"Introduction: (Morpho)syntax versus (Morpho)phonology". In Embick (2010). Localism versus Globalism in Morphology and Phonology.

– The book by Embick focuses on a crucial aspect of theoretical linguistics: the architecture of language, which looks at how the different components of grammar interact with each other and how language is computed.

– There are two conflicting architectural paradigms: globalist and serialist. Optimality Theory (OT) lies on the first group while Distributed Morphology (DM), the theory favoured by Embick, on the second. We will discuss in next sections what we mean by these terms.

1) SOME BASICS

A) Optimality Theory (Prince & Smolensky 1993)

Three basic devices: GEN – EVAL – CON

GEN: Generator
CON: (Set of) Constraints
EVAL: Evaluation

– Given an input, GEN creates all the possible output candidates by altering its original form (this can be done infinitely). The set of constraints, which are universal but particularly ranked in every language, are then evaluated. The optimal candidate wins.
2 families of constraints:

**FAITHFULNESS**: require identity between input and output (this set of constraints is important for preventing the generation of optimally unmarked outputs)

**MARKEDNESS**: impose requirements on the well formedness of the output regarding universal structural tendencies (NOCODA, ONSET, …)

- The most important tenet of OT is that constraints are VIOLABLE.

- It is a parallel theory in the sense that everything is done in a single step. Moreover, phonology can interact with morphology.

**B) Distributed Morphology (Halle & Marantz 1993)**

- There is no lexicon in DM, that's why it is called “distributed”, because what was first attributed to the lexicon is now split in different modules of the grammar.

- Different components and operations of the grammar.

  a) Morphosyntactic features
  b) Morphological operations (Impoverishment, Fusion, Fission, Moprhological Merger…)
  c) Vocabulary Insertion
  d) Phonological operations (readjustment rules, …)
Interaction between the different components of grammar:

This is the question of whether morphology is computed in the same system as phonology—in which case morphological and phonological computations could in principle interact globally with each other—or whether morphology and phonology are computed by distinct linguistic systems, organized serially in a way that restricts potential interactions, p. 1

This book is a sustained argument for the position that phonological form is computed in a way that is directly linked to the generative procedure responsible for creating complex expressions, and that (morpho)syntax and (morpho)phonology interact in a limited way that
reflects the serial organization of these parts of the grammar. In the particular model of grammatical organization that I argue for, phonological computations apply after syntactic structures have been spelled out cyclically and processed morphologically. p. 1

• This “late insertion” idea, by which phonology comes after morphosyntax, makes sense in generative grammar, where syntax is the computational engine which creates structures. Most people working in the generative framework would agree on that, but the important theoretical question is whether there is any possible way of interaction between modules. It is clear that structural requirements of a word (e.g., “syllables must have onsets”) won’t interfere with syntax, but which is the relation between syntax and prosody, for example? Can we argue that there is no interaction at all?

2) LOCALISM/GLOBALISM; SERIALISM/PARALLELISM

– Localism/Parallelism: In the derivational approach, this relation is characterized by a series of local changes, each of which typically involves a single target in an environment that is locally determined. In non-derivative approaches like Optimality Theory, by contrast, neither of these restrictions holds: the relation between underlying and surface representations is not defined as the result of changes that are applied serially in local environments. To highlight these differences between approaches, the derivational approach is referred to below as Localist/Serialist, and the OT alternative as Globalist/Parallelist. (p. 2)

• Optimality Theory permits many changes at a time. Theoretically, we can have infinite modifications. From a point of view of computation, is it possible to process all these candidates at a time? Isn’t it too “cumbersome”?

– A fully Globalist theory of morphology and phonology would hold that the morphology and phonology of entire words is computed in a way that allows for interaction between structure, allomorphy, and sound; perhaps with syntax included in this computation as well (cf. McCarthy 2002:142). Limited Global interaction can also be implemented. For example, in stratal or cyclic versions of OT, only subparts of a given word are subject to simultaneous morphological and phonological computation (Kiparsky 2000 and subsequent work). While theories of this type rule out fully global interactions across entire words, they nevertheless predict that in a given cyclic domain, there should be global interaction among morphology and phonology. (p.4)
“(...) postnasal plosive deletion overapplies in long-ish because its conditions are met within a morphosyntactic subconstituent, the stem long-, which defines a cyclic domain by itself. The environment for deletion disappears in the outer cycle, as the vowel of the suffix -ish projects a syllable with an onset capable of sheltering the underlying /g/; but deletion has already applied in the inner cycle.” (Bermúdez-Otero 2010).

- How can a fully globalist theory account for these facts? Output – output constraints can be a possible solution (Benua 1997)

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Recursion (B)

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<td>a'</td>
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| b' | (ó.rí) gi nal | ** | * | * | *
| c' | o (r.i.gi) nal | ** | * | * | *
| d' | (ó.rí) gi nal | ** | * | * | *

Recursion (C)

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| c" | o (r.i.gi) (ná.li) ty | ** | * | * | *
| d" | (ó.rí) gi (ná.li) ty | ** | * | * | *

- Globalism/Serialism: It is thus predicted that phonological constraints may in some cases outrank syntactic or morphological constraints, such that the morphological properties of an expression could
potentially be determined by output phonology, or by the global properties of surface forms, in ways that cannot be formulated in Localist and Serialist theories. This prediction is especially important in the domain of allomorphy, as will be made clear below. (p.3)

Example of morphology-phonology interaction in the domain of allomorphy:

<table>
<thead>
<tr>
<th>(24) /gənəl-{n₁ &gt; ɲun₂}/</th>
<th>COMPLEX</th>
<th>MAX, DEP</th>
<th>PRIORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>gənəl-n₁</td>
<td></td>
<td>!</td>
<td></td>
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<tr>
<td>gənəl.-n₁a</td>
<td></td>
<td>!</td>
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<tr>
<td>gənəl.-ɲun₂</td>
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<thead>
<tr>
<th>/guludu-{n₁ &gt; ɲun₂}/</th>
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<tr>
<td>gəluludu-n₁</td>
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<tr>
<td>gəluludu.-ɲun₂</td>
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</table>

[“PRIORITY (preference for one allomorph in most contexts) Respect lexical priority (ordering) of allomorphs. Given an input containing allomorphs m₁, m₂, ..., mn, and a candidate mi', where mi' is in correspondence with mi, PRIORITY assigns as many violation marks as the depth of ordering between mi and the highest dominating morph(s).” (Mascaró 2007)]

In a theory like DM, this could not happen because morphology (in this case, the selection of the allomorph -PRIORITY-) cannot compete with phonology (COMPLEX, MAX and DEP are phonological constraints). Competition can only take place in DM at the Vocabulary Insertion level (the more specific an item is for a particular context, the better it is). This has been called the Subset Principle (Halle 1997)

- Should this kind of interaction be possible? Does a modular architecture need to be so restrictive? How can DM account for variability?
3) **PHONOLOGICALLY CONDITIONED ALLOMORPHY**

- 2 types of allomorphy:
  
  a) Contextual allomorphy (past tenses in English: -Ø, -t, -d)
  
  b) Phonologically conditioned allomorphy: (...) it might appear that the “morphological” choice of allomorphs is driven by the output phonology, in a way that fits nicely with a Globalist phonological theory in which syllable-structure markedness constraints that favor CV- syllables without codas can effect allomorph selection (p. 5).

<table>
<thead>
<tr>
<th>Allomorph</th>
<th>Env.</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>-i</td>
<td>/C _</td>
<td>pap-i</td>
<td>‘cooked rice’</td>
</tr>
<tr>
<td>-ka</td>
<td>/V _</td>
<td>ai-ka</td>
<td>‘child’</td>
</tr>
</tbody>
</table>

- This pattern seems to be quite spread crosslinguistically, but in DM this has no specific reason for it (i.e., no structural requirements). For Globalist theories, this is seen as a PUTATIVE LOSS OF GENERALIZATION (PLG): Localist theories are inadequate because in the cases in which allomorph selection optimizes the output according to some metric, the allomorph selection procedure does not explicitly state the fact that the distribution is driven by global or output properties of the phonology” (p. 88)

- (..) This theory can generate the forms that it derives mechanically, but it does so without reference to ultimate output forms; in this sense, it is a theory of morphology without teleology. In Globalist theories like Optimality Theory, the architecture allows phonological constraints to determine allomorph selection. (...) In such a theory, it is possible to say in the grammar that the distribution of allomorphs is the way it is for a reason. (p.6)

- **DM works derivationally without looking for explanations which are “outside” of the grammar. But, it is OT teleological? It is called “optimal” because, given a certain set of constraints, the language chooses the candidate with less violations (i.e, the optimal candidate). However, it is not doing so for any specific reason, the set of constraints is randomly ordered, so it is not functional in this sense. Some languages, for instance, will have very complex syllable structures because NOCODA or ONSET will be low ranked. But crosslinguistically there are some natural tendencies which might be taken into account.**
4) **THE SCHISM**

- The notion of competition is very important for OT. As Embick points out, “if there were not multiple competitors– i.e., if the grammar only made available one representation in any given computation– then there could be no “optimization” (p. 6). In contrast, for DM “whats urfaces in the grammar is what is derived by the grammar. (…) In the course of any derivation, only one object is produced” (p. 6)

(3) **THE SCHISM:** Globalist theories of morphophonology require competition between multiple potential expressions of a given input. According to the Localist morphosyntactic theory, this is impossible because the competitors are not derived by the grammar. (p. 8)

- 2 possibilities:
  
a) Morphophonology is simply different from morphosyntax
  
b) The Localist or the Globalist view is incorrect

  • Is it a realistic option that the architectures of these two components of grammar are so different? Could we argue that competition takes place only outside Vocabulary Insertion?

5) **PROSPECTUS: A LOCALIST THEORY**

- The defining property of this theory, a version of Distributed Morphology, is that patterns of contextual allomorphy are restricted by both phase-cyclic and linear notions of locality. (p.8)

- Outer noncyclic heads can see across an Inner cyclic node, but Outer cyclic heads cannot. (p. 11)

\[16\] Gerund *marrying* 

\[17\] English Past Tense

\[\text{Gerund *marrying*} \quad \text{English Past Tense}\]

\[\sqrt{\text{MARRY}} [v, -\emptyset] \quad [n, -\text{ing}] \quad \sqrt{\text{ROOT}} v \quad T[\text{past}]\]
– Contextual allomorphy is only possible with elements that are concatenated. (p.12)

– When the n head in (16) undergoes Vocabulary Insertion, it is in a PF cycle that does not contain the Root √ MARRY. Thus, this outer cyclic head cannot show Root-determined allomorphy. In the past tense structure in (17), on the other hand, the T[past] head undergoes VI in a PF cycle in which the Root is present. Thus, this head can show Root-determined allomorphy, as long as it is linearly next to the Root. (p.13)

6) **PROSPECTUS: LOCALISM VERSUS GLOBALISM**

– Returning to some of the themes introduced in the first part of this chapter, the morphosyntactic theory developed in Part I of the book restricts competition in the grammar to allomorphy of a single node: this is the process of Vocabulary Insertion. The theory thus disallows competitions in which multiple competitors like “words” are derived and compared for well-formedness. This effectively restricts the factors conditioning a case of contextual allomorphy to elements in the immediate context of the node being spelled out. (p. 14)

- *There are some cases in which we cannot apply to roots because the roots don’t exist without affixes (“cranberry morphemes”). Which is the solution given by DM?*

– PHONOLOGICAL SELECTION: Is there Phonological Selection, in which surface phonological well-formedness forces a choice among allomorphs, such that phonology drives allomorphy in ways that are impossible in a Localist theory? (p. 15)

– The case of Latin Perfect (Mester 1994)

\[ \text{monui / augsi} \quad \text{(s with heavy root -no trapping-)} \]
\[ \text{augseram} \quad \text{(trapping, better parsing with *augueram)} \]

This seems to be an argument against phonological selection. A simple solution can be found, however, in output-output constraints (requiring identity between base and derivative).

7) **TO WRAP UP**

a) *Morphophonology and morphosyntax are analyzed by very different theories. That poses an important problem when looking for a general explanation of the architecture of grammar (there is a lack of collaboration between phonologists and morphologists/syntacticians)*
b) Local relations are crucial in most aspects of grammar. Why should phonology be different? Do we have to get rid of fully global approaches and move to cyclic or gradual theories like Stratal OT or Harmonic Serialism?

REFERENCES


