Possessive affixes and complement composition

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Abstract

A long-standing issue in the literature on clitics, namely, whether they can be best analysed as affixes or syntactically autonomous words (postlexical clitics), is here addressed with respect to the Modern Greek 'weak form' possessive pronoun. It is argued that distributional and phonological evidence strongly support an affixal analysis. Apparent difficulties for extending to possessive affixes an HPSG account that has been previously employed for pronominal affixation in Romance VP are overcome, and a *composition* approach is proposed – one which takes a categorial grammar approach to adjectives and treats them as heads in NP, and does not require flat NP structures that lack independent motivation in Modern Greek.

1 Introduction

A long-standing problem in the literature on clitics has been the issue of whether they can be best analysed as affixes or as syntactically autonomous words. According to one proposal, cf. e.g. Anderson (1992), all 'clitics' are phrasal affixes and should not be assigned the status of nodes in syntactic markers at all. Anderson discusses data from a number of languages and shows that there are very substantial similarities between the principles governing the placement of 'clitics' and those for the placement of affixes. An affixal approach to clitics will permit such generalizations to be expressed, and, moreover, dispense with, in his view, *ad hoc* syntactic categories such as *clitic* or *particle*. According to an alternative view, cf. e.g. Zwicky and Pullum (1983) and for a recent discussion Halpern (1995), it is essential to distinguish between (a) affixal clitics that are lexically attached, and (b) postlexical clitics (PLC) that have the syntax of phrases but prosodically are part of a *Clitic Group* – a prosodic category that is bigger than the *phonological word* and smaller than the *phonological phrase*, and which consists of a phonological word (host) and one or more clitics, cf. Nespor and Vogel (1986). If the view represented by Anderson is right, then what remains to be done is to work out the specifics for each particular family of affixes. Otherwise, the issue of affix versus

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PLC status is a burning one. I start therefore by considering this issue with respect to the Modern Greek 'weak form' possessive pronoun, henceforth, MG POSS (Sections 2 and 3). Given that I conclude that MG POSS *is* an affix, I do provide a detailed account of its morphosyntax. Thus, in Section 4 I show how a composition approach, in the spirit of previous work on pronominal affixation couched in the framework of Head-driven Phrase Structure Grammar (HPSG), can be extended to MG POSS, despite apparent empirical and conceptual difficulties for extending to NP an approach originally intended for the placement of pronominal affixes in Romance VP.

2 Basic data and previous approaches

By way of introduction, I mention a couple of essential and undisputed facts about MG POSS. First, MG POSS is an enclitic or suffix, as can be demonstrated by evidence from stress. It has often been observed that in MG lexical stress is allowed on any one of the last three syllables of a word but no further to the left (Stress Well-Formedness Condition (SWFC)). If a potential host for POSS is stressed on the antepenultimate, as e.g. kalíteros ('best'), once POSS is attached, a stress is added two syllables to the right, as in kaliteros in (1), to satisfy SWFC; the additional stress is in fact perceived as the main stress of the word, whereas the original lexical stress weakens, cf. Arvaniti (1992).

(1) o kalíterós MU filos
the best POSS.1sg friend
'my best friend'

Second, POSS exhibits a 'floating' distribution: it can attach to a specifier (2a), any prenominal adjective (2b-c), or the noun (2d). However, multiple possessive marking, as e.g. in (2e) is not allowed.

(2) a. ola TUS ta-prosfata epistimonika arthra
all POSS.3pl the-recent scientific papers
'all their recent scientific papers'
b. ola ta-prosfata TUS epistimonika arthra
c. ola ta-prosfata epistimonika TUS arthra
d. ola ta-prosfata epistimonika arthra TUS
e. *ola TUS ta-prosfata epistimonika arthra TUS

Previous approaches treat MG POSS as an affix. Sadock (1991) proposes that it is a *penultimate word suffix.* Nonetheless, as pointed out by Halpern (1995), this proposal cannot account for the patterns illustrated in (2a&b). In a similar spirit, Stavrou and Horrocks (1990) argue that MG POSS is a sister of N^0 that in D-structure attaches to N^0 or Adj^0 by means of 'a morphological rule that can apply at the syntactic level', and which yields lexical (X^0) categories. However, unlike Sadock's autolexical syntax approach, Stavrou and Horrocks make no explicit proposal concerning the interface between syntax and morphology. To the best of my knowledge, no PLC analysis of MG POSS has been previously proposed. However, a prosodic approach to the Ancient Greek possessive enclitic (AG POSS) which assigns it PLC status is provided by Taylor (1996). I summarize this proposal and consider whether it can be extended to MG.

The following data (from texts dating back to 0-300 AD) demonstrate that AG POSS can appear in two positions: (a) the NP-initial position, henceforth, **1W** (first-word-position), as shown in (3a&b), and (b) in second-position, in fact, the position after the first word (position **2W** a la Halpern (1995)), as shown in (3c&d).

(3) a. kai peisthēsontai [$_{NP}$ SOU tais-rhēmasin]
and they-will-trust [$_{NP}$ POSS.2sg the-D(AT) words-D(AT)]
'and they will trust your words'

b. ean [$_{NP}$ MOU tēn-entolēn] phulaksēi
if [$_{NP}$ POSS.1sg the-A(CC) commandment-A(CC)] he-keeps
'if he keeps my commandment'

c. aph' hēs [$_{V}$ elalēsas] autois [$_{NP}$ tas-entolas MOU]
from when you-told them-D [$_{NP}$ the-A commandments-A POSS.1sg]
'from the time when you told them my commandments'

d. metelabon hoti bareōs douleuete [$_{NP}$ tēn-kurian HĒMŌN mēteran]
I-understand that grudgingly you-serve [$_{NP}$ the-A lady-A POSS.1pl mother-A]
'I understand that you serve our lady mother grudgingly'

Following a tradition which assumes that **1W** and **2W** are related and derives the latter from the former in a 'post-syntactic' component of the grammar, Taylor provides a prosodic account of the **1W/2W** alternation: AG POSS is taken to be a *simple clitic* in the sense of Zwicky (1985), which, however, is sensitive to phonological phrase (Φ) boundaries. As shown in (4a-b) below, AG POSS is syntactically left-adjoined to NP and prosodically attaches to a linearly preceding host outside its domain, due to its enclitic status, thus giving rise to syntax-phonology mismatches of the type discussed in Klavans (1985). In case a non-optional Φ boundary ('#') precedes the clitic, i.e. one that cannot be eliminated by Φ *restructuring* in the sense of Nespor and Vogel (1986), as e.g. in case of (4c-d), *Prosodic Inversion* is triggered (cf. Halpern (1995), Taylor (1996)), which essentially amounts to allowing the linear order of host and clitic inside the *Clitic Group* to be the reverse of their linear order in the syntax. ('=' marks prosodic attachment.)

(4) a. [$_{VP}$ [$_{V}$ peisthēsontai] [$_{NP}$ [$_{CL}$ SOU] [$_{NP}$ tais-rhēmasin]]]

b. ($_{\Phi}$ peisthēsontai =SOU tais-rhēmasin)

c. [$_{VP}$ [$_{V}$ elalēsas] [$_{NP}$ autois] [$_{NP}$ [$_{CL}$ MOU] [$_{NP}$ tas-entolas]]]

d. (($_{\Phi}$ elalēsas) ($_{\Phi}$ autois)# ($_{\Phi}$ tas-entolas =MOU))

A crucial difference between AG and MG POSS is that the latter never attaches to a host outside its syntactic domain: (3a&b) are not available options in MG. To start with, this is a distributional pattern that pertains to affixes but not PLCs, as is argued at length in Halpern (1995). In addition, unless it could be shown that Φ boundaries are obligatory in MG in all contexts where Taylor takes them to be optional for AG, this distribution requires one to assume that the syntactic domain of MG POSS is never a maximal projection (NP), but rather the N$'$.[1] This would nonetheless go contrary to most of the literature which exclusively allows *maximal* categories to constitute the syntactic domain or scope of clitics. Let us for the moment ignore these two initial difficulties and assume that MG POSS is

[1] Besides, unless we take the N$'$ as the domain, we cannot account for examples such as (2c) which are clearly not instances of second-position in NP, but rather instances of second-position (**2W**) in N$'$.

syntactically left-adjoined to N′ and prosodically attaches to a linearly preceding host, due to its enclitic status. Such a proposal will account for examples (2a-c), which conform to the pattern [X [$_{N'}$ POSS [$_{N'}$ Y Z]]], i.e. they contain a clitic in N′-initial position.[2] Moreover, the requirement for left as opposed to right adjunction will allow us to account for an additional fact, illustrated in (5), namely, that postnominal adjectives cannot host POSS:

(5) a. ena arthro TU prosfato
one paper POSS.3.masc/neut.sg recent ('a recent paper of his')

b. *ena arthro prosfato TU

To account for **2W**, e.g. (2d), which under Taylor's proposal would be derived from a syntactic structure [$_{N'}$ epistimonika [$_{N'}$ TUS [$_{N'}$ arthra]]] by applying prosodic inversion, we must further assume that words can constitute (optional) phonological boundaries in MG NP – an assumption that has not previously been made. It can perhaps be argued that there are alternative ways for accounting for **1W/2W** alternations, e.g. by assuming that (2a-d) are all instances of discontinuous constituency, where a possessive clitic syntactically combines with an NP or N′, is permitted to interleave with its daughters, and appears after the leftmost daughter in NP or N′ – a specifier, adjective, or the noun. In the next section, I argue that the PLC approach to MG POSS, no matter whether prosodic or syntactic, will encounter a number of distributional problems.

3 Arguing for an affixal approach

A first problem for an analysis of MG POSS as a postlexical clitic is the existence of unexpected gaps in **1W** and **2W**. Along with the grammatical (6a), a prosodic or syntactic analysis along the lines of the one sketched above will allow for the ill-formed (6b), with MG POSS in **1W**, following the complement of a preceding adjective. (6b) cannot be excluded by appealing to an obligatory phonological phrase boundary to the left of tu since it is generally agreed that material inside the NP that precedes the noun plus the noun itself form a single phonological phrase.[3]

(6) a. ta [$_{AP}$ gnosta [se olus]] kolpa TU
the familiar to everybody tricks POSS.3.m/n.sg
('his tricks familiar to everybody')

b. *ta [$_{AP}$ gnosta [se olus]] TU kolpa

An approach a la Taylor would also permit the ill-formed (7b) to be derived by prosodic inversion from (7a), where POSS is syntactically left-adjoined to the N′ whose first word is the adverbial entelos. Though a syntactic PLC approach could perhaps rule out (7b) by constraining MG POSS to exclusively interleave with

[2] In (2a), ola is taken to be the specifier, whereas ta is part of the N. This is consistent with the fact that the MG definite article does not shift the type of the phrase it occurs in from N′ to NP, rather it is a proclitic/prefix that can multiply occur in the same NP, as in (15) below.

[3] Neither could it be argued that MG POSS for some reason requires a strictly lexical host and resists a preceding phrase: not only does this assumption violate the spirit of the PLC approach, but it is also empirically refuted by the grammaticality of, say, (ta) [$_{AP}$ para poli gnosta] TU kolpa (lit.: the very much familiar POSS.3.masc.sg tricks; 'his very familiar tricks), where tu is again preceded by an AP which this time consists of an adjective and a pre-adjectival degree modifier.

the daughters of an N′/NP, rather than the daughters of an AP embedded inside that N′/NP, this latter type of approach would fail to allow for the grammatical (7c). In (7c), tu is again embedded inside an AP, but this time it is attached to the adjective, whereas the modifier occurs in post-head position. The contrast between (7b&c) shows that APs cannot be homogeneously treated as syntactic boundaries for the purposes of clitic placement.

(7) a. orismenes TU [$_{N'}$ [$_{AP}$ entelos katestramenes] tixografies]
certain POSS.3.m/n.sg totally ruined frescos ('some of its totally ruined frescos')

b. *orismenes [$_{AP}$ entelos TU katestramenes] tixografies

c. [$_{AP}$ to apagorevmeno TU dia nomu] vivlio
the forbidden POSS.3m.sg by law book ('his forbidden by law book')

The distribution patterns in (6) and (7) (as well as the example in footnote (3)) can be straightforwardly accounted for if MG POSS is viewed as part of the morphology of nominal categories (determiners e.g. orismenes, adjectives e.g. apagorevmeno, and nouns e.g. kolpa). In terms of Miller (1992) and Halpern (1995), this amounts to treating POSS as 'extended' inflection that exhibits *head percolation*, that is, if it is to be located inside an AP daughter of N′, it will be attached to the adjective head, if it is to be located inside the specifier, it will be attached to its determiner head, and so on; therefore, it cannot be found in the right or left edge of a daughter of N′/NP, as in the ungrammatical (6b) and (7b), respectively.[4]

A second problem for the PLC approach is the fixed order of POSS and NP-internal demonstratives – the latter must always follow the former inside NP, as shown in (8). It is commonly assumed that NP-internal demonstratives in MG have the syntactic status of adjectives. Given this, the PLC approach would predict that both (8a&b) should be grammatical, in either case tu being syntactically left-adjoined to an N′, and prosodically attached to a preceding adjective. An affixal approach on the other hand can circumvent this problem. Affixation is a lexical matter, therefore, there can be exceptions in a given morphological paradigm. NP-internal demonstratives can be treated as such an exception in that, unlike other adjectives, they do not participate in the morphological process of possessive affixation. Further such exceptions will be provided below.

(8) a. ta-kenuria TU afta vivlia
the-new POSS.3sg these books ('these new books of his')

b. *ta-kenuria afta TU vivlia
the-new these POSS.3sg books

A third problem for a PLC analysis is a type of obligatory 'possessive doubling' that mysteriously applies only in case of first and second person, but not in third. As illustrated in (9) below, a first person singular phrasal possessive can occur in an NP where a possessive affix is also present, but is not licit otherwise. Note also

[4]A potential counterexample for the 'head percolation' generalization is the fact that POSS cannot intervene between an adjective and its phrasal complement, e.g. the string *ta gnosta TU se olous kolpa is ill-formed – compare with the grammatical (6a). Notice, however, that this example would also be a problem for the prosodic inversion approach discussed above, and, moreover, for a syntactic approach assuming discontinuous constituency and which would account for the grammatical (7c). Both types of account would allow for the 'surface' ordering [Y [$_{AP}$ Adj POSS XP] Z ...]. The composition-based proposal in Section 4 provides a tentative solution to this problem by assigning possessive morphology to adjectives which do not subcategorize for a thematic complement.

that despite the fact that phrasal possessives in MG are NPs in genitive case, when in first or second person singular and plural, they occur in accusative, since the first and second person paradigm is defective and no genitive forms are available synchronically. It is unclear how a PLC account can relate the adjoined-to-N′ POSS with a phrasal possessive that presumably occupies the noun's complement position, and in fact, in such a way that only first and second person elements are affected. In Section 4, I propose a way for accounting for such idiosyncratic doubling under an affixal approach to POSS based on composition.

(9) a. *to vivlio emena
the book mine-ACC (putatively: 'my book')

b. to vivlio MU (emena)
the book POSS.1sg mine-ACC ('my book')

Consider now some phonological evidence in favour of an affixal approach. In MG, two phonological rules can be identified whose domain of application is the word, where 'word' is to be interpreted either as a plain inflectional form, or as an inflectional form plus possessive suffix combination. First, SWFC (see above) affects lexical stress in an entirely predictable way (a) in case of inflectional affixation, where the main stress moves one syllable to the right, as e.g. in máthima (lesson-NOM/ACC.SG) → mathímatos (lesson-GEN.SG), and (b) in what has been traditionally referred to as *cliticization*, here analysed as 'extended' or phrasal affixation. Though in (a) and (b) lexical stress is affected in two different ways – recall that in case of possessive affixation a new stress (main stress) is added two syllables to the right of the original lexical stress, whereas the latter weakens – this difference can be accommodated in the account proposed below which identifies two types of morphology for a given nominal word: *plain morphology*, which corresponds to inflected forms, and *clitic morphology*, which corresponds to inflected forms that also bear a possessive suffix, 'clitic' bearing no theoretical significance in this piece of terminology. The second rule is the voicing of a stop when it is preceded by a nasal. Stop Voicing (SV) applies inside a plain morphology word, as e.g. in case of *αντίθεση* ('antithesis') → [andithesi], and, moreover, inside a clitic morphology word, as e.g. in *καθηγητών του* (professors POSS-3.masc.sg; 'his professors') → [kathigiton du], but not across words.

A further piece of evidence in favour of an affixal analysis is the existence of certain exceptions or 'arbitrary gaps' in the set of 'host'-POSS combinations (cf. Zwicky and Pullum (1983)). For example, though POSS can occur inside indefinite NPs, as has been previously demonstrated in (5a), particular members of the determiner class appear to resist a possessive suffix. My consultants agree that there is a contrast between (10a&b), despite that fact that merikes and orismenes do not appear to have different properties otherwise, e.g. they can both occur in the partitive construction (merikes/orismenes apo tis fotografies TU; 'some/certain of his pictures'), and neither of the two is licit inside definite NPs, unlike e.g. the cardinals (i-tris/*i-merikes/*i-orismenes fotografies; 'the three/*the-some/*the-certain pictures').[5]

[5]POSS can function as 'object of comparison' for a number of comparative adjectives, which are not discussed here, due to space limitations. There too, the potential for possessive affixation is lexically determined given arbitrary contrasts such as megaliteros ap'afton / megaliteros TU ('older than him' / 'older POSS.3.masc.sg'), versus spudeoteros ap'afton / *spudeoteros TU (more

(10) a. ??merikes TU fotografies
some POSS.3.m/n.sg pictures (putatively: 'some of his pictures')

b. orismenes TU fotografies
certain POSS.3.m/n.sg pictures ('certain of his pictures')

Finally, a few words about the coordination diagnostic are in order. Potential for wide scope over a coordination of hosts is taken to support a PLC approach, and vice versa, cf. Miller (1992). E.g. the ill-formedness of *Pierre les voit et écoute, as opposed to Pierre les voit et les écoute ('P. sees them and hears them') argues in favour of affix status for French VP 'clitics' such as les. Unfortunately, the same test cannot provide conclusive evidence in case of MG POSS, since the latter, unlike VP pronominal affixes, is not mandatory. Though for some speakers o-kathigitis ke i-sinaderfos MU (the-professor-MASC and the-colleague-FEM POSS.1sg) can be assigned either of the readings 'the professor and my colleague' (preferred reading) and 'my professor and my colleague', this does not unambiguously indicate that POSS can take wide scope. Rather, usage of an NP that does not contain a possessive (e.g. *o kathigitis*) can often imply the existence of a 'possessor' (in this case, student of the professor), even outside coordination contexts with the rightmost conjunct bearing POSS. Even if we were to assume that the reading 'my professor and my colleague' can only be due to the possessive suffix's taking wide scope, that still wouldn't commit us to the PLC analysis: as Miller has shown, the credibility of the coordination test varies considerably, and 'it cannot be argued that an item is necessarily *not* an affix because it can have wide scope' (1992:157). To this effect, Miller provides examples where elements for which he claims affix status appear to exhibit wide scope in coordination e.g. the definite and indefinite article in French (Le/Un collegue et ami de mon père; 'the/a friend and collegue of my father'), and shows that this is also true for elements whose affixhood is undisputed and is also reflected in the orthographic tradition, as e.g. anti in C'est un juge anti-dommage et intérêts ('He is an anti-compensation judge').

4 A complement composition approach

Previous HPSG accounts of pronominal affixation (cf. e.g. Sag and Miller (1997) and Abeillé, Godard, and Sag (1997) for French) rely on *composition*, a notion reminiscent of *division categories* in categorial grammar, originally incorporated into HPSG by Hinrichs and Nakazawa (1994). By composition, a functor (e.g. an auxiliary verb such as avoir 'have') can combine with an unsaturated argument (e.g. a participle such as donné 'given') whose valence requirements have not been satisfied, and also, *directly*, with the arguments of that participle (e.g. le livre 'the book' and à Marie 'to Mary'). Alternatively, the arguments the auxiliary 'inherits' from the participle can be realized as affixes, which allows to account for various instances of the phenomenon traditionally known as *clitic climbing*, such as e.g. in *le-lui*-avons donné ('we have given it to her/him'). This section reaches a conclusion that at first sight might appear rather surprising, namely, that an approach origin-

important than him / *more important POSS.3.masc.sg).

ally proposed for VP pronominal affixes in Romance can be extended to account for the possessive suffix in the Modern Greek NP.

A composition approach to possessive affixation in NP requires that both determiners and adjectives should be treated as heads. In the last decade, most work on the syntax of determiners proposes their being treated as the head of the phrase they occur in. Such accounts for instance include the seminal work of Abney (1987) and within the HPSG framework the proposal of Netter (1994). Recent work in MG is also in line with this view (cf. e.g. Stavrou (1991), and Kolliakou (1995) for an HPSG approach.) Assuming a head treatment of determiners a la Netter (1994), and unlike Pollard and Sag (1994), a 'composition' determiner can be assigned the argument structure shown in (11) below by which it can select for a lexical noun and 'inherit' the arguments of that noun.[6] $\oplus$ stands for append.

(11) Determiner (preliminary version)

$$\left[\; CAT \left[\begin{array}{l} HEAD\ det \\ ARG-ST\ <\ N[ARG-ST\ \boxed{1}]\ > \oplus \boxed{1} \end{array}\right]\;\right]$$

The argument structure in (11) allows for two possibilities: (a) the determiner's combining with its arguments 'in the syntax', as shown in (12a), where both arguments of tria ('three') are typed *canon(ical)* – *canon* is a subtype of *synsem* and it signals that $\boxed{1}$ and $\boxed{2}$ are to be syntactically realized: signs (which are specified with a phonological value) are constrained to have canonical synsems, cf. Sag and Miller (1997), Abeillé, Godard, and Sag (1997) – and (b) the determiner's realizing the inherited possessive argument as an affix – *aff(ix)* also being a subtype of *synsem* which however is never associated with an attribute PHON, to constitute a word or phrase; this is shown in (12b) where the determiner's morphology consists of the inflected form tria ('three') and the possessive suffix tu (POSS.3.SG).

(12) a.

DP

h: ARG-ST ⟨ $\boxed{1}$canon, $\boxed{2}$canon ⟩ / tria / three

c: $\boxed{1}$[ARG-ST ⟨ $\boxed{2}$canon ⟩] / arthra / papers

c: $\boxed{2}$ / tu Ilia / of Ilias's

b.

DP

h: ARG-ST ⟨ $\boxed{1}$canon, $\boxed{2}$aff ⟩ / tria-tu / three-POSS.3sg

c: $\boxed{1}$[ARG-ST ⟨ $\boxed{2}$aff ⟩ / arthra / papers

[6] I am here following Sag and Godard (1994) in assuming that possessives are arguments of nouns.

However, with ARG-ST being an HPSG feature of lexical heads that does not propagate onto phrases, this type of composition approach gives rise to very flat structures like (12a) which lack independent motivation in Modern Greek. Rather, evidence from pronominalization provides support for a hierarchical structure of the type illustrated by the bracketing in (13a): the partitive tus can replace a single NP constituent that includes the noun's complement tu Ilia, as in (13b), rather than a lexical N complement of the determiner (see ill-formed (13c)).

(13) a. [tris [fili [tu Ilia]]] ('three friends of Ilias')

b. tris tus ('three of-them')

c. *tris tus tu Ilia (lit. three of-them of Ilias)

Moreover, an approach based on argument composition in the above sense will encounter a problem in case of nominal phrases which also contain adjectives: if the determiner's ARG-ST contains a lexical N and its arguments, it is not clear how adjectives can fit in. To accommodate adjectives, the argument composition analysis would require them to be treated as heads, rather than adjuncts, when combining with N′s, and AP mothers to 'dominate' noun heads and their complements. Though such a proposal is not novel in the literature (cf. e.g., in (Abney 1987)), it must be suitably formulated so as to accommodate the fact that adjectives can iterate, and, moreover, constrained so as to yield the right scoping in adverbial modification. These issues are addressed below.

Let us start with the last issue – the feasibility of a head approach to adjectives. A treatment of adjectives as heads of nominal projections is familiar from categorial grammar where adjectives are assigned the type NP/NP i.e. they are treated as functors that take an NP argument and yield another NP. In HPSG terms, this effect can be achieved (a) by modelling the types *adjective* and *noun*, which constitute appropriate values of the feature HEAD, as subtypes of a supertype *nominal*, also meant to constitute an appropriate value of HEAD, and (b) by assuming that phrases consisting of an adjective and an N′ are of type *hd-comp-ph (head-complement-phrase)*, cf. Sag (1997), or in terms of earlier HPSG work, they satisfy the head-complement ID-schema. The details of this proposal will be provided shortly.

A variety of arguments for treating adjectives and nouns in MG as partly unified categories are provided in Kolliakou (1995). I will here confine myself to some morphological and syntactic evidence in support of this position. MG adjectives and nouns fall under the same morphological paradigms and both categories are morphologically marked for case and person/number/gender agreement. (14) provides one adjective and one noun example of a given morphological paradigm in MG:

(14) a. kenuri-o (new-N(OM)/A(CC).3SG.NEUT); podilat-o (bike-N/A.3SG.NEUT)
b. kenuri-u (last-GEN.3SG.MASC/NEUT); podilat-u (bike-GEN.3SG.NEUT)
c. kenuri-a (last-N/A.3PL.NEUT); podilat-a (bike-N/C.3PL.NEUT)
d. kenuri-on (last-GEN.3PL); podilat-on (bike-GEN.3PL.NEUT)

Syntactic overlap in the distribution of APs and NPs is manifested in at least two contexts. First, both adjectives/APs and nouns/NPs can 'host' a definite article in the multiple definite marking construction, as shown in (15) below. No matter whether MG definite articles are to be treated as prefixes or proclitics (postlexical clitics), an account of their morphological or syntactic realization, respectively, needs to determine appropriate 'hosts' which they can be affixed to or cliticized onto. The supertype *nominal* allows to generalize over the MG definite article's suitable hosts.

(15) To $[_{NomP}$ (kenurio) podilato] to $[_{NomP}$ kokino]
the (new) bike the red
'the (new) red bike'

Second, both adjectives and nouns can function as complements of higher heads in 'canonical' and 'elliptical' contexts. (16a) below shows that in MG a 'bare' singular count term can function as a 'maximal nominal projection', one which saturates a subcategorization requirement of a verb head. In the elliptical context of (16b), the same verb satisfies its valence requirement for an accusative direct object by solely combining with an adjective. Similarly, a determiner selects for a nominal complement which can be instantiated either as a noun or as an adjective, as shown in (16c&d), respectively. Modelling adjectives and nouns as subtypes of *nominal* – the category of both verb and determiner complements in MG[7] – will enable a unified account of the syntax of 'canonical' and 'elliptical' constructions to be provided – one that does not posit phonologically null noun heads in case e.g. of (16b&d), and is in the spirit of semantic approaches to ellipsis resolution that do not assume reconstruction in the syntax (e.g. Dalrymple, Shieber, and Perreira (1991)).

(16) a. Agorasa $[_{NomP}$ (kenurio) vivlio]
bought-1.SG (new) book
'I bought a (new) book.'

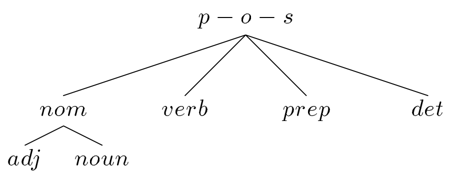
b. Exasa to vivlio mu ki agorasa $[_{NomP}$ kenurio].
lost-1.SG the book POSS.1.sg and bought-1.SG new
'I lost my book and bought a new one'

c. Vrikes kanena $[_{NomP}$ isitirio?]
get-2.SG any ticket?
'Did you get a ticket?'

d. I times ton isitirion pikilun. Kita na vris kanena $[_{NomP}$ ftino].
the prices of the tickets vary. try to get any cheap
'The prices of the tickets vary. Try to get a cheap one.'

(17) illustrates the proposed hierarchy of parts-of-speech (p-o-s) which includes *nominal*.

(17) Parts-of-speechs (p-o-s):



The feature structure in (18) below with a preliminary ARG-ST value illustrates an adjective selecting for an N′ complement, N′ being an abbreviation for objects

[7] Of course MG verbs also take DP complements. A slightly different proposal which accommodates this fact is provided in Kolliakou (1995).

specified HEAD *nominal* and whose valence features do not contain any canonical elements, i.e. their subcategorization requirements have already been satisfied (but see below). (18) will permit phrases containing no, one or more adjectives, the noun, and the noun's phrasal complements (if any) to syntactically combine with an adjective head which will in turn head a Nominal Phrase.[8] Case concord and agreement in person/number/gender between the adjective head and its N′ complement is straightforwardly accounted for by structure-sharing ($\boxed{1}$ and $\boxed{2}$, respectively.) The RESTR value of the adjective is specified exactly as in the adjunct approach to adjectives of Pollard and Sag (1994), by lexically unioning the set of psoas $\boxed{3}$ contributed by the N′ with the adjective's own psoa.

(18) Adjective as head (with preliminary version of ARG-ST value):

$$\begin{bmatrix} SS \mid LOC & \begin{bmatrix} CAT & \begin{bmatrix} HEAD\ adj \begin{bmatrix} PRD\ - \\ CASE\ \boxed{1} \end{bmatrix} \\ \\ ARG-ST\ <\ N' \begin{bmatrix} CASE\ \boxed{1} \\ INDEX\ \boxed{2} \\ RESTR\ \boxed{3} \end{bmatrix}\ > \end{bmatrix} \\ \\ CONT & \begin{bmatrix} INDEX\ \boxed{2} \\ RESTR\ psoa \cup \boxed{3} \end{bmatrix} \end{bmatrix} \end{bmatrix}$$

Note furthermore that a head approach to adjectives couched in HPSG will not encounter any particular problems with constraining adverbial scope over the adjective alone as e.g. in (19b) below, rather than over the AP, as in the incorrect (19c). HPSG does not require a one-to-one mapping between syntactic structure and scope. In fact, as shown by Kasper (1996), the 'traditional' HPSG analysis of adjectives as adjuncts of N′ provided by Pollard and Sag (1994) makes wrong predictions for recursive modification, i.e. it will incorrectly derive (19c) as the content of [[apparently indifferent] behaviour]. A treatment of adverbials as on a par with complements with respect to subcategorization, as e.g. proposed by van Noord and Bouma (1994) and Kim and Sag (1995) among many others, appears to permit a correct content value to be lexically specified, one with adverbial scope exclusively including the psoa of the adjective head, rather than a set of psoas also containing those contributed by the adjective's N′ complement. The details of such a proposal cannot be discussed here due to space limitations.

(19) a. syntax: [apparently [$_{AP}$ indifferent [behaviour]]]

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[8] This proposal as it currently stands will allow for 'elliptical' nominals with recursive adjectives e.g. (??)Agorases [$_{DP}$ kanena [$_{NomP}$ kenurio [$_{NomP}$ ftino]]]? (lit. bought-2.SG any new cheap? putatively: '??did you buy any new cheap one?'), which are not considered to be grammatical by all speakers. One way for eliminating such nominals could be by distinguishing between adjectives and nouns, the latter being specified N+ in all instances, whereas the former being N− as a default, but N+ when combining with an NP complement – their complement's specification overriding their own default when the two are put together. Assuming that adjective heads select for N+ nominal complements, elliptical examples with recursive adjectives will thus be ruled out. A shortcoming of this proposal is however that it appeals to a notion of default which has not hitherto been commonly assumed in HPSG work, but see *order independent default unification* by Lascarides, Briscoe, Asher, and Copestake (1996). Thanks to Ivan Sag for pointing this out as an issue.

b. content: behaviour$'$(x) $\wedge$ apparent$'$ (indifferent$'$(x))
c. incorrect content: apparent$'$(behaviour$'$(x) $\wedge$ indifferent$'$(x))

I will now present a composition approach which (a) is similar to the one proposed for French causative constructions by Abeillé, Godard, and Sag (1997) in that the 'composed' elements are members of COMPS rather than ARG-ST, and (b) differs from the composition approaches to pronominal affixation in Romance in that it maintains hierarchical structuring by exclusively permitting affix members of COMPS to be 'inherited' by 'composition' heads.

Following Sag and Miller (1997) and Abeillé, Godard, and Sag (1997) for verbs in Romance, I assume two types of nominal words: *plain-nominal-word (pl-nom-wd)* and *clitic-nominal-word (cl-nom-wd)*. The phonology value of *pl-nom-wd* is the basic inflected form that does not bear a possessive suffix. It is computed by an inflectional function (F_M) which will have to take into account the root value specified in the lexeme type as well as information specified inside the index (person/number/gender agreement.) On the other hand, the phonology value of *cl-nom-wd* in addition incorporates a possessive suffix. It is computed by a two argument function – a simpler version of Sag & Miller's F_{PRAF} – its first argument $\boxed{1}$ being the PHON value provided by F_M, and its second argument $\boxed{2}$ the word's ARG-ST value.

(20) (a) $\begin{bmatrix} lexeme \\ PHON\ \boxed{1} \\ ARG-ST\ \boxed{2} \end{bmatrix}$ (b) $\begin{bmatrix} pl-nom-wd \\ PHON\ <\ F_M(\boxed{1})\ > \\ ARG-ST\ \boxed{2} \end{bmatrix}$

(c) $\begin{bmatrix} cl-nom-wd \\ PHON\ <\ F_{PRAF}(\boxed{1},\boxed{2})\ > \\ ARG-ST\ \boxed{2} \end{bmatrix}$

Plain nominal forms are defined as having their argument structure list correspond to the concatenation of their valence features SPR and COMPS[9] plus a possibly empty list of gaps, in case some argument is being extracted. The list value of COMPS is unconstrained, thus allowing for plain morphology adjectives and nouns that contain an affix element in their COMPS list (and by unification in their ARG-ST list too). This is crucial for the type of composition approach proposed, one which is compatible with hierarchical NP structures. $\bigcirc$ stands for the shuffle operation.

(21) Valence features and ARG-ST of *pl-nom-wd*:

$$\begin{bmatrix} pl-nom-wd \\ SPR\ \boxed{0} \\ COMPS\ \boxed{1} \\ ARG-ST\ \boxed{0} \oplus \boxed{1} \bigcirc list(gap) \end{bmatrix}$$

For clitic morphology nominal forms, on the other hand, ARG-ST comprises a (potentially empty) list-of-length-one of affixes on top of the SPR and COMPS lists (and a potentially empty list of gaps.) It should be mentioned here that the

[9]I am following Sag and Godard (1994) in assuming that the SUBJ list of nouns is always empty and for simplicity have omitted it from ARG-ST. Notice also that since determiners are not treated here as specifiers, and, moreover, MG provides for no 'possessive determiners' e.g. in English John's in John's poem, the SPR list of most nominal examples considered in this paper is also empty. A possible exception is the case of adverbials which can perhaps be treated as specifiers of adjectives, rather than complements (see discussion above).

only type of noun complement that can be realized in the morphology as an affix is one that is realized in the syntax as a genitive NP. A noun head in MG can take at most one phrasal genitive or affix, a fact which can be formulated as a constraint on ARG-ST lists of MG nous. An argument typed *gen*, to be realized as a phrase or affix, is also the leftmost argument inside the noun's ARG-ST. Note that the COMPS list of *cl-nom-wd* is constrained to exclusively contain canonical elements. As will become clear below, this is crucial for preventing the multiple realization of a given possessive in the same NP.

(22) Valence features and ARG-ST of *cl-nom-wd*:

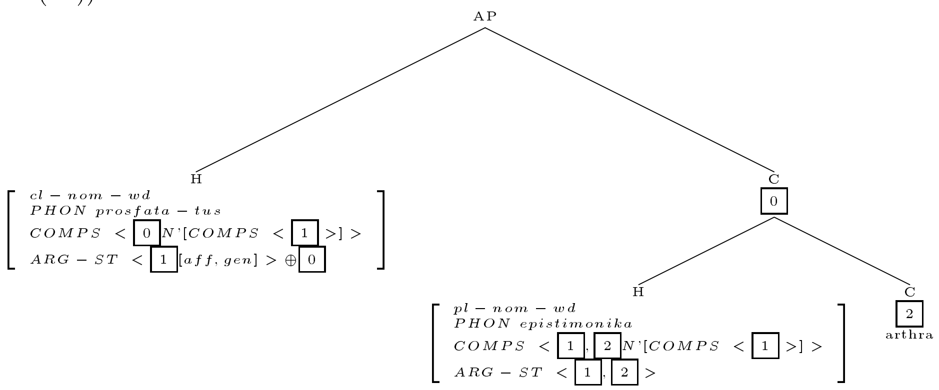
$$\begin{bmatrix} cl-nom-wd \\ SPR\ \boxed{0} \\ COMPS\ \boxed{1}(canon) \\ ARG-ST\ \boxed{0} \oplus <\ aff,\ gen\ > \oplus \boxed{1} \bigcirc\ list(gap) \end{bmatrix}$$

Consider now the (revised) ARG-ST list of the MG adjective:

(23) Argument structure of MG adjective (final version):

$$\begin{bmatrix} ARG-ST\ <\_> \oplus <\ \boxed{1}[aff,\ gen]\ > \oplus <\ N'[COMPS\ <\ \boxed{1}\ >]\ > \end{bmatrix}$$

The ARG-ST value in (23) is intended to replace the preliminary ARG-ST value specified in (18) above. The first slot $\langle\ \_\ \rangle$ is reserved for the specifier. The third slot is occupied by an N′ element whose CASE, INDEX and RESTR, omitted here for simplicity, relate with the CASE, INDEX and RESTR of the adjective's exactly as was shown in (18). The crucial innovation is that N′ is specified with a potentially nonempty COMPS list which is 'inherited' by the adjective and is constrained to contain elements of type *affix* (in fact, at most one). In case the 'inherited' affix list is nonempty, two possibilities exist: (a) the affix is not present in the adjective's own COMPS list, rather it is morphologically realized, in other words, the adjective is an instantiation of *cl-nom-wd*, and (b) the affix is a member of both ARG-ST and COMPS of the adjective head and will be 'inherited' by a higher head, the adjective thus being an instantiation of *pl-nom-adj*. These two options are illustrated in the following tree-diagram, where the irrelevant for the current purposes SPR list is omitted for simplicity:
(see (2b))



The head-complement phrases represented in terms of branching nodes inherit the *head-complement-phrase* (*hd-comp-ph*) constraint:

(24) *hd-comp-ph* $\Rightarrow$

$$\begin{bmatrix} COMPS\ \boxed{0} \\ HD-DTR\ \left[\ COMPS\ \boxed{0} \oplus <\ \boxed{1} \ldots \boxed{n}\ >\ \right] \\ NON-HD-DTR\ <\ [SS\ \boxed{1}]\ \ldots\ [SS\ \boxed{n}]\ > \end{bmatrix}$$

(24) is in the spirit of type-specific constraints on phrasal types, as in Sag (1997). This formulation enables the first affixal element $\boxed{0}$ in the COMPS list of a given nominal to propagate to its mother's COMPS list from where it can be inherited by complement composition, the phrasal complements $\boxed{1} \ldots \boxed{n}$ being cancelled off in the syntax. $\boxed{0}$ can alternatively be the empty list.

We can now apply the same to determiner heads and ensure that they combine with a single phrasal complement in the syntax, thus giving rise to hierarchical structures. The (revised) determiner's argument structure is as shown in (25). I also assume a plain and a clitic morphology determiner type, analogous to those provided for nominals in (20b&c) above.

(25) Argument structure of determiner (final version):

$$\left[\ ARG-ST\ <\boxed{1}[aff, gen]> \oplus N'[COMPS\ <\boxed{1}>]\ \right]$$

Consider finally two remaining issues: (a) the requirement that post-nominal adjectives should not bear a possessive suffix, as was shown in (5) above, and (b) the obligatory 'possessive doubling' for first and second person, which was illustrated in (9). Postnominal adjectives with clitic morphology can be simply ruled out by the *Left Triggering Linear Precedence (LP) Constraint* in (26) which orders adjectives of this type to the left of their nominal syntactic sister:

(26) *Left Triggering LP Constraint:* [cl-nom-wd, adj] $\prec$ [nom]

Under the lexicalist account proposed here, 'possessive doubling' for first and second person can be accounted for by means of a lexical rule reminiscent of the one proposed by Sag and Miller (1997) for the 'floating' of `tous` ('all') from object NPs in French. The rule applies to a noun lexeme with a genitive argument in its ARG-ST list, i.e. one that can be realized as a possessive phrase or suffix. The resulting lexeme is just like the input, except that (a) the genitive argument is constrained to be of type *aff*, and, moreover, its person value specified inside the index is typed *nonthird*, a novel type subsuming first and second person, and (b) there is an additional ARG-ST member of sort *canon*, to be realized as an accusative noun phrase, that is coindexed with (and hence agreeing with) the affix. The ARG-ST list of the input is constrained to contain no accusative elements (list(nonacc)) to prevent *Possessive Doubling LR* from occurring recursively.

(27) *Possessive Doubling LR:*

$$\begin{bmatrix} lexeme \\ SS|LOC|CAT \begin{bmatrix} HEAD\ noun \\ ARG-ST\ <\ \boxed{1}[gen]\ > \oplus list(nonacc) \end{bmatrix} \end{bmatrix} \rightarrow$$

$$\left[\ ARG-ST\ <\ \boxed{1}[aff, nonthird]_i,\ [canon,\ acc]_i > \oplus list(nonacc)\ \right]$$

5 Conclusion

In this paper I have presented evidence in support of an affix analysis of the MG 'weak form' possessive pronoun and discussed problems for a PLC approach to this element in terms of *prosodic inversion*. I have proposed a *complement composition* account that is reminiscent of previous HPSG work in French, but differs from such accounts in that it maintains hierarchical structuring in NP by exclusively permitting affix members of complement lists to be composed by higher heads. This approach presupposes an analysis of both determiners and adjectives in MG as heads of the phrase they occur in – a hypothesis which has been entertained in diverse theoretical frameworks (GB and Categorial Grammar), and, in addition, is independently motivated in MG.

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