0 Background

0.1 Allomorphy

- Alternations in the surface forms of a morphosyntactic feature depending on the morphosyntactic and/or (morpho)-phonological context in which the features occurs:

\[(1)\]
\[\begin{align*}
\text{x} & \rightarrow \alpha \\
\text{y} & \rightarrow \beta / \gamma
\end{align*}\]

Broader questions:

1. What are grammatical restrictions imposed on the conditioning of allomorphy?
2. Do all kinds of allomorphic alternations obey the same restrictions?

0.2 Two theories of the locality of allomorphy

- Distributed Morphology (Halle and Marantz, 1993)
  - syntax only manipulates abstract morpho-syntactic features.
  - phonological material is subsequently added to the derivation via rules of exponence (Vocabulary Insertion)

- Spell-Out
  - Vocabulary Insertion
  - PF

(2) Linear Adjacency Hypothesis (LAH; Embick, 2010)
Contextual allomorphy is possible only with elements that are concatenated.

\[\rightarrow \text{Node } n_i \text{ can interact with node } n_j \text{ iff all intervening nodes } n_k \text{ have } \emptyset \text{ exponence.}\]

(3) a. ✓
   b. ×
   c. ×

(5) a. ✓
   b. ×
   c. ✓

(4) Span Adjacency Hypothesis (SAH; Merchant, 2015, p. 294)

a. Allomorphy is conditioned only by an adjacent span.
b. A span is a "complement sequence of heads [...] in a single extended projection" (Svenonius, 2012, p. 1).
   - only an ordered n-tuple of contiguous nodes can be a span.
   - every node is a (trivial) span.

\[\rightarrow \text{Node } n_i \text{ can interact with node } n_j \text{ iff all intervening nodes } n_k \text{ form a span adjacent to } n_l.\]

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1 According to Embick (2010) and others, the trigger and target of allomorphy must both also be within the same structural domain. This is not a point on which the two theories we present vary.
0.3 Goals of the talk

1. To identify a contradiction in the argumentation of Merchant (2015) that is resolved by changing his assumption about the structural order between Aspect and Voice in the Greek verbal structure.

2. To provide evidence for the plausibility of this change of assumption.

3. To show that with the new structural assumption, Greek root allomorphy shows both span-adjacency-effects and linear-adjacency-effects.

4. To propose a system that reconciles the two types of locality effects.

1 Span-adjacency instead of linear-adjacency?

1.1 Merchant, 2015

- Merchant (2015): Embick (2010)'s LAH (2) can't account for Greek verbal morphology.
- Assume the structure for the Greek verb in (6), following Rivero (1990):

\[
(6) \quad T \rightarrow \text{Asp} \rightarrow \text{Voice} \rightarrow \sqrt{\text{root}} \rightarrow v
\]

- Merchant’s observation A:
  pfv in (7) seems to condition allomorphy across an overt nact exponent. This poses a challenge for the idea that allomorphy can only be conditioned under linear adjacency.

\[
(7) \quad \text{sir} \cdot \theta \cdot \text{ik} \cdot e
\]

- Merchant’s observation B:
  In Greek, multiple nodes can condition allomorphy at the same time. This also poses a challenge for (Embick, 2010)'s linear adjacency condition (2).

\[
(9) \quad \text{Dar} \cdot \theta \cdot \text{ik} \cdot e
\]
• Merchant (2015)’s proposal

(11) Span adjacency hypothesis (SAH; Merchant, 2015, p. 294)
   a. Allomorphy is conditioned only by an adjacent span.
   b. A span is a “complement sequence of heads [...] in a single extended projection” (Svenonius, 2012, p. 1).
      (i) only an ordered n-tuple of contiguous nodes can be a span.
      (ii) every node is a (trivial) span.

This allows us to:
1. capture why linear adjacency doesn’t seem to matter for the Greek cases
2. understand why multiple nodes can trigger allomorphy simultaneously

<table>
<thead>
<tr>
<th>Predictions of SAH for [[[√root][vce][asp][tns]]]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible spans</td>
</tr>
<tr>
<td>Vce</td>
</tr>
<tr>
<td>Asp Tns</td>
</tr>
<tr>
<td>Vce + Asp Tns</td>
</tr>
<tr>
<td>Vce + Asp + Tns</td>
</tr>
</tbody>
</table>

1.2 A contradiction in Merchant (2015)

• Problem: Aspect can condition allomorphy without the help of Voice:

<table>
<thead>
<tr>
<th>DRAG</th>
<th>IMPERFECTIVE</th>
<th>PERFECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonfast</td>
<td>Active</td>
<td>Nactive</td>
</tr>
<tr>
<td>Fast</td>
<td>ser-</td>
<td>T</td>
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</table>

1. Taking this as allomorphy conditioned by Asp leads to a contradiction in Merchant’s argument.
2. Taking this cases of allomorphy as conditioned by Vce + Asp leads to the loss of any empirical power of SAH (11).

• But: if we assume the reverse order of Aspect and Voice in the structure (as also argued in Galani, 2005):

(12) T
    | Voice
    | Aspect [past/past]
    | [act/nact]
    | [impfv/pfv]

Then SAH successfully captures the Greek data without contradiction:

Next section: evidence from segmentation that Aspect is indeed represented lower than Voice in the Greek structure.

2 Aspect morphology appears lower than Voice morphology in Greek

2.1 What is ik if not pfv?

• No compelling evidence from segmentation that ik is an exponent of pfv:

<table>
<thead>
<tr>
<th>COOK</th>
<th>IMPERFECTIVE</th>
<th>PERFECTIVE</th>
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</thead>
<tbody>
<tr>
<td>Nonpast</td>
<td>Majir-ev-l</td>
<td>Majir-ev-ete</td>
</tr>
<tr>
<td>Past</td>
<td>Majir-ev-s-l</td>
<td>Majir-ev-t-s</td>
</tr>
<tr>
<td>Act</td>
<td>Majir-ev-t-e</td>
<td>Majir-ev-t-i</td>
</tr>
<tr>
<td>Nact</td>
<td>Majir-ev-otan</td>
<td>Majir-ev-t-ik-e</td>
</tr>
</tbody>
</table>

(13) a. Majir-ef-t-ik-e <br>

b. Majir-ef-t-ik-e <br>

It was/has been cooked

We follow Spyropoulos and Revithiadou (2009) that -ik- is an exponent of pst, not of pfv.

2.2 Where does impfv/pfv morphology appear?

• Can we tell from segmentation where aspectual morphology is with respect to voice morphology?
• There are certain classes of verbs where we can see aspectual morphology as an independent exponent.
• Classes where impfv morphology appears to the left of Voice morphology:

These exponents that we claim are exponents of impf have been traditionally taken to be part of the “impfv-stem” (Spyropoulos, Holton, et al., 2012).
3 Span-adjacency-effects with linear-adjacency-effects

3.1 The span adjacency effect

- With the alternative structure proposed here, we (now indeed) observe a span adjacency effect in Greek root allomorphy:
  A feature on node Y can only condition allomorphy on the exponent of node X if all structurally intervening nodes Zs are involved in conditioning allomorphy on X with Y.

### Predictions of SAH for \([\sqrt{\text{root}}|\text{asp}|\text{vce}|\text{tns}]\)

#### Possible spans

<table>
<thead>
<tr>
<th>Possible spans</th>
<th>Possible allomorphy-conditioning spans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asp</td>
<td>✓ Asp</td>
</tr>
<tr>
<td>Vce</td>
<td>✓ Vce</td>
</tr>
<tr>
<td>Tns</td>
<td>✓ Tns</td>
</tr>
<tr>
<td>Asp+Vce</td>
<td>✓ Asp+Vce</td>
</tr>
<tr>
<td>Vce+Tns</td>
<td>✓ Vce+Tns</td>
</tr>
<tr>
<td>Asp+Vce+Tns</td>
<td>✓ Asp+Vce+Tns</td>
</tr>
</tbody>
</table>

### The example from Cypriot Greek foreign root conjugation where impfv morphology appears to the right of verbalizing morphology -ar and to the left of Voice morphology -ete/etun:

<table>
<thead>
<tr>
<th>PARK(C.G)</th>
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<th>PERFECTIVE</th>
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<tbody>
<tr>
<td>3SG</td>
<td>NONPAST</td>
<td>kremp-ar</td>
<td>kremp-ar-te</td>
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</table>

<table>
<thead>
<tr>
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<th>PERFECTIVE</th>
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<tbody>
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<td>3SG</td>
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<td>kremp-ar-te</td>
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<tr>
<td></td>
<td>PAST</td>
<td>e-kremp-ar-isk-etun</td>
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<td>kalip-t-ete</td>
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<tr>
<td></td>
<td>PAST</td>
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<tbody>
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<td>vr-isk-te</td>
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<td></td>
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<td>e-vr-isk-en</td>
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<td>krem-a-te</td>
</tr>
<tr>
<td></td>
<td>PAST</td>
<td>e-krem-a-isk</td>
<td>e-krem-a-isk</td>
</tr>
</tbody>
</table>

- Conclusions:
  - Whenever realized with independent exponents, Aspectual morphology in Greek appears higher than verbalizing morphology and lower than Voice morphology.
  - Assuming now that Aspect is lower than Voice, Merchant (2015)'s SAH is salvaged from unfalsifiability.
3.2 The Linear adjacency effect

- If Asp is lower than Voice (13), then Greek does not provide evidence that allomorphy can be conditioned across an overt interver (contra Merchant, 2015).

By Merchant’s assumption

By the new assumption

- But also: Greek has been shown to possess a number of verbalizing morphology (Spyropoulos, Revithiadou, and Panagiotidis, 2015; Efthymiou, 2015), none of which ever occurs with root-allomorphy.

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But also: Greek has been shown to possess a number of verbalizing morphology (Spyropoulos, Revithiadou, and Panagiotidis, 2015; Efthymiou, 2015), none of which ever occurs with root-allomorphy.

- This generalization is lost in Merchant (2015’s) system, where the overtness of interveners does not play a role in restricting allomorphy.

4 Reconciling the span-adjacency and the linear-adjacency effects

- Assume an Embick-style linear adjacency condition:

Node α can interact with node β iff α, β are local.
α, β are local if no overt node γ intervenes

The structure is linearized (here the symbol ‘–’) as in (18):

4.1 Sample application:

- Vocabulary Insertion matches morphosyntactic features with phonological exponents (Halle and Marantz, 1993), creating sets of morphosyntactic and phonological features as in (19), where \( \sqrt{\text{root}} X, Y \) are morphosyntactic features and α, ∅, γ their phonological exponents:

\[
(19) \quad \{ \sqrt{\text{root}} \} - \{ X \} - \{ Y \} \rightarrow \{ \sqrt{\text{root}} \} - \{ X \} - \{ Y \}
\]

- An operation similar to Embick (2010)’s pruning, cyclically deletes ∅ from left to right:

\[
(20) \quad \{ \sqrt{\text{root}} \} - \{ X \} - \{ Y \} \rightarrow \{ \sqrt{\text{root}} \} - \{ X \} - \{ Y \}
\]

- Stray morphosyntactic features in the set of a pruned ∅ are not deleted; they become an element of the set to its right, as shown in (21). The resulting object is similar to a span, except that it also includes phonological information.

\[
(21) \quad \{ \sqrt{\text{root}} \} - \{ X \} - \{ Y \} \rightarrow \{ \sqrt{\text{root}} \} - \{ X, Y \}
\]

The “rebracketing” that occurs can be thought of as driven by a constraint as in (22):

By the end of the derivation, all morphosyntactic features must be matched to some phonological exponent.

4.1 Sample application:

<table>
<thead>
<tr>
<th>BEAT</th>
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<th>PERFECTIVE</th>
</tr>
</thead>
<tbody>
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<td>NATIVE</td>
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</tr>
<tr>
<td>SNPAST</td>
<td>δet</td>
<td>δet</td>
</tr>
<tr>
<td>PAST</td>
<td>δet</td>
<td>δet</td>
</tr>
</tbody>
</table>

\[
(23) \quad \text{PPV}
\]

a. \( \{ \sqrt{\text{BEAT}} \} - [v] - [\text{PPV}] - [\emptyset] \rightarrow \{ \sqrt{\text{BEAT}} \} - [v] - [\text{PPV}] - [\emptyset] \)

b. MP rule applies:

\[
[e] \rightarrow [i] / \{ \sqrt{\text{root}}(i) \} - [v, \text{PPV}] - [\emptyset]
\]

where \( \sqrt{\text{root}}(i) = [\sqrt{\text{BEAT}}, \sqrt{\emptyset}] \)

c. \( \{ \sqrt{\text{BEAT}} \} - [v, \text{PPV}] - [\emptyset] \)

4.1 Sample application:

\[
(24) \quad \text{PPV.nact}
\]

a. \( \{ \sqrt{\text{BEAT}} \} - [\text{PPV}] - [\text{nact}] - [\emptyset] \rightarrow \{ \sqrt{\text{BEAT}} \} - [\text{PPV}] - [\text{nact}] - [\emptyset] \)

The formalism of the ablaut processes shown here is simplified for the sake of clarity.
b. MP rule applies:

\[[i] \rightarrow [a] / \frac{\text{beat}}{\text{dir}} \quad \left\{ \text{v.pfv.nact} \right\}_{0} \]

where \( \text{beat} = \sqrt{\text{beat}}, \sqrt{\text{beat}} \).

c. \( \frac{\sqrt{\text{beat}}}{\text{dir}} \rightarrow \left\{ \text{v.pfv.nact} \right\}_{0} \)

5 Wrapping up

1. We identified a contradiction in the argumentation of Merchant (2015) that can be resolved by changing his assumption about the structural order between Aspect and Voice in the Greek verbal structure.

2. We provided evidence for the plausibility of this change of assumption.

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References


