

Greek stem allomorphy, Voice and Aspect: Remarks on Merchant (2015)

Abstract

Patterns of Greek verbal stem allomorphy involving the root, Voice and Aspect have been argued in Merchant (2015) to pose a challenge for adjacency-based locality theories, of the type defended in Embick (2010). A closer look reveals that Merchant's conclusion is based on a dubious structure. We argue that Voice and Aspect features are bundled together onto the same node in Greek, a configuration that, if correct, defuses Merchant's argument against Embick (2010).

Keywords: allomorphy, locality, Greek, Aspect, Voice, bundling

1 Introduction

A number of works have pointed to cases of allomorphic interactions that seem to violate the hypothesis in (1) from Embick (2010) (Carstairs, 1981; Bobaljik, 2000; Chung, 2007; Bobaljik, 2012; Bonet and Harbour, 2012; Merchant, 2015; Moskal, 2015; Moskal and Smith, 2016; Toosarvandani, 2016; Božič, 2018; Kastner and Moskal, 2018; Ostrove, 2018; Smith et al., 2018; Choi and Harley, 2019). The present paper deals with one of these apparent counterexamples to (1). Specifically, it deals with the case of Greek verbal

stem allomorphy, presented in Merchant (2015), where apparent long-distance allomorphy is levelled as an argument for abandoning (1) in favor of a weaker locality condition he calls ‘Span Adjacency’.¹

(1) *Node Adjacency*:²

Contextual allomorphy is possible only with elements that are concatenated.

We first show that, if we are to adhere to Merchant’s assumptions about the Greek verb, even his own ‘Span Adjacency’ is too strict to accommodate the attested patterns. We then argue, however, that the facts are actually in line even with the more restrictive hypothesis in (1), once Merchant’s assumptions about the structure of the Greek verb are appropriately revised, a move shown to be independently motivated by locality considerations for other patterns of selection in the language. As such, the present paper not only defuses the original argument for ‘Span Adjacency’ as the correct locality condition for allomorphy, but also stresses the point that, for at least some of the cases of ‘long-distance’ allomorphy reported in the literature, the distance might only be apparent, once the structures these cases are assumed to be associated with are more closely examined.

2 Merchant (2015)

2.1 Greek verbal stem allomorphy, Aspect and Voice

The characterization of the distribution of several Greek verbal stems relies on reference to two sets of features namely Voice features (ACTIVE/NONACTIVE) and Aspect fea-

¹Merchant (2015) seems to intend to provide a second case as evidence for the inadequacy of (1), by reference to English dialects featuring stems affected by both Tense and Polarity features. However, he ends up with an analysis that treats the crucial data points as undecomposed stems exponing the root (and the categorizer), the Polarity head and the Tense head all at once (Merchant, 2015, 300), which, if correct, pose no challenge to (1). For the rest of the paper, we focus on Merchant’s argument from Greek.

²The term ‘*Node Adjacency*’ is used in Merchant (2015) and we use it here too, for the sake of continuity.

tures (PERFECTIVE/IMPERFECTIVE) features simultaneously.³ The paradigm of the verb *'spɛrnɔ* ‘I sow’ in Table 1 for example, shows three stems, and the distribution of each of these stems is describable in terms of the morphosyntactic context it appears in. The stem *spɛrn-* appears in all and only Imperfective contexts. Since its distribution can be described by only referring to Aspect features, let us call such stems *Aspect Stems* (ASs). The distributions of the stems *spɪr-* and *spar-*, on the other hand, cannot be described by merely referring to Aspect features; one *also* needs to make reference to Voice features: *spɪr-* appears in all and only Active Perfective contexts, while *spar-* appears in all and only Nonactive Perfective contexts. Let us call these latter stems *Aspect-Voice Stems* (AVSs).

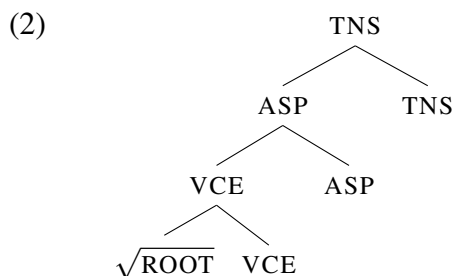
		IMPERFECTIVE		PERFECTIVE	
		ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
NONPAST	1S	'spɛrn-ɔ	'spɛrn-ɔmɛ	'spɪr-ɔ	spar-'θ-ɔ
	2S	'spɛrn-is	'spɛrn-ɛsɛ	'spɪr-is	spar-'θ-is
	3S	'spɛrn-i	'spɛrn-ɛtɛ	'spɪr-i	spar-'θ-i
	1P	'spɛrn-umɛ	sper'n-ɔmastɛ	'spɪr-umɛ	spar-'θ-umɛ
	2P	'spɛrn-ɛtɛ	sper'n-ɔsastɛ	'spɪr-ɛtɛ	spar-'θ-itɛ
	3P	'spɛrn-unɛ	'spɛrn-ɔndɛ	'spɪr-unɛ	spar-'θ-unɛ
PAST	1S	'ɛ-spɛrn-a	sper'n-ɔmuna	'ɛ-spɪr-a	spar-'θ-ik-a
	2S	'ɛ-spɛrn-ɛs	sper'n-ɔsuna	'ɛ-spɪr-ɛs	spar-'θ-ik-ɛs
	3S	'ɛ-spɛrn-ɛ	sper'n-ɔtane	'ɛ-spɪr-ɛ	spar-'θ-ik-ɛ
	1P	'spɛrn-ame	sper'n-ɔmastan	'spɪr-ame	spar-'θ-ik-ame
	2P	'spɛrn-atɛ	sper'n-ɔsastan	'spɪr-atɛ	spar-'θ-ik-atɛ
	3P	'spɛrn-anɛ	'spɛrn-ɔndan	'spɪr-anɛ	spar-'θ-ik-anɛ

Table 1: Paradigm of the verb *'spɛrnɔ* ‘I sow’

³The Greek morphological Aspect distinction has been assumed to correspond to a semantic ‘bound-ness’ distinction (Iatridou et al., 2001; Giannakidou, 2009, a.o.). The morphological Voice distinction seems to be harder to pin down as corresponding to a semantic distinction. Nonactive morphology appears in passives, one type of reflexive construction and a subset of anti-causative verbs in the language (Tsimpli, 1989; Embick, 1997; Roussou, 2009; Grestenberger, 2014; Alexiadou et al., 2015; Spathas et al., 2015; Manzini et al., 2016, a.o.). The fact that this morphology shows up in apparently disjoint semantic environments has led to theories that Greek Voice morphology is sensitive to a syntactic configuration (Embick, 1997; Roussou, 2009; Grestenberger, 2014; Alexiadou et al., 2015; Manzini et al., 2016). For now, we assume that given the right syntactic configuration (whichever that may be), Active and Nonactive features are inserted *somewhere* into the structure, for exponence to realize. We will later argue that this ‘somewhere’ is the very same head that hosts Aspect features.

2.2 The argument against Node Adjacency

Merchant (2015) argues that the existence of Greek AVSs, in particular those that appear in Nonactive Perfective contexts, provide evidence that Node Adjacency is too strict. His argument rests on three assumptions. The first is that Morphology interprets the structure in (2) (created by head movement).⁴



The second assumption is that the affixes *-θ* and *-ik* that appear in Nonactive Perfective forms (see Table 1) are the principal exponents of (i.e. they are mapped onto) the features Nonactive and Perfective respectively; *-θ* is also taken to be a secondary exponent of (i.e. is not mapped onto, but refers to) the feature Perfective, while *-ik* is also a secondary exponent of both the features Nonactive and Past (Merchant, 2015, 279), as in (3).

- (3)
- a. NONACTIVE ↔ *-θ*/ ___PERFECTIVE
 - b. PERFECTIVE ↔ *-ik*/ NONACTIVE ___PAST

Finally, he assumes that the stem that appears on Active Imperfective forms (i.e. *spɛrn-* in the above paradigm) is the default stem. Other stems, in this case *spir-* and

⁴Throughout the paper we exclude little *v* from the structures, as does Merchant himself, since it doesn't play any significant role in his argument. In fact, as pointed out by Christopoulos and Petrosino (2018), stem allomorphy and overt verbalizers do not co-occur, exactly as we expect from (1), if we also assume that zero exponents do not constitute barriers for allomorphic interactions, a provision that (1) is proposed alongside with (Embick, 2010). As such, Greek is reminiscent of Italian, where stem allomorphy is reported to occur exclusively in the absence of overt theme vowels (Calabrese, 2015a,b; Embick and Shwayder, 2017). We also remain agnostic about, and do not discuss, subject agreement, as its treatment does not currently seem to us to hinge on any point made in the present paper.

spar- are inserted by rules that also make reference to other morphosyntactic features, specifically to Perfective Active and Perfective Nonactive respectively, as in (4).

- (4) a. $\sqrt{\text{SOW}} \leftrightarrow \text{sp}\epsilon\text{rn-}$
 b. $\sqrt{\text{SOW}} \leftrightarrow \text{sp}\text{ir-} / \text{___ACTIVE PERFECTIVE}$
 c. $\sqrt{\text{SOW}} \leftrightarrow \text{spar-} / \text{___NONACTIVE PERFECTIVE}$

As Merchant correctly observes, it follows that Node Adjacency is too strict. Consider the Nonactive Perfective Past form in (5). This form involves an AVS, which means that Voice and Aspect features simultaneously determine the stem allomorph. Even though the Voice features are, by assumption, strictly adjacent to the stem, Aspect features are not. Importantly, the fact that there is an overt exponent of Nonactive intervening between the root and Aspect features eliminates the possibility of Fusion/Pruning (Embick, 2010).

- (5) $\text{spar} \quad -\theta \quad \quad -\text{ik} \quad \quad -\epsilon$
 $\sqrt{\text{SOW}} \text{ NONACTIVE PERFECTIVE PAST.3SG}$
 ‘He/She/It was sown’

2.3 Span Adjacency as an alternative to Node Adjacency

Due to the above conclusion, Merchant proposes that the notion of adjacency be modified to hold between sets of contiguous terminal nodes, instead of only between singleton terminal nodes. To do that, he draws on the notion of a *span* from Svenonius (2012) in (6) and revises the locality condition for allomorphy from Node Adjacency to (7).

- (6) Definition of a span: Let T be an ordered n -tuple of terminal nodes $\langle t_1, \dots, t_n \rangle$ such that for all $t \in T$, $t=t_1$ or t is an element of the extended projection of t_1 .
- a. For all $k = 1 \dots n$, t_k is a span (every node is a trivial span)

- b. For any $n > 0$, if t_k is a span, then $\langle t_k, \dots, t_{k+n} \rangle$ is a span.

(7) *Span Adjacency*:

Allomorphy is conditioned only by an adjacent span.

Just like Node Adjacency, (7) predicts that in an arrangement of hierarchically contiguous terminals X , Y and Z with X the most deeply and Z the least deeply embedded, X and Y can interact for the purposes of allomorphy, as can Y and Z . Unlike Node Adjacency, (7) also allows for Z and X to interact across an overt Y , so long as Y also participates in the determination of the relevant allomorph.⁵ A desired effect of the theory is, in Merchant's words, that 'an allomorph can be triggered by a distant head only if the allomorphy affects all intervening heads as well' (Merchant, 2015, 289), thus keeping the theory somewhat restrictive and distinct from other proposals where adjacency is abandoned altogether (Moskal, 2015; Moskal and Smith, 2016). It should be clear that, once (7) is adopted, Greek AVSs no longer pose a problem for locality: under (7), the overtness of the Voice terminal in (5) is no longer expected to block the interaction between the root and Aspect terminals because the Voice terminal also participates in determining AVSs.



2.4 Problem: even Span adjacency is too strict

Given Merchant's assumptions about the Greek verb and Span Adjacency as the locality condition for allomorphy, Greek stems are predicted to be potentially determined by the spans in (8-a), but crucially not by the span in (8-b), simply because, given the structure Merchant assumes, there is no span that includes the root and the Aspect head without also including the Voice head.

- (8) a. $\langle \sqrt{\text{ROOT}} \rangle$; $\langle \sqrt{\text{ROOT}}, \text{VCE} \rangle$; $\langle \sqrt{\text{ROOT}}, \text{VCE}, \text{ASP} \rangle$

⁵See also Bobaljik (2012, 223;fn 10) for a similar though not identical idea, based on Icelandic.

b. * $\langle \sqrt{\text{ROOT}}, \text{ASP} \rangle$

This prediction is not borne out, for quite a few paradigms. In fact, Greek verbal stem allomorphy primarily only follows the Aspect divide. One example of a paradigm that falsifies Span Adjacency is that of the verb *'sɛrnɔ* ('I drag') in Table 2 clearly divided between two ASs. Under the assumptions we have been making (see (9)), Span Adjacency predicts that (non-default) ASs should never arise, contrary to fact.⁶

		IMPERFECTIVE		PERFECTIVE	
		ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
NONPAST	1S	'sɛrn-ɔ	'sɛrn-ɔmɛ	'sir-ɔ	'sir-θ-ɔ
	2S	'sɛrn-is	'sɛrn-ɛsɛ	'sir-is	'sir-θ-is
	3S	'sɛrn-i	'sɛrn-ɛtɛ	'sir-i	'sir-θ-i
	1P	'sɛrn-umɛ	sɛr'n-ɔmastɛ	'sir-umɛ	'sir-θ-umɛ
	2P	'sɛrn-ɛtɛ	sɛr'n-ɔsastɛ	'sir-ɛtɛ	'sir-θ-itɛ
	3P	'sɛrn-une	'sɛrn-ɔnde	'sir-une	'sir-θ-une
PAST	1S	'ɛ-sɛrn-a	sɛr'n-ɔmuna	'ɛ-sir-a	'sir-θ-ik-a
	2S	'ɛ-sɛrn-ɛs	sɛr'n-ɔsuna	'ɛ-sir-ɛs	'sir-θ-ik-ɛs
	3S	'ɛ-sɛrn-ɛ	sɛr'n-ɔtanɛ	'ɛ-sir-ɛ	'sir-θ-ik-ɛ
	1P	'sɛrn-amɛ	sɛr'n-ɔmastan	'sir-amɛ	'sir-θ-ik-amɛ
	2P	'sɛrn-atɛ	sɛr'n-ɔsastan	'sir-atɛ	'sir-θ-ik-atɛ
	3P	'sɛrn-anɛ	'sɛrn-ɔndan	'sir-anɛ	'sir-θ-ik-anɛ

Table 2: Paradigm of the verb *'sɛrnɔ* 'I drag'

- (9) sir -θ -ik -ɛ
 $\sqrt{\text{DRAG}}$ NONACTIVE PERFECTIVE PAST.3SG
 'He/She/It was dragged'

It would therefore seem that, given Merchant's assumptions about the Greek verb, adjacency as a necessary condition for allomorphy should be abandoned altogether: both

⁶Default ASs (e.g. the stem *spɛrn-* from the verb for 'sow') are not problematic for Span Adjacency. Since defaults appear when other rules have failed to apply, the occurrence of a default AS is not the result of a rule that makes reference to both the root and Aspect features, but just to the root. In cases like Table 2, however, where the paradigm is divided between two ASs, only one of the ASs can be default.

In the next section, we show that the assumptions about the structure of the Greek verb require reconsideration, before reaching any conclusions about the locality of allomorphy.

3.1 Alternative structures for the Greek verb

(10) $\begin{array}{c} \text{ASP/VCE} \\ \diagdown \quad \diagup \\ \sqrt{\text{ROOT}} \quad \text{ASP/VCE} \end{array}$

(i) a. $\sqrt{\text{TIE}} \leftrightarrow \partial \varepsilon / \text{---Voice PFV}$ (Merchant, 2015, 284, ex. 23)
 b. $\sqrt{\text{TIE}} \leftrightarrow \partial \varepsilon n$

8

The reason researchers have opted for (10) seems to be that segmentation of Greek synthetic verbal forms does not conclusively point to any type of ordering between the two categories (Smirniotopoulos, 1991; Joseph and Smirniotopoulos, 1993; Kratzer, 1996; Gerlach, 1998; Galani, 2005). Recall that Merchant assumes that *-θ* and *-ik* are exponents of Nonactive and Perfective respectively.⁹ Descriptively, *-θ* only occurs in Nonactive Perfective contexts, while *-ik* occurs in all and only Nonactive Perfective Past contexts. Since both *-θ* and *-ik* refer to both Aspect and Voice features, their co-occurrence does not provide evidence for a particular order between the two categories. In fact, the co-occurrence of these affixes does not even provide evidence for Aspect and Voice being located on separate heads. The reason is that, whereas *-θ* refers to Voice and Aspect features exclusively, *-ik* additionally refers to Tense features, and it may therefore be assumed that *-ik* is a (primary) exponent of Past, i.e. of neither Aspect nor Voice (Koutsoudas, 1962; Warburton, 1973; Gerlach, 1998; Spyropoulos and Revithiadou, 2009; Manzini et al., 2016).

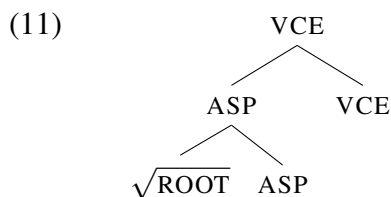
Others have assumed that the Greek verb involves a structure where Voice and Aspect are separate heads with the root more local to the Aspect head than to the Voice head, as in (11). (Hamp, 1961; Philippaki-Warburton, 1970, 1998; Galani, 2005).¹⁰

⁹Though this segmentation has been attributed to Rivero (1990) in much of the literature (Joseph and Smirniotopoulos, 1993; Gerlach, 1998; Galani, 2005; Merchant, 2015), Rivero does not make any explicit claim about segmentation. In fact, her claims seem to be consistent with alternative segmentations.

¹⁰Merchant himself briefly entertains and dismisses the idea that Aspect and Voice are ordered as in (11):

One could try to propose that aspect in fact is closer to the stem than voice, as Hamp 1961 and Warburton 1970 do, but this would have several problems: first, it would be incompatible with standard compositional semantic analyses; second, it would seem to conflate view-point aspect with lexical aspect; third, it would not ameliorate the difficulty for Embick's proposals—all it would do is reverse the two heads that are jointly needed to condition the alternations. (Merchant, 2015, 284-285)

The reasons Merchant provides for dismissing this structure do not seem to us to be compelling. First, if Voice features are not semantically contentful, which is the position taken by most of the recent literature, the position of Voice should not affect semantic composition. Second, that Greek ‘view-point’ Aspect should be allowed to sometimes be lexically restricted is probably desirable (see section on Aspect selection). Finally, whether it would or would not ameliorate the difficulty of Embick’s proposals would depend on how one segments the Greek verb, and the morph-feature mapping one decides to assume, which is, as we see in the present section, non-trivial.



The reason for assuming (11) seems to be the ability of Aspect to interact with the root in stem allomorphy, as the excerpt from Philippaki-Warbuton (1998, 162) indicates.¹¹

Aspect is placed nearest to the root because it affects the verb morphology more centrally, often causing internal stem modification (imperfective: per-n-o ‘I am taking’, perfective: tha par-o ‘I will take’, pir-a ‘I took’, imperfective: fevgo ‘I am leaving’ perfective: tha fig-o, ‘I will leave’ etc.). [...] It is further proposed that Voice follows Aspect, unlike the view in Rivero (1990) where these two categories are in the reverse order, i.e., Voice before Aspect.

Given that the very cases that Merchant (2015) presents as problematic for the locality of allomorphy have been actually taken to be evidence for an alternative structure to the one he assumes, one should revisit the arguments that have led to the structure assumed by Merchant to be gin with. For that, we now turn to Rivero (1990).¹²

3.2 Revisiting Rivero (1990)

Rivero (1990) argues that Greek Voice is a head distinct from of other inflectional heads of Greek, and that moreover, this head is more local to the root than the Aspect head, i.e.

¹¹While there are ASs and AVSs in Greek, there are no Voice Stems (VSs), i.e. stem allomorphs whose occurrence is determined by the root and Voice features without implicating Aspect. Notice that the structure in (11) combined with Span Adjacency predicts this fact. See, however, section 4 for an argument against (11), based on selection patterns. See also section 5 for discussion on the absence of VSs.

¹²Note that the postulating a mapping from syntactic structure to the surface order of Greek verbal suffixes has been so troublesome for some researchers that they have been led to claim that the Greek verb provides evidence for abandoning the Item and Arrangement model of Morphology altogether (Matthews, 1967; Daltas, 1979; Smirniotopoulos, 1991; Joseph and Smirniotopoulos, 1993)

she explicitly argues for the structure assumed by Merchant. Her empirical argument is based on the Perfect, a periphrastic construction that involves the auxiliary 'εχῶ 'I have', inflected for Tense and Agreement features, followed by the main verb (or 'verbal participle') bearing fixed Perfective Nonpast 3rd Singular inflection and variable inflection for Voice. Table 3 illustrates with the familiar verb 'sow'.

	ACTIVE		NONACTIVE	
NONPAST	'εχ-ῶ	'spir-i	'εχ-ῶ	spar-'θ-i
	'εχ-ῖς	'spir-i	'εχ-ῖς	spar-'θ-i
	'εχ-ι	'spir-i	'εχ-ι	spar-'θ-i
	'εχ-υμε	'spir-i	'εχ-υμε	spar-'θ-i
	'εχ-ετε	'spir-i	'εχ-ετε	spar-'θ-i
	'εχ-υνε	'spir-i	'εχ-υνε	spar-'θ-i
PAST	'ix-a	'spir-i	'ix-a	spar-'θ-i
	'ix-ες	'spir-i	'ix-ες	spar-'θ-i
	'ix-ε	'spir-i	'ix-ε	spar-'θ-i
	'ix-αμε	'spir-i	'ix-αμε	spar-'θ-i
	'ix-ατε	'spir-i	'ix-ατε	spar-'θ-i
	'ix-ανε	'spir-i	'ix-ανε	spar-'θ-i

Table 3: Perfect forms of the verb 'σπέρνω 'I sow'

Her argument is based on certain assumptions about this construction. First, she assumes that there exists a feature PERFECT, responsible for the meaning of the Perfect construction, and that this feature is a value of the category Aspect, just like Perfective and Imperfective. Second, she assumes that the feature Perfect is realized by the auxiliary. Finally, she assumes that the exponent -θ on the verbal participle is an exponent of the Voice feature Nonactive. Given these assumptions, the reasoning is straightforward: Since in Nonactive Perfect constructions -θ surfaces closer to the root than the auxiliary, Voice must be closer to the root than Aspect is.

Notice, that Rivero's use of the term 'Aspect' is broader than what we have been taking 'Aspect' to be thus far: Whereas we have been using the term to refer to the category

including only Perfective and Imperfective, Rivero uses the term to refer to a category that has an additional value, namely, Perfect. The assumption that there exists in Greek a category such as the one envisaged by Rivero is perhaps initially justified by the observation that the Perfective-Imperfective distinction is unavailable in the Greek Perfect construction—the ‘verbal participle’ is always both morphologically and semantically Perfective. In this respect, Greek contrasts with other languages such as English, where Aspect alternations *are* available in Perfect constructions, e.g. ‘I have sown’ vs ‘I have been sowing’ (Iatridou et al., 2001), in that Greek has no way of expressing the counterpart of ‘I have been sowing’ by using a Perfect construction.¹³ One could therefore use the fact that Perfect is in complementary distribution with the feature Imperfective to support an analysis whereby Perfect is, just like Imperfective, a value of the category Aspect. There is, however, both morphological and semantic reasons to believe that the feature Perfect does not substitute for but co-occurs with the feature Perfective in Greek Perfect constructions.

The morphological evidence comes from the fact that ‘verbal participles’ in Perfect constructions are identical to Perfective Nonpast 3rd Person Singular synthetic forms. These forms include exponents whose insertion requires reference to the feature Perfective, e.g. stem allomorphs *spir-* and *spar-*, as well as exponents like *-θ* (for the same point see also Gerlach, 1998). This suggests that Perfective must be present *somewhere* in the representations of Perfects, as much as it is in Perfective synthetic forms. Moreover, ‘defective’ verbs such as *εχῶ* (‘I have’), *κσερῶ* (‘I know’), *τρεμῶ* (‘I shiver’), *ιμῆ* (‘I am’) among others, that do not have Perfective synthetic forms, also don’t participate in Perfect constructions, i.e. there is no way of forming the counterpart of the English ‘I have had/been/known/shivered’ in Greek. If Perfective is present in Perfects, we can straightforwardly predict the fact that roots that are incompatible with Perfective to begin with, i.e. ‘defective’ verbs, could not form verbal participles in Perfect constructions.

¹³One would use Imperfective Nonpast forms combined with a *since*-adverbial to convey this meaning.

The semantic evidence comes from the fact that ‘Universal Perfect’ readings are unavailable in Greek but available in languages like English and Bulgarian (Iatridou et al., 2001).¹⁴ According to these authors, assuming that Perfective (‘boundedness’) is an integral part of the meaning of the Greek Perfect allows us to predict the impossibility of the relevant reading in Greek.

We can thus conclude that we are better off abandoning Rivero’s assumption that Perfect is a feature of the same category as Perfective and Imperfective. A better characterization of the feature Perfect (at least for Greek) would be one where the latter is located on a head *independent* of the Aspect head, and that it selects for (or combines with) a particular Aspect, namely Perfective.

Once we accept that Greek Perfect constructions are decomposed into Perfect and Perfective, as Iatridou et al. (2001) propose, Rivero’s claim about the ordering of Voice and Aspect requires re-evaluation: even if one were to concede that Perfect is expounded by the auxiliary, and that $-\theta$ is an exponent of Nonactive, the fact that the auxiliary surfaces further from the root than $-\theta$ does not entail that Aspect is less local to the root than Voice is, simply because Perfect is not an Aspect in the sense that is relevant.

One could still potentially appeal to Perfect constructions as evidence for the order between Voice and Aspect, if only there was any indication that (along with Perfect), Perfective, in Perfect constructions, is also located on the auxiliary and not on the verbal participle. However, there are reasons for which Perfective should be taken to be represented on the verbal participle in Perfect constructions. Let us now turn to these reasons.

First, recall that the forms of the verbal participles in Perfect constructions are identical to Perfective Nonpast 3rd Person Singular synthetic forms. If Perfective is taken

¹⁴Iatridou et al. (2001, 155) describe the Universal Perfect reading as conveying ‘the meaning that the predicate holds throughout some interval stretching from a certain point in the past up to the present.’ For example, the English sentence ‘I have been sick since 1990’ can mean ‘I have been sick for the entire interval spanning from 1990 to today.’

to be represented in the participle, participle forms can be analyzed with the exact same mapping rules that give rise to Perfective Nonpast 3rd Singular synthetic forms, whereas if Perfective is exceptionally represented (exclusively) on the auxiliary in the Perfect, one would need to account for how the different structures of the participle (which would supposedly lack Perfective) and Perfective synthetic forms yield identical surface forms.

Second, the root *ex-* which lexicalizes the auxiliary is itself a ‘defective’ verb, i.e. it does not have Perfective forms. That a root which is incompatible with Perfective actually lexicalizes this feature in its capacity as an auxiliary seems quite unlikely.

Third, Tense features, that are uncontroversially located on the auxiliary, are not local enough to the root of the participle for allomorphic interactions. The stem *pir-* of the verb *‘perno* (‘I take’) in Table 4 is contingent (at least) on the presence of the feature Past.

		IMPERFECTIVE		PERFECTIVE	
		ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
NONPAST	1S	‘pern-ɔ	‘pern-ɔmɛ	‘par-ɔ	par-‘θ-ɔ
	2S	‘pern-is	‘pern-ɛsɛ	‘par-is	par-‘θ-is
	3S	‘pern-i	‘pern-ɛtɛ	‘par-i	par-‘θ-i
	1P	‘pern-umɛ	per’n-ɔmastɛ	‘par-umɛ	par-‘θ-umɛ
	2P	‘pern-ɛtɛ	per’n-ɔsastɛ	‘par-ɛtɛ	par-‘θ-ite
	3P	‘pern-unɛ	‘pern-ɔndɛ	‘par-unɛ	par-‘θ-unɛ
PAST	1S	‘ɛ-pern-a	per’n-ɔmun	‘pir-a	‘par-θ-ik-a
	2S	‘ɛ-pern-ɛs	per’n-ɔsun	‘pir-ɛs	‘par-θ-ik-ɛs
	3S	‘ɛ-pern-ɛ	per’n-ɔtane	‘pir-ɛ	p’ar-θ-ik-ɛ
	1P	‘pern-amɛ	per’n-ɔmastan	‘pir-amɛ	par-‘θ-ik-amɛ
	2P	‘pern-atɛ	per’n-ɔsastan	‘pir-atɛ	par-‘θ-ik-atɛ
	3P	‘pern-anɛ	‘pern-ɔndan	‘pir-anɛ	par-‘θ-ik-anɛ

Table 4: Paradigm of the verb *‘perno* ‘I take’

Crucially, as can be seen in Table 5, Past is not accessible to the root in Perfect constructions; if it were, *pir-* would also show up on the Active participle of the Past Perfect, contrary to fact. What we see on the participle instead is the stem *par-*, the Perfective stem allomorph, across tenses. The impossibility of allomorphic interaction between Tense and

the root in Perfect constructions contrasts with the fact that interactions between the root and Aspect are unaffected by this periphrasis, as is evident from Table 3. With Aspect represented on the participle and Tense on the auxiliary, this difference in locality effects is predicted, if allomorphy cannot be triggered across word boundaries, as argued for in Bobaljik (2012).

	ACTIVE		NONACTIVE	
NONPAST	'EX-ɔ	'par-i	'EX-ɔ	par-'θ-i
	'EX-is	'par-i	'EX-is	par-'θ-i
	'EX-i	'par-i	'EX-i	par-'θ-i
	'EX-umε	'par-i	'EX-umε	par-'θ-i
	'EX-ετε	'par-i	'EX-ετε	par-'θ-i
	'EX-une	'par-i	'EX-une	par-'θ-i
PAST	'ix-a	'par-i	'ix-a	par-'θ-i
	'ix-εs	'par-i	'ix-εs	par-'θ-i
	'ix-ε	'par-i	'ix-ε	par-'θ-i
	'ix-amε	'par-i	'ix-amε	par-'θ-i
	'ix-atε	'par-i	'ix-atε	par-'θ-i
	'ix-anε	'par-i	'ix-anε	par-'θ-i

Table 5: Perfect forms of the verb *perno* ‘I take’

Thus, while the feature Perfect seems to indeed be encoded on the auxiliary, both Perfective and Voice features are best thought of as being encoded on the verbal participle in Greek Perfect constructions, as in (12).¹⁵

- (12) a. Auxiliary hosts (at least) Perfect, Tense and Subject features.
b. Participle hosts (at least) the root, Aspect and Voice features.

¹⁵We wish to remain agnostic about why and how this periphrastic construction comes about—whatever the theory of auxiliaries might be, it would have to account for the picture that we have sketched out in (12). We do not exclude the idea that the Greek Perfect construction actually involves restructuring, i.e. that the Perfect feature is in fact a verbal predicate that takes a tenseless clause as its complement. We think that this might be a plausible analysis for the structure at hand, given that what we have been calling ‘verbal participles’ are morphologically identical to the Perfective Nonpast 3rd Singular synthetic forms, just as verbal forms embedded under restructuring verbs in the language are. How the Greek Perfect construction fits into the theory of auxiliaries is, however, something that requires more careful consideration than can be given in the present paper.

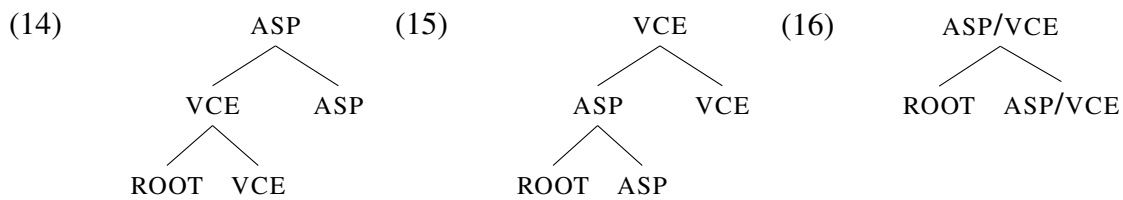
This means that the surface order of elements in the Perfect construction cannot be used as evidence for the arrangement between Aspect and Voice, any more than the surface order of elements in synthetic verbal forms can, i.e. Rivero’s appeal to the Perfect construction to argue for a structure where Voice and Aspect are ordered with Voice more locally to the root seems misguided. As we have seen earlier in this section, not only does surface order in synthetic forms not provide evidence for a particular relative order between Voice and Aspect, but it doesn’t even provide evidence that the two categories are ordered at all relative to each other to begin with. In fact, given the Greek synthetic forms, under the most conservative approach, a learner would not posit any ordering between Voice and Aspect, positing instead a structure where Aspect and Voice features are bundled together onto the same node, in accordance with the proposals in Koutsoudas (1962); Warburton (1973); Gerlach (1998); Christopoulos and Petrosino (2018).

4 Independent evidence for bundling: Paradigm gaps

We have now shown that surface order of exponents does not provide any evidence for Aspect and Voice features being located on different heads in Greek. In the present section, we show that (13) is also problematic for the locality of selection more generally. Greek verbal paradigms, as in other languages, are not always complete for every verb; there are some verbs that lack certain paradigmatic forms. Taking these gaps to be revealing restrictions on roots about what features they combine with, in this section, we argue that, aside from the lack of positive exponence-based evidence for (13) the latter turns out to also be independently problematic for the locality of selection, and that we are therefore better off abandoning it (for Greek, at least).

- (13) The head hosting Voice features is distinct from the head hosting Aspect features.

Given (13), either (14) or (15) must be correct. These structures make different predictions as regards possible selectional interactions between lexical roots and Aspect/Voice features. Specifically, Voice and the root should, but Aspect and the root should not be able to interact in terms of selection under (14), just as Aspect and the root should, but Voice and the root should not be able to interact under (15). As we shall see, the empirical fact is that both Voice and Aspect can interact with the root for the purposes of selection, which suggests that we have to either abandon the idea that selection is strictly local, or adopt (16). This provides, we argue, a reason independent of exponence-related considerations for rejecting (13) (i.e. both (14) and (15)), and adopting (16) instead.



4.1 Voice selection

While in the paradigms examined so far verbs could occur in either Voice depending on the target meaning, some Greek roots are more selective than others, with regards to the Voice they appear in. In this subsection we go over four types of such verbs.

4.1.1 (Transitive) deponent verbs

A class of transitive verbs called ‘deponent’ is characterized by their only ever occurring with Nonactive morphology, despite the fact that they do not receive reflexive, anticausative or passive interpretation, which are the typical meanings associated with Nonactive morphology (Embick, 1997; Zombolou, 2004; Holton et al., 2012; Zombolou and Alexiadou, 2012; Grestenberger, 2014). Some examples are *oni'revome* (‘I dream of’),

metaxi'rizome ('I use'), *ekmeta'levome* ('I exploit'), *embō'revome* ('I trade'). A partial paradigm of *oni'revome* is given in Table 6. If Nonactive features in deponents is to be located on the same head as they do in regular verbs (which is desirable, given the identity between Nonactive morphology in deponents and elsewhere), in order to maintain strict locality in selection, the assumed structure should be either (14) or (16), but not (15).¹⁶

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	—	oni'rev-ome	—	oniref-'t-o
2S	—	oni'rev-esē	—	oniref-'t-is
3S	—	oni'rev-ete	—	oniref-'t-i
1P	—	onire'v-omaste	—	oniref-'t-ume
2P	—	onire'v-osaste	—	oniref-'t-itē
3P	—	oni'rev-onde	—	oniref-'t-une

Table 6: Nonpast paradigm of deponent verb *oni'revome* ('I dream')

4.1.2 (Transitive) active-only verbs

A different class of verbs are selective in the opposite direction, i.e. they only ever occur in the Active, despite the fact that they are transitive and could in principle participate in Voice alternations.¹⁷ Such 'Active-only' verbs include *'spao* ('I break'), *'skaō* ('I burst'), *'ftano* ('I reach'), *taksi'ðevō* ('I travel'), *ike'tevō* ('I beg'), *'skivō* ('I lower/bow'), amongst others (see Alexiadou et al., 2015, 120-121). The paradigm of *'skivō* is given in Table 7. Just like with 'deponents', to account for the existence of 'active-only' paradigms in terms of local selection, the assumed structure should be either (14) or (16), but not (15).

¹⁶Embick (1997) treats deponent roots as possessing the feature Nonactive inherently (see also Grestenberger, 2014). Even if this analysis is correct, this feature would have to be somehow transmitted to the head that regularly hosts Nonactive features, to account for the morphological identity between Nonactive morphology in deponents and that appearing in regular Voice alternations.

¹⁷A reviewer calls our attention to the fact that one of these verbs, namely, *spao* 'I break', seems to show a Nonactive form *spazome*, which can idiomatically mean 'I am being annoyed', even though it cannot have the predicted meaning 'I am being broken' (Alexiadou et al., 2015, 120; fn.34). The reviewer correctly observes that the presence of forms like *spazome* suggest that it is not the form of the root that selects for

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	'skiv-ɔ	—	'skip-s-ɔ	—
2S	'skiv-is	—	'skip-s-is	—
3S	'skiv-i	—	'skip-s-i	—
1P	'skiv-umɛ	—	'skip-s-umɛ	—
2P	'skiv-ɛtɛ	—	'skip-s-ɛtɛ	—
3P	'skiv-unɛ	—	'skip-s-unɛ	—

Table 7: Nonpast paradigm of active-only verb ‘*skivɔ*’ (I lower/bow)

4.1.3 Semi-deponents

A third class of verbs that includes *anɛ'vɛnɔ* (‘I go up’), *katɛ'vɛnɔ* (‘I go down’), *siŋ'xɛɔ* (‘I congratulate’) are deponent only in the Perfective (Table 8).¹⁸ These roots place a restriction on the Voice they combine with only when the Aspect is Perfective. In order to account for the existence of such verbs in terms of strictly local selection, the head hosting Voice features needs to be structurally adjacent to both the root and the Aspect head, i.e. the assumed structure should again be either (14) or (16), but not (15).

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	siŋ'xɛɪ-ɔ	siŋ'xɛɪ-ɔmɛ	—	siŋxa'r-ɔ
2S	siŋ'xɛɪ-is	siŋ'xɛɪ-ɛsɛ	—	siŋxa'r-is
3S	siŋ'xɛɪ-i	siŋ'xɛɪ-ɛtɛ	—	siŋxa'r-i
1P	siŋ'xɛɪ-umɛ	siŋ'xɛɪ-ɔmastɛ	—	siŋxa'r-umɛ
2P	siŋ'xɛɪ-ɛtɛ	siŋ'xɛɪ-ɔsastɛ	—	siŋxa'r-itɛ
3P	siŋ'xɛɪ-unɛ	siŋ'xɛɪ-ɔndɛ	—	siŋxa'r-unɛ

Table 8: Nonpast paradigm of semi-deponent verb *siŋ'xɛɔ* (‘I congratulate’)

Active features, but the (non-idiomatic) meaning of the root.

¹⁸Semi-deponent verbs have ‘athetic’ Nonactive forms, i.e. they lack the characteristic *-θ*. That their morphology is Nonactive and not Active is evident by in their final stress pattern, the desinence of the second person plural, as well as from the past paradigm not presented here, which features the characteristic *-ik* of the Nonactive Perfective Past, i.e. *a'nevika* (‘I went up’), *siŋ'xarika* (‘I congratulated’).

4.1.4 Split-Voice verbs

A fourth class of verbs comprises of those that occur in a different Voice in each Aspect. The verb *kaθɔmɛ* ('I sit'), *jɪnɔmɛ* ('I become') and *ɛrxɔmɛ* ('I come') for example, are deponent in the Imperfective and active-only in the Perfective (Table 9). Since, in this type of selection, the Voice head must have access to both the root and the head hosting Aspect features (just like with Semi-deponents), modelling selection in terms of strict locality is consistent with (14) and (16), but not with (15).

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	—	'kaθ-ɔmɛ	ka'θ-is-ɔ	—
2S	—	'kaθ-ɛsɛ	ka'θ-is-is	—
3S	—	'kaθ-ɛtɛ	ka'θ-is-i	—
1P	—	ka'θ-ɔmastɛ	ka'θ-is-umɛ	—
2P	—	ka'θ-ɔsastɛ	ka'θ-is-ɛtɛ	—
3P	—	'kaθ-ɔndɛ	ka'θ-is-unɛ	—

Table 9: Nonpast paradigm of split-Voice verb *kaθɔmɛ* ('I sit')

4.2 Aspect selection

As already mentioned in connection to the Perfect, Greek verbs can also be selective about the Aspect they combine with. The verbs called 'defective' never occur in the Perfective. This class includes *ɔ'filɔ* ('I owe'), *xrɔs'tɔ* (also 'I owe'), *'xaskɔ* ('I gape'), *a'nikɔ* ('I belong'), *'trɛmɔ* ('I tremble'), *'pasxɔ* ('I suffer') (Holton et al., 2012). The paradigm of the verb *ɔ'filɔ* is given in Table 10.¹⁹ If such selection requires the Aspect head to be

¹⁹The inability of these verbs to combine with Perfective is not the result of morphological neutralization. Firstly, defective verbs lack Perfective forms in both Active and Nonactive, in contrast to verbs like *mɔlinɔ* ('I pollute') which only show neutralization of Aspect morphology in the Active. Second, as we have seen, defective verbs cannot participate in constructions that require semantically active Perfective, i.e. **'ɛxɔ ɔ'fili* (Intended: 'I have owed'), but verbs like *mɔ'linɔ* can: *'ɛxɔ mɔ'lini* ('I have polluted'), even though neither of these verbs makes a morphological aspect distinction in the Active. This suggests that defective verbs simply cannot combine with Perfective aspect.

strictly local to the root, the assumed structure should be either (15) or (16), but not (14).

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	ɔ'fil-ɔ	ɔ'fil-ɔmɛ	—	—
2S	ɔ'fil-is	ɔ'fil-ɛsɛ	—	—
3S	ɔ'fil-i	ɔ'fil-ɛtɛ	—	—
1P	ɔ'fil-umɛ	ɔ'fi'l-ɔmaste	—	—
2P	ɔ'fil-ɛtɛ	ɔ'fi'l-ɔsaste	—	—
3P	ɔ'fil-unɛ	ɔ'fil-ɔnde	—	—

Table 10: Nonpast paradigm of defective verb *ɔ'filɔ* ('I owe')

4.3 Double selection

Finally, there are transitive verbs that are selective for both the Aspect and Voice they combine with. The verbs *apɛx'tanɔmɛ* ('I loathe') and *ðikɛ'umɛ* ('I am entitled to') are both defective and deponent, whereas the verbs *ak'sizɔ* ('I deserve') and *'ɛxɔ* ('I have') are both defective and active-only (see Table 11 for a sample paradigm). Modelling doubly-selective verbs in terms of strictly local selection would be challenging if we assumed either (14) or (15), but not if we assumed (16).

	IMPERFECTIVE		PERFECTIVE	
	ACTIVE	NONACTIVE	ACTIVE	NONACTIVE
1S	—	apɛx'tan-ɔmɛ	—	—
2S	—	apɛx'tan-ɛsɛ	—	—
3S	—	apɛx'tan-ɛtɛ	—	—
1P	—	apɛxθa'n-ɔmaste	—	—
2P	—	apɛxθa'n-ɔsaste	—	—
3P	—	apɛx'tan-ɔnde	—	—

Table 11: Nonpast paradigm of defective deponent verb *apɛx'tanɔmɛ* ('I loathe')

4.4 Conclusions based on paradigm gaps

In this section, we have shown that, the assumption that Voice and Aspect features are located on distinct heads (whether it is implemented as (14) or (15)), faces problems when it comes to modelling paradigm gaps as selection effects. If, on the other hand, Voice and Aspect features are located on the same head, as in (16), the selectional patterns reviewed in the present section raise no locality issues (see Table 12 for a summary of this section). We take this state of affairs to be providing an independent argument for bundling Voice and Aspect onto a single node morphosyntactically.

Class of verb	Structure (14)	Structure (15)	Structure (16)
Deponent	local	non-local	local
Active-only	local	non-local	local
Semi-deponent	local	non-local	local
Split-Voice	local	non-local	local
Doubly selective	non-local	non-local	local
Defective	non-local	local	local

Table 12: Selection in different classes of verbs under different structures

5 The ‘parasitic’ nature of Greek Voice morphology

We have shown that there are stems that are determined by the root and Aspect (ASs), as well as the root, Aspect and Voice (AVSs). The bundling structure predicts that it should also be possible to encounter Voice Stems, i.e. stems determined by the root and Voice features cross-cutting Aspects, which, however, is not attested in Greek (see fn.11). If both Aspect and Voice features are equidistant from the root, why should this asymmetry arise? The observation that the root and Voice never interact for the purposes of stem allomorphy without also implicating Aspect features seems to be part of a larger generalization in Greek, namely, that for the purposes of exponence, Voice does not interact

with *anything* without implicating Aspect: any exponent that occurs only in one of the Voices, also occurs in only one of the Aspects. The special series of agreement markers *ομε, εσε, ετε...*etc., that only occur in the Nonactive, we only see in the Imperfective, while the affixes *-θ* and *-ικ*, which also only occur in the Nonactive, we only see in the Perfective (Roussou (2009); Manzini et al. (2016)).²⁰ The generalization that emerges is given in (17).²¹

(17) *Greek parasitic Voice:*

No rule of exponence refers to Voice unless it also refers to Aspect.

What is it about the Greek Voice system that might explain (17)?²² We briefly review two current approaches to the Greek Voice system in light of (17). We show that (17) is hard to capture in either of these approaches, because of a crucial property they share: they both take Nonactive forms to be sharing Voice features across Aspects.

One approach, first formulated in Embick (1997) but also found in later works, takes Nonactive morphology to be the result of the assignment of a feature NACT in contexts where no external argument is projected, while Active forms are taken to be those where NACT is not assigned. (Embick, 2004; Alexiadou, 2014; Grestenberger, 2014; Alexiadou et al., 2015).²³ Crucially, this approach takes Nonactive morphology to be uniformly

²⁰Smirniotopoulos (1991, 180) reports that “neither the exponence of aspect nor that of voice can be completely expressed without reference to the other category”. Her bidirectional statement is evidently too strong, since there are exponents whose occurrence is determined by reference to Aspect features and the root, without reference to Voice features, namely, ASs.

²¹Notice that the generalization in (17) holds independently of what one takes each of these exponents to be realizing, e.g. of whether *-θ* is a ‘primary’ exponent of Nonactive, of Perfective or of both, for even if one takes *-θ* to be the primary exponent of Nonactive, one would still need to somehow specify, perhaps via ‘secondary’ specification, that *-θ* will only occur in Perfective contexts only. Thanks to an anonymous reviewer for encouraging clarification of this point.

²²Our cursory review of exponence patterns in languages with Voice systems similar to the Greek, e.g. Latin (Embick, 2000) and Albanian (Roussou, 2009; Manzini et al., 2016) suggests that generalizations like (17) might also hold for these.

²³See Alexiadou and Anagnostopoulou (2004); Angelopoulos et al. (2020) for potential problems with the assumption that the context triggering the insertion of NACT is the absence of an external argument.

realizing the *same* feature, i.e. NACT, in both Imperfective and Perfective contexts. Under this approach, (17) appears to be a mystery, since there is nothing preventing exponence from referencing NACT in isolation.

A different approach, taken by Roussou (2009); Manzini et al. (2016), also takes Nonactive morphology to arise uniformly in the same syntactic environment, namely, those in which the internal argument O is also the subject of the clause S. Unlike the first approach, these authors take the different pieces of Nonactive morphology to be realizing different features: the special agreement series found in the Imperfective realizes the internal argument *qua* subject (i.e. both the features O and S), while the affix *-θ* found in the Perfective realizes the internal argument *qua* internal argument (i.e. just the feature O). (17) remains mysterious even under this approach, since, again, nothing prevents exponence from making reference to the feature O, across aspects.

In order to ensure (17), what seems to be necessary is that the feature sets inserted into the structure in the Perfective, and that inserted in the Imperfective *do not intersect*. Suppose, for example, that the structural context that gives rise to the Nonactive is one where an O argument becomes an S argument, as argued in Roussou (2009); Manzini et al. (2016). Suppose further, that this process is marked by assigning an S feature to the Aspect head in the Imperfective, and an O feature in the Perfective. This would ensure that there is no uniform Voice feature, such that exponence could pick out across Aspects. Any reference to either S or O would necessarily appear to be implicating a specific Aspect. While we content that an account of Greek Voice with the ‘no-Voice-feature’ property is desirable, we leave the assessment of the plausibility of such an account for the future.²⁴

²⁴Generalizations of the type ‘No rule of exponence refers to X unless it also refers to Y’ are perhaps more ubiquitous than one might have thought. For example, Person/Number agreement features in both Greek and English verbs seem to be parasitic on Tense features in a similar way that Greek Voice features are parasitic on Aspect features. A potential correlate of parasitic behavior might be ‘dissociation’: “A morpheme will be called dissociated when the morphosyntactic position/features it instantiates are not features

6 Conclusion

We have closely examined verbal stem allomorphy patterns in Modern Greek, a domain which has been argued by Merchant (2015) to provide counterexamples to the strict locality condition proposed in Embick (2010), in the form of stem allomorphs conditioned by three elements: the root, the Aspect head and the Voice head, all at once. We have argued that the existence of such stems ceases to pose a problem for Embick, once we recognise that, (at least) in Greek, Aspect and Voice features are located on the very same head.²⁵

figuring in the syntactic computation, but are instead added in the Morphological component under particular structural conditions” (Embick, 1997, 8), a property shared by Greek Voice and English Agreement.

²⁵A reviewer calls our attention to claims in the literature that the triggering of idiosyncratic meanings, should have similar locality conditions to those imposed on the triggering of idiosyncratic forms, i.e. allomorphy (Marantz, 2013; Anagnostopoulou and Samioti, 2013). In Greek, idiosyncratic meanings of verbal roots may arise when the roots combine with animate internal arguments. These meanings may be restricted to one of the Voices, as shown in (i), though they don’t have to be, as shown in (ii). The fact that a particular Voice may condition the occurrence of idiosyncratic meanings, potentially constitutes another argument for its ‘closeness’ to the root.

- (i) a. i ma'fjɔzi ka'θarisan tin maria
the.NOM mobsters.NOM CLEAN.ACT.PFV.PST.3PL the.ACC Maria.ACC
Possible reading: ‘The mobsters killed Maria’
b. i maria kaθa'ristike (apo tus ma'fjɔzus)
the.NOM Maria.NOM clean.NACT.PFV.PST from the.ACC mobsters.ACC
Impossible reading: ‘Maria was killed by the mobsters’
- (ii) a. ɔ janis 'epsise tin maria na vyune
the.NOM John.NOM cook.ACT.PFV.PST.3SG the.ACC Maria.ACC NA go.out.NPST.PFV.3PL
‘John made Maria want to go out with him’
b. i maria 'psiθike na vyune
the.NOM Maria.NOM cook.NACT.PFV.PST.3SG NA go.out.NPST.PFV.3PL
‘Maria was made to want to go out with him’

In contrast, the reviewer points out, there do not seem to be idiosyncratic meanings conditioned by Aspect. Why should that be? We think that this may be suggestive of a privileged relation between Greek Voice alternations and the position/thematic role of the internal argument (see e.g. Roussou, 2009; Manzini et al., 2016). Of course, we are reluctant to draw any definite conclusions about the relation between roots, Aspect and Voice based on the distribution of idiosyncratic interpretations, as we do with allomorphy, until we have investigated the matter more thoroughly. It bears mentioning, however, that the way the term ‘Voice’ is used in this paper to describe a morphological alternation should be kept distinct from how the term is used elsewhere in the literature to refer to the position where external arguments are merged (Kratzer, 1996; Anagnostopoulou, 2003; Anagnostopoulou and Samioti, 2013; Alexiadou et al., 2015). Though these may well end up being related, we do not assume they are, especially since, as discussed in this last section, the question of what exactly causes morphological Voice alternations in languages like Greek is still open.

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