects. From this starting point, lexicalization of X^{max} clitics resulted in a Type B' (such as still attested in Kozani). The second stage of lexicalization, by which clitics became affixes, then resulted in the Type C systems of standard and Western Greek. This scenario is summarized in the following syntactic stemma of Greek dialects.

[45]



Implicit in this schema is the possibility that the clitics might become (or have become) affixal in some dialect of Pontic. Such an innovative dialect of Pontic would have the following characteristics:

[46] Hypothetical C dialect:

a. Clitics are postverbal (as in Pontic): *exi ta* 'he has them'
b. Clitics attach to finite verbs only (unlike Pontic): *exi to kani* 'he has done it'
c. Clitics must be repeated in each conjoined verb (unlike Pontic): **na fero ke trog' a* 'I' ll take and eat it'
d. Verb+clitic combinations are stressed like lexical words (unlike Pontic): **ésiren atona* 'he threw him'
e. Verb+clitic combinations may show lexical idiosyncrasies (unlike Pontic).

5.5 Implications

The dialect evidence shows that distinction between affixal and X^0 clitics is minimal and irreducible. On the one hand, we found no intermediate systems to support Janse's claim that the distinction between clitics and affixes is a gradient one. On the other hand, Halpern

and Fontana's two-way classification of clitics, which identifies X^0 clitics with affixes, is not fine-grained enough, and should be replaced by a ternary one. Standard Greek clitics are lexical (as Joseph proposed), but Pontic clitics are syntactic X^0 (contra Drettas 1997). Kozani in particular provides virtually a minimal pair to the standard system.

One the historical side, our findings suggest that change is neither catastrophic (as Lightfoot claims) nor gradient (as was suggested in some early work on grammaticalization). Rather, change proceeds in *minimal discrete increments*. Moreover, it is striking that none of the changes that our theory posit leads to abrupt discontinuities in the output. Each step in the reanalysis or grammaticalization process modifies the language in ways that are not salient to language learners (not to speak of dialectologists).

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