The purpose of this paper is to investigate the internal constituent structure of the verbal forms in Modern Greek. The evidence presented shows that word formation is a complex process involving the obligatory interaction of syntactic as well as morphological structural levels, contra Rivero (1990) and Joseph and Smirniotopoulos (1993). It is argued that both syntax and morphology set constraints that must be satisfied in order for the derived forms to be grammatical.

1. Introduction

In this paper, I discuss the internal constituent structure of the verbal forms in Modern Greek (MG). In line with the data presented in (1-4), it is shown that what follows the root is a morphological unit representing not only aspect and voice but also tense as well as agreement features. The constituents of this morphological cluster cannot be distinguished any further (Galani to appear a).

(1) 'e - graf - sa
AUG - root.write - PER.A.PST.1SG
'I wrote.'

(2) gr'af - tika
write - PER.NA.PST.1SG
'I was written.'

(3) graf - [(O)tan]
write - [(TV)IMP.NA.PST.3SG]
'He/she/it was being written.'

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1 In this paper I will be using the following abbreviations: IMP(efective), PERF(ective), Act(ive), NA(Non-Active), PST(Past), NPSI(Non-Past), SG(Singular), PL(Plural), AUG(ment), INFL(ection), Theme(Vowel), M(odern)G(reek).

2 The insertion of the augment is not discussed in this paper. Refer to section 2 for a brief sketch.
Moreover, and following the traditional treatment of theme vowels (TV) (Lieber 1982), I expect TVs (-o- in (3) and -u- in (4)) to appear next to a root to form a stem (grafo-, kalu-) to which the inflectional suffixes (-tan) are further added (grafo-tan, kalu-tan). TVs are traditionally seen as markers of the conjugational classes to which verbs belong. Crucial for this approach is the claim that TVs are empty morphemes (Spencer 1991) which necessarily means that they do not represent any semantic features. Nonetheless, this claim is not compatible with part of the data; bearing in mind that in (3-4) the TVs consist part of the inflectional suffixes, they cannot be considered as empty morphemes, since they are inflected for semantic features. Additionally, as (5) below shows their morphological spell-out may be subject to agreement.

(5) a. gr`af - [(o)me]
    write - [(TV)IMP.NA.NPST.1SG]
    ‘I am being written.’

b. gr`af - [(e)se]
    write - [(TV)IMP.NA.NPST.2SG]
    ‘You are being written.’

There are two main points of inquiry dealt with in this paper. The first concerns the features represented in TVs. More specifically, it is the structural level at which TVs are inserted that is of interest. The second point relates to the kind of mechanism used to match the verbs belonging to different conjugational classes ((3) versus (4)) with the “correct” set of inflectional suffixes: for example, the root graf- (write) will be only matched with --otan but not *-utan. The discussion of these points will also shed light on the question of what kind of process Word Formation (WF) is. There are two dominating approaches regarding WF in the literature: a syntactic treatment (Baker 1985, Pollock 1989) versus a morphological treatment (Lapointe 1980, Di Scuillo and Williams 1987).

If I take WF as a purely syntactic process (Rivero 1990 on MG), I cannot explain the allomorphy (a morphological issue\(^4\)) of the TVs (5) in syntactic terms. In addition, I cannot retain what I called the “correct” matching between the roots and the inflectional suffixes ((3) – (4)). Also, the traditional treatment of TVs (TVs as part of the stem) cannot be assumed within a framework that takes the head of VP to be occupied by the root of the verb. Finally, further problems are created if I assume the Split-INFL hypothesis, as in Rivero

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\(^1\) Spencer (1991) further suggests that TVs are independent morphemes and consequently should not be treated as part of the stem.

\(^4\) Allomorphy has been also seen as a phonological issue in the literature (Schane 1973, Hooper 1976 among others).
(1990), who proposes that V, Aspect, Voice, Tense and Agreement all head their own maximal projections in the syntactic representation. This would imply a direct matching between the semantic features and their morphological realisations contrary to what has been previously suggested.

Now, if I assume that WF is a morphological process, there do not seem to be any restrictions constraining the insertion of TVs in the roots. However, if I am correct about the semantic features represented in the TVs, this approach violates what can be seen as the standard treatment of stems. Stems are not inflected for semantic features (Spencer 1991). On the other hand, the allomorphy of TVs is required to be interpreted as the result of the application of a series of readjustment rules, as has been previously attempted in the literature (Aronoff 1976, Joseph and Smirniotopoulos 1993 on MG).

However, in section 3 of this paper, I outline a complex model that exhibits the obligatory interaction of syntax and morphology based on the principles of Distributed Morphology (Halle and Marantz 1993). This model enables me to provide an economical and unified account of the realisation of aspect, voice, tense and agreement in MG. Crucial for this model is the treatment of TVs I assume. The rest of this paper is organised as follows. I first introduce the main principles of the framework I adopt in section 2 and I then move on to the proposals I make for MG in section 3. Finally, the application of the model is illustrated in section 4. In the final section, I conclude.

2. An outline of the framework

Distributed Morphology (DM) is a post-syntactic framework proposed by Halle and Marantz (1993). At the syntactic level, the terminal nodes are seen as complexes of syntactic and semantic features called morphemes. These morphemes lack any phonological specification. Once the syntactic operations are applied (e.g. head-movement), the structure enters into the morphological level. Morphological processes (e.g. fusion) may further modify the structure before Vocabulary Insertion (VI) applies. Fusion is the operation by which two terminal nodes are fused into a single node under the condition that only one vocabulary item that matches all the morphosyntactic features of the fused node can be inserted in the fused node. In the account I propose, the vocabulary item competing for insertion in the fused terminal node should match all the features of this node, contrary to Halle and Marantz (1993:116) who suggest that the vocabulary item inserted in the fused node ‘must have a subset of the morphosyntactic features of the fused node, including the features from both input terminal nodes.’ The view I take on the subject matter further contradicts Massuet (1999) who claims that the features of the vocabulary item should match all or subset of the features of the fused node. Finally, VI supplies the terminal nodes with phonological features and it is subject to the Subset

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5 See Galani (to appear a) for discussion on the problems Rivero’s (1990) account creates for the direct matching between the inflectional suffixes and the syntactic positions they occupy.
Principle (Halle 1997); the most highly specified item for the features of the given terminal node wins the competition among the vocabulary items.

One point should be made clear: although I only discuss the syntax-morphology interface in this paper, I generally propose that WF can be only seen as a complete process once all the syntactic, morphological as well as phonological processes are complete. The necessity of the obligatory application of the phonological processes in WF can be seen in the analysis of the augment in MG. The augment is a morpheme inserted in some verbal forms in the past tenses, when the stress moves to the antepenultimate and the number of the syllables is not adequate to occupy the stress at that position. The augment is consequently a phonologically specified morpheme, the insertion of which cannot be explained in syntactic or morphological terms. Unless it is inserted in those specific forms, WF results at ungrammaticality. This extension on DM’s approach to WF is discussed in Galani (to appear b) in detail.

3. An alternative account

In this section, I present my arguments for the complex system of WF I propose. This system requires the obligatory interaction of the syntax and the morphology. Such an analysis contradicts Joseph and Smiriotopoulos (1993) who propose that stems are inflected for aspect and WF is a purely morphological process. It also deviates from Rivero (1990) who claims a direct matching between the pieces of inflection and the syntactic positions they occupy assuming a purely syntactic approach to WF. In section 3.1, I first discuss the status of roots and inflectional suffixes in MG proposing that Rivero’s direct matching is not a valid argument. On the other hand, I argue that verbal forms in MG consist of roots and inflectional suffixes. I draw attention to the syntactic operations and constraints that need to be satisfied in order for the derived forms to be grammatical. In section 3.2, I move onto the analysis of the TVs. TVs inflect for aspect but they are treated as part of the morphological cluster representing aspect, voice, agreement and tense. The discussion around TVs answers questions on the morphological restrictions that need to be satisfied in the morphological component.

3.1. Roots and Inflectional Suffixes in Modern Greek

I assume that the MG verbal morphology, in particular, is morpheme-based contrary to Joseph and Smiriotopoulos (1993) who claim that it is stem-based following Anderson (1992). The distinction of three different stems in their account is by no means theoretically and/or empirically motivated and it does not follow a regular, specific and coherent pattern which allows predictions to be made. Consider the following examples:
(6) Stem 1: Imperfective forms
   a. gr`af - o
      write.IMP - NPST.1SG
      `I am writing.'
   b. gr`af - [(o)me]
      write.IMP - [(TV]NA.PST.1SG]
      `I am being written.'

(7) Stem 2: Perfective forms
   a. (`e) - graf
      write.PERF - PST.1SG
      `I wrote.'

(8) Stem 3: Perfective, Non-active forms
   a. gr`afik
      write.PERF.NA.PST - PST.1SG
      `I was written.'
   b. (tha) graft - `o
      (future particle) write.PERF.NA.NPST - NPST.1SG
      `I will be written.'

It seems that what distinguishes each stem can be either the morphemes representing aspect (6-7) or those representing aspect as well as voice (8); -s- (7a) is added to stem 1 (6) for the imperfective versus the perfective distinction. On the other hand in (8a) the morpheme inserted in the root, is not only associated with aspect but also voice features. Consequently, the distinction of stems might be based on aspect or it might be based on aspect and voice.

Similarly, if I associate the different stems with the realisation of aspect, it seems unreasonable to distinguish a third stem based on the realisation not only of aspect but also of voice features, as in (8). This is also associated with the way voice is represented in stems 1 and 2. The question which needs to be addressed here relates to the theoretical reasons that force me to suggest that only in stem 3 is voice represented in the stem, whereas it is in the inflectional suffixes in the other two cases.

In addition the treatment of stems provided here is incompatible with the ‘traditional’ treatment of stems, as was previously suggested. Stems are formed on the basis of meaningless morphemes attaching to a root. However, the insertion of the morphemes representing aspect and/or voice features violates the status of stems.

Moreover, I am now faced with another issue: what example (8) shows is that the morphological spell-out of stem 3 is further subject to the features of tense. When stem 3 is used in conjunction with the [+past] features, it is spelled-out as -tik- (8a), whereas when the [-past] features are represented, it is

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4 The verbal form in this example cannot appear as an independent word. It always appears with the future (tha graft`o) or subjunctive particles (na graft`o).
then spelled-out as –t- (8b). So, the attempt to associate some of the features with concrete morphological pieces in combination with the diversity of the morphological spell-out of these features and their interdependence makes this theory weak.

Consequently if the spell-out of the morphemes representing aspect and voice is subject to the features of tense in addition to the fact that this treatment of stems is not theoretically motivated, I could suggest that what follows the root is a morphological unit representing aspect, voice, agreement and tense. So, the inflectional suffixes are the part of the verbal form which changes throughout the verb paradigm. An important aspect of the account I propose, is the non-existence of stems. I provide further evidence for this position in what follows.

The position I take on the constituents of the verbal forms (roots and inflectional suffixes’) is further motivated by claims made on the grammatical category V. I assume with Marantz (1997) that the syntactic category V is a morphological category created by the syntax. I consequently provide support for the post-syntactic nature of WF and I propose that roots become verbalised only when they are matched to the inflectional suffixes once the syntactic operations are applied. Let me bring further evidence for the existence of roots and not stems from V-V compounds in MG. Two verbal forms may combine to form a compound in MG. Inflection, though, can be only seen in the second part of the compound. So, operations leading to compounding first apply and the compound form, then, is inflected for the semantic features.

\[(9)\quad a. \ `a\text{naf}\ -\ `s\text{a} + `\text{esvi}\ -\ 's\text{a} = \text{tun}_1\text{on} - \text{PER.A.PST.1SG} + \text{tun}_1\text{off. PER.A.PST.1SG} = `\text{anavosvisa} \]

`I turned on and off.‘

\[\quad b. \ `\text{anaf}\ -\ `\text{s\text{a}} + `\text{esvis}\ -\ `\text{s\text{a}} = \text{tun}_1\text{on. PER. - A.PST.1SG} + \text{tun}_1\text{off. PER - A.PST.1SG} = `\text{anafosvisa} \]

Assuming that it is the roots and not the stems that incorporate into compounding, I am in position to derive a grammatical form in V-V compounds, as shown in (9a). On the contrary if I assume that it is the stems which are incorporated, ungrammaticality results (9b). This clearly shows that roots are incorporated in compounding which are further matched to the inflectional suffixes. (For the syntactic constraints on V-V compounding and the order of the derivational and inflectional processes see Galani 2002a).

Moreover at the syntactic level, V, Aspect, Voice, Agreement and Tense head their own maximal projections prior to the application of any syntactic operations. According to Bobaljik and Thrainsson (1998), if a language allows

\footnote{For the purposes of this paper there is no need to make reference to prefixes, such as the augment or prepositions incorporated into compounds.}
two functional projections for agreement and tense, then the language allows
two subject positions, the verb moves out of the VP and crossing left-periphery
adverbs and the language might exhibit ‘a systematic attachment of morphemes
to the verb’s root (Pintzuk, Tsoulas and Warner 2000:3). This, in addition to the
fact that agreement and tense exhibit cumulative exponentence, enables us to
assume that the functional projections AgrP and TP are merged in the syntactic
component. Head-movement, then, obligatorily applies (see figure 1). Unless
merger and head-movement apply, the derived forms will be ungrammatical.
As soon as the syntactic operations are completed, the structure moves on to
the morphological component.

Moreover, the importance of the syntactic operations and any violations of
the constraints in WF (contra the morphological approaches to WF in the
literature) is more obvious in compounding. As Rivero (1992) suggests only
manner adverbs (sig’a ‘slowly’ (10a)) and not aspectual (ak’omi ‘yet’ (10b)) or
temporal adverbs can be incorporated in A-V compounding in MG. On the
other hand, in N-V compounds the internal structure of the compound is visible
in the syntax; the object of the verb (harti’a ‘cards’ (11a)) may also serve as the
first part of the compound (hartop’ezun ‘cards-were playing’ (11b)) (Galani
2002a).

(10) a. sig’a + vr’azo = sigovr’azo
slowly + boil = boil slowly

b. ak’omi + vr’azo = *akomivr’azo
yet + boil = *

(11) a. ta pedi’a p’ezun harti’a
the children play.IMP.A.NPST.3PL cards

b. ta pedi’a hartop’ezun
the children cards-were playing

Fig. 1
Nevertheless, before I discuss the morphological operations and VI, let me first tackle the question of matching the correct roots to the appropriate suffixes based on the information I draw from TVs.

3.2. Theme Vowels in Modern Greek

Initially I take TVs to be the markers of the conjugational classes. TVs provide not only the roots but also the inflectional suffixes the information about the conjugations. What is important here is the lexical features TVs represent. I assume that TVs carry features which associate them with the roots and consequently they further associate the roots with the inflectional suffixes, TVs are part of. So, TVs of verbs belonging to different conjugational classes will be specified for distinct lexical features. Consider examples (3-4), repeated here as (12-13) respectively.

(12) graf - [‘O]tan
     write - [(TV)IMP.NA.PST.3SG]
     ‘He/she/it was being written.’

(13) kal - [‘U]tan
     call - [(TV)IMP.NA.PST.3SG]
     ‘He/she/it was being called.’

The TVs of these two verbs differ (-o- in (12) versus -u- in (13)). Let me assume that for (12) the TV is marked with the feature [-α], whereas the one for (13) [+γ]. Based on my assumptions, the roots (graf-, kal-) as well as the inflectional suffixes (-ome, -ume) will be also marked with the features [-α] and [+γ] respectively. Consequently when VI applies, the competition of the vocabulary items for insertion in the specified nodes is won by the most highly specified item, the specification of which does not only match the semantic but also the lexical specifications. If these requirements are not satisfied, ungrammaticality results.

This can be briefly illustrated in the following way. Let us assume that I want to form the imperfective, non-active, non-past, first singular of the verb gr’afo (write). (14) shows the vocabulary items representing the features imperfective, non-active, non-past, first singular and the lexical specification and the information on the roots stored in the lexicon.

(14) a. /ome/ ⇔ [-α] IMP.NA.NPST.1SG
    /iome/ ⇔ [-β] IMP.NA.NPST.1SG
    /ume/ ⇔ [+γ] IMP.NA.NPST.1SG
    /tikame/ ⇔ [-α] IMP.NA.PST.1PL

b. /graf/ ⇔ [-α] √
    /kal/    ⇔ [+γ] √
For a root marked with the feature [-ə], only the vocabulary item marked with the same feature ([-ə]) and representing the imperfective, non-active, non-past and first person singular wins the competition for insertion in the appropriate terminal node resulting at grafome (I am written). Any other combinations are ungrammatical: *grafiome, *grafume, *grafika. They are ungrammatical for different reasons. The first two forms are ill-formed because the features of the root do not match the lexical specification of the inflectional suffix, whereas, in the last case, the features of the inflectional suffix do not match the semantic features of the terminal node the item was competing for. The last form (grafika) would have been grammatical if the features of the item matched the features of the node.

Moreover, I notice that TVs are treated as part of the inflectional clusters (-otan). In line with the data TVs behave in a very similar way to the morphological units representing aspect and voice. If I compare the forms in (15-17), TVs are inserted in the non-active forms (for (17b) see the discussion that follows). As was also previously mentioned, they are subject to the features of agreement, as in (15b versus 15c).

(15) a. ˈeː - graf ə
       write - IMP.A.NPST.1SG
       ‘I am writing.’

       b. ˈeː - [(O)me]
       write - [(TV)IMP.NA.NPST.1SG]
       ‘I am being written.’

       c. ˈeː - [(e)se]
       write - [(TV)IMP.NA.NPST.1SG]
       ‘You are being written.’

(16) a. ˈeː - graf a
       AUG - write - IMP.A.PST.1SG
       ‘I was writing.’

       b. graf - [(O)man]
       write - [(TV)IMP.NA.PST.1SG]
       ‘I was being written.’

(17) a. ˈeː - graf sa
       AUG - write - PERF.A.PST.1SG
       ‘I wrote.’

       b. graf tika
       write - PERF.NA.PST.1SG
       ‘I was written.’

At first it seems that TVs represent aspect and voice and depend upon tense and agreement. Thus, I extend the role of TVs; they are not only markers
of the conjugations classes—as it was traditionally thought—but they are also inflected for semantic features.¹

Let us now consider verbs like pl`eno (wash) in order to determine the exact features which are represented in TVs. The irregularity and the importance of such verbs lie in the way they are formed in the perfective, past tenses.

(18) a. pl - `eno
    wash - IMP.A.NPST.1SG
    'I am washing.'

b. `e - pl - ina
    AUG - wash - PER.A.PST.1SG
    'I washed.'

c. pl - `ithika
    wash - PER.NA.PST.1SG
    'I was washed.'

The root of the verbal form remains the same throughout the verb paradigm contrary to the part of the form which is altered throughout and is treated as the inflectional suffix. If I now compare (18a-b), I notice that the difference between them lies on the vowel change (-e- (pl`eno ‘I am washing’ (18a)) versus -i- (`eplina ‘I washed’ (18b)) respectively). If I compare (18b-c), it is further noticed that the vowel (-i-) appearing in the perfective, active, past form (18b) is also present in the non-active (pl`ithika ‘I was washed’ (18c)). Following Philippaki-Warburton (1973) I assume that in (18c) the perfective aspect is represented in the vowel (-i-), whereas the non-active voice in the unit -ithik-

However, the traditional treatment of these verbs in the literature does not assume that the root of the verb is pl-. Following Joseph and Smirniotopoulos (1993), they suggest that the stem of this verb is plen- which then changes into plin- and plithik-. Leaving the treatment aside, what is shown in (18) is that this verb behaves in a different way morphologically from gr`afo ‘write’ regardless of the fact that they share the same inflectional suffixes (past and agreement, at least, (15a) (18a)). Consequently, and following my claims, verbs such as pl`eno ‘wash’ should belong to a different conjugational class. This should be based on the choice of the TVs which should represent the features of aspect and/or voice. Following the position that TVs appear in the non-active forms, I conclude that TVs represent the features of aspect in line with (18c). The advantage of my account can be also seen in the predictions made. Comparing the way TVs are realised in (17c) versus (18c), I claim that these forms belong to different conjugational classes based on the information I draw from TVs. Thus, I am in position to predict that in gr`afo-type ‘write’ verbs, the

¹ Massuet (1999) discusses TVs in Catalan. Nevertheless, she does not assign any semantic features to them but she only treats them as realisations on every functional head F. See Galani (2002b) for discussion.
TVs are overtly realised in the cases where the imperfective (non-active) features are represented, unlike \textit{pl`eno}-type verbs ‘wash’. In the latter cases, TVs are spelled-out in a different way in the imperfect versus the perfective forms. Nevertheless, I do not suggest that TVs are treated as separate entries in the lexicon. Within the general account, I propose that TVs are part of the morphological cluster representing aspect, voice, agreement and tense.

Going back to the lexical features TVs bear, I assume that the MG verbal system is organised in terms of markedness based on the degree of markedness of the TVs, following similar proposals made in Massuet (1999). The degree of markedness derives from the degree of frequency and regularity verbal forms exhibit in MG. According to the findings of Holton, Mackridge and Philippaki-Warburton (1997) on the regularity pattern of verbs, \textit{gr`afo}-like ‘write’ verbs are more regular than \textit{tim`o}-like ‘honour’ verbs which are also more regular than \textit{kal`o}-like ‘call’ forms. As I also suggested above, we distinguish verbs, such as \textit{pl`eno} ‘wash’ from \textit{gr`afo}. The number of such verbs (\textit{pl`eno}-type), though, is not significant (7 verbs). Simultaneously, Koutsoudas (1964) notes that \textit{gr`afo}-like ‘write’ verbs are greater in number than \textit{tim`o} ‘honour’ which are also more than \textit{kal`o} ‘call’. The more embedded the form is, the more marked it is. This means that the more marked a form is, the most irregular pattern of formation it follows. So, verbs are organised in line with the markedness hierarchy presented in figure 2. This hierarchy has positive consequences on the organisation of the vocabulary items which compete for insertion in the terminal nodes. They are specified for the features TVs bear ([\(-\gamma\)], [+\(\gamma\)]), so when VI occurs, the search mechanism will only look for the items bearing the appropriate specification (For a complete discussion on the way items are stored in the lexicon and the significance of this hierarchy for the lexicon’s organisation, see Galani (2003b)).

Fig. 2.

\[\text{TV} \quad \begin{array}{c}
\text{Unmarked [-\(\alpha\]} \\
\text{\textit{Gr`afo}}-write \\
\text{marked [+\(\alpha\)} \\
\end{array}\]
\[\begin{array}{c}
\text{Unmarked [-\(\beta\]} \\
\text{\textit{Pl`eno}}-\text{wash} \\
\text{marked [+\(\beta\)} \\
\end{array}\]
\[\begin{array}{c}
\text{Unmarked [-\(\gamma\]} \\
\text{\textit{Tim`o}}-\text{honour} \\
\text{marked [+\(\gamma\)} \\
\text{\textit{kal`o}}-\text{call} \\
\end{array}\]

Nevertheless, I still need to explain how TV are inserted in the structure and how they associate roots and inflectional suffixes. Once the syntactic

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\[\text{Due to space limitations and the purposes of this paper, \textit{pl`eno}-like verbs and the problems their analysis present in the previous works in the literature (and especially in Joseph and Smirniotopoulos 1993) are not discussed in this paper. See Galani (2003a) for details.}\]
operations are complete, the structure enters the morphological component. As I previously suggested, aspect and voice are represented in a single morpheme (17a) due to cumulative exponence. Following this, I assume that AspectP and VoiceP are fused into AspVoiceP at the morphological component. Moreover, I also argued that the way aspect and voice are morphologically spelled-out is also conditioned by the features of tense ([+past] (8a-b)). Due to this I assume that the fused node AspVoiceP is further fused with TAgP into INFL. Furthermore, I follow similar claims made in Massuet (1999) and I treat TV as the realisations of a morphological well-formedness requirement (Noyer 1997) on the lexical head V (figure 3). This will not affect the status of roots, as roots become verbalised in the syntax. In the environments where TVs are overtly realised, impoverishment and context-sensitive rules delete the TV from the vocabulary item inflected for the semantic features and insert it at the TV position.

Finally once all the morphological operations have been completed and the requirements satisfied, the output of morphology serves as the input of phonology. As I previously mentioned, this discussion is omitted here (see Galani to appear b).

Fig. 3

\[\text{INFLP (fused)}\]
\[\text{INFL} \quad \text{VP} \]
\[+\text{non-past}, +\text{non-active}\]
\[+\text{1sg}, +\text{imperfective}\]
\[\text{V} \quad \text{TV}\]

4. The application of the model

In this section I apply the model I explored in the previous section to the non-active, imperfective, non-past form *gr'afome* (write).

At the syntactic level, head-movement applies, once TP and AgrP are fused (figure 4). The terminal nodes represent the features: [+imperfective], [+non-active], [+non-past], [+1sg]. The output of the syntactic component serves as the input of the morphological level.

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10 We deviate, though, from Massuet (1999) who suggests that TV are the realisations on every functional head, as we previously mentioned (footnote 8).
The first morphological operation to take place is the fusion of AspectP and VoiceP based on the impossibility to represent these features in independent morphemes (AspVoiceP). The dependence and the morphological spell-out of aspect and voice upon tense and agreement features leads to the fusion of the already fused nodes AspVoiceP and TAgP (INFLP). Once these operations are complete the morphological well-formedness requirement needs to be satisfied (figure 5). The root of the verb is specified for [-α] features which suggests that this form exhibits the less irregular pattern of formation.

The completion of these operations signals the start of the VI competition. From the available vocabulary items in the lexicon ((14) repeated here as (19)), the one marked for the features [-α, +imperfective, +non-active, +non-past, +1sg], wins the competition for insertion in the fused node INFLP (ome).

(19) a.  /ome/  ⇔  [-α] JP.IAC.NPST.1SG
     /ome/  ⇔  [-β] JP.IAC.NPST.1SG
     /ume/  ⇔  [+γ] JP.IAC.NPST.1SG
     /tikame/  ⇔  [-α] JP.IAC.PST.1PL

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This is not an exhaustive list of the vocabulary items in the lexicon.
An impoverishment rule deletes the TV from the vocabulary item which won the competition, and a context sensitive one inserts it under TV (figure 6).

The TV position may remain empty in other cases but this position will be marked with the relative feature. At the final stage of the complex process of WF, the morphological structure enters PF, where stress assignment first applies and it is then checked to see whether further phonological steps are necessary.

5. Conclusion

The internal constituent structure of the verbal forms in MG has been discussed in this paper. I claimed that TV are inflected for aspect but they are treated as part of the morphological cluster inflected for aspect, voice, agreement and tense. I associated them not only with the traditional claim in the literature – as markers of the conjugational class in which verbs belong but also as morphemes bearing lexical features necessary for the mapping of roots to the inflectional suffixes. I further suggested that they are inserted at the morphological component as the realisation of a well-formedness requirement on the lexical head V. Finally I assumed that any violations in the syntax or morphology lead to ungrammaticality. Consequently I claimed that WF can only be seen as a complete process once all syntactic, morphological as well as phonological processes are applied, contrary to the purely syntactic and morphological treatments in the literature.
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References


