On the Phonologically Driven Non-Realization of Function Words

ELISABETH SELKIRK
University of Massachusetts, Amherst

0. Introduction
The empirical focus of this paper is on cases where function words may fail to be realized in surface phonological representation due to the action of phonological constraints. Zec and Inkelas (1990) and Golston (1996) investigate cases of this sort, with a mind to their implications for theories of the organization of the grammar. My intention here is to further probe what such cases show about the nature of the phonology-morphosyntax interface, and to sketch a general theory of the phonologically driven non-realization of words.

Until recently, models of the relation between surface morphosyntax and surface phonology in a grammar did not countenance the possibility that phonology might have an influence on syntax. The idea of a phonology-free syntax was built into models of generative grammar from the 1960s up through the 1990s. These earlier models saw the output of the syntactic component as providing the input to the phonological component. But the last decade has seen possibilities for a different conception of the phonology-morphosyntax interface emerge. A Minimalist model of grammar (Chomsky 1995) does countenance the possibility that the phonological interface representation may influence syntactic form. Optimality Theory (Prince and Smolensky 1993, McCarthy 2001) allows in principle for this sort of influence as well. In the OT framework, a grammar consists of a set of ranked constraints on output form; outputs consist of both phonological structure (PStruc) and morphosyntactic structure (MStruc) representations; and constraints on PStruc and on MStruc appear in the same constraint hierarchy, such that constraints from either set may (in principle) dominate constraints from the other.

This paper adopts the OT framework in arguing for two related ways in which phonology may influence the morphosyntax of the sentence. First, the phonological constraint ranking may force the non-realization, i.e. deletion, of a word—but just when that deletion is recoverable. Second, the phonological constraint ranking may lead to the non-realization of the sentence containing the function word, i.e. to a “crashing” of the derivation, when the word deletion found in the optimal output candidate is not recoverable. It is proposed that both cases of non-realization arise when a particular morphosyntactic constraint of the general form
REALIZE(α) (where α is a variable over morphemes) is violated due to a higher ranking of phonological constraints. The question of what other types of morphosyntactic constraints may be dominated by phonological constraints is left unanswered in this paper.

1. Hausa fa and Phonologically Driven Non-Realization

Inkelas (1987) analyzes the possibilities of distribution of the Hausa morpheme fa, which she refers to as a focus particle. Fa is positioned by the morphosyntax to the right of the element in focus in the sentence, but it may not always appear there. For example, for a sentence to be realized in which the focus particle fa is associated with a preceding focused verb, that fa must be either verb phrase-final or be followed by a VP complement that consists of more than one word. Inkelas argues that this seemingly odd pattern of distribution has a prosodic characterization. She proposes that fa must appear at the right edge of a phonological phrase, as in (1b). The mechanism proposed for ensuring this distribution is a lexical prosodic subcategorization, given in (1c).

(1) Non-realization of fa in Hausa (Inkelas 1987, Zec and Inkelas 1990)

a. Sentence types
   - Verb fa
   - Verb fa Adj Noun
   - *Verb fa Noun

b. Prosodic structures for those types
   - (Verb fa)_{Ph}
   - (Verb fa)_{Ph} (A N)_{Ph}
   - (Verb fa N)_{Ph}

c. Prosodic subcategorization frame for fa: [PPh __]

But treating this as a case of stipulative prosodic subcategorization gives up on the search for any deeper explanation of these distributional patterns. The idea that there are no stipulative prosodic subcategorizations and that instead an output constraint hierarchy plays a determining role in the appearance, distribution, or allomorphic shape of morphemes has been proposed in Optimality Theoretic treatments of phonology-morphology interactions within words (e.g. McCarthy and Prince 1993, Mester 1994, Kager 1996). Tanel (1995), Mascaró (1996), and Golston (1996) have brought this perspective to the study of the non-realization of words in the sentence phonology. The leading idea in the theory of sentence-level allomorphy proposed by Tanel and Mascaró is that the choice between surface allomorphic variants (e.g. the appearance of French vieur [vje] 'old' before the consonant-initial garçon 'boy' in contrast to the appearance of the allomorph vieil [vjej] 'old' before the vowel-initial ami 'friend') is decided by higher ranking phonological constraints, in this case the markedness constraints that favor a CV syllable structure. In other words, allomorphy is controlled by surface phonology constraints. The non-realization of morphemes in particular phonologically defined contexts, such as that of Hausa fa, is also arguably driven by the surface phonology.
Phonologically-Driven Non-realization of Function Words

My proposal for implementing non-realization is that a constraint of the form \textsc{Realize}(\alpha) exists for every lexical item \( \alpha \) in a language and that the language-particular ranking of \textsc{Realize}(\alpha) determines the susceptibility of \( \alpha \) to non-realization. Such a constraint in a non-morpheme-specific form has been variously termed \textsc{MorphReal}, \textsc{Exponent}, etc. The morphemic specificity predicts that in the grammar of Hausa, for example, there are the constraints \textsc{Realize}(\textit{fa}), \textsc{Realize}(\textit{sayi}), \textsc{Realize}(\textit{habban}), etc. In the default case, \textsc{Realize}(\alpha) is undominated in the constraint hierarchy, ensuring that words in the input will be realized in the output:

(2) Default realization of morpheme \( \alpha \):
\[ \textsc{Realize}(\alpha) \gg \text{All P-Constraints} \]

In the idiosyncratic case of a particular word \( \beta \) which may fail—like \( \textit{fa} \)—to be realized in a particular phonological context, \textsc{Realize}(\beta) is specified as lower ranked than the relevant phonological constraints on the output, giving rise to the possibility of phonologically controlled non-realization:

(3) Idiosyncratic non-realization of morpheme \( \beta \):
\[ \text{Certain P-Constraint}(s) \gg \textsc{Realize}(\beta) \]

Let’s see how this theory works with the case of Hausa \textit{fa}. In the output constraint hierarchy of Hausa, \textsc{Realize}(\textit{fa}) will be ranked below certain phonological constraints. It is this idiosyncratic low ranking of \textsc{Realize}(\textit{fa}) which makes it vulnerable to non-realization. Because we do not have sufficient information about the prosodic structure of Hausa to make very informed hypotheses about which phonological constraints are responsible for the restrictions on the appearance of \textit{fa}, the analysis I am about to propose can serve only as a hypothetical illustration of a type of possible analysis that could be offered, given the theory above. Let’s use the cover term \textsc{Phrasing} for the sub-hierarchy of constraints that are responsible for the phonological phrasing of Hausa sentences that Inkelas assumes in (1b). In particular assume that a \textsc{Binary Maximum} constraint (cf. Selkirk 2000) will force a phonological phrase break between a verb and a two-word complement. And let’s use the term \textsc{Wording} as a cover term for the sub-hierarchy of constraints that are responsible for determining whether a function word is part of a Prosodic Word or not (cf. Selkirk 1995). For the sake of illustration, let’s assume that \textsc{Wording} in Hausa has the result that a monosyllabic function word like \textit{fa} is not a PWd itself and is furthermore not incorporated into an adjacent PWd—which means that \textit{fa} will be immediately dominated by a phonological phrase. And let’s also posit the existence of a constraint family called \textsc{Medial Exhaustivity}, which would rule out \textsc{Exhaustivity} violations except at the periphery of a prosodic constituent. This can be seen as a generalization of the peripherality constraint on “extrametricality.”
(4) **Medial Exhaustivity (MedExh):**

A prosodic constituent C must immediately dominate prosodic constituents of the next level down in the prosodic hierarchy, except if the daughter constituent lies at the edge of C, e.g.

a. \( \ast_{\text{PWh}(\ldots \text{Ft} \sigma \text{Ft} \ldots)_{\text{PWh}}} \)

b. \( \ast_{\text{PPh}(\ldots \text{PWh} \sigma \text{PWh} \ldots)_{\text{PPh}}} \), etc.

Now we are in a position to account for the non-realization of \( \text{fa} \) in the illicit context in (5a), alongside its permissibility in (5b):

(5)  

- a. \( \ast_{\text{PPh}} \)
- b. \( \text{PPh} \sigma \text{PPh} \)

```
PWd σ PWd
/ \ / \\
verb fa noun
```

The crucial constraint ranking is that in (6):

(6) **Wordings, Phrasing, MedExh » Realize(\( \text{fa} \))**

The success of this ranking in accounting for realization of \( \text{fa} \) in the (5b) context and its non-realization in the (5a) context is shown in the tableau in (7):

(7) **Realization and non-realization of \( \text{fa} \)**

```
| a. [[] [verb]_fa | [adj][noun]] ] | b. [[] [verb]_fa | [noun]] ] | Wordings | Phrasing | MedExh | Realize(\( \text{fa} \)) |
|-----------------|-----------------|-----------------|-----------|--------|--------|-----------------|
| \( \Rightarrow \) 1. (\( \text{verb}_{\text{PWh}} \_\text{fa} \)_\text{PWh} (\( \text{adj}_{\text{PWh}} \_\text{noun} \))_\text{PWh} | | | | | | |
| 2. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{adj}_{\text{PWh}} \_\text{noun} \))_\text{PWh} | | | | | | |
| 3. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{adj}_{\text{PWh}} \_\text{noun} \))_\text{PWh} | *! | | | | | |
| 4. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{adj}_{\text{PWh}} \_\text{noun} \))_\text{PWh} | | | | | | |
| \( \Rightarrow \) b. [[] [verb]_fa | [noun]] ] | | | | | |
| 1. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{noun} \)_\text{PWh} )_\text{PWh} | *! | | | | |
| 2. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{noun} \)_\text{PWh} )_\text{PWh} | | | | | |
| 3. (\( \text{verb}_{\text{PWh}} \_\text{fa} (\( \text{noun} \)_\text{PWh} )_\text{PWh} | *! | | | | |
| 4. (\( \text{verb}_{\text{PWh}} (\( \text{noun} \)_\text{PWh} )_\text{PWh} | | | | | |
```

In the case where the input consists of Verb-\( \text{fa} \) Adjective Noun, the first candidate, where \( \text{fa} \) lies at the edge of a phonological phrase, is the optimal one. It respects all the relevant constraints. In the case where the input consists of Verb-\( \text{fa} \) plus an object consisting of a single noun, it is that fourth candidate that is the optimal one. This is the one that respects all the higher constraints, but violates Realize(\( \text{fa} \)). So here the optimal candidate shows a non-realization of \( \text{fa} \).

Unfortunately, Inkelas says nothing about the meaning of \( \text{fa} \). Does \( \text{fa} \) carry some additional focus-related meaning, like ‘really’ or ‘indeed’ or ‘only’ or
‘too’? Or is it simply a semantically empty marker of a focus construction? Fa could in principle be semantically empty or redundant, since Focus is a property of the focused surface constituent at any rate, and is reflected in the sentence prosody (Inkelas and Leben 1990). If fa is empty or redundant, then its non-realization can simply be accounted for as in (7). But if fa does indeed have semantic content, then non-realization constitutes a violation of the principle of Recoverability:

(8) **Recoverability** (Pesetsky 1998):
A syntactic unit with semantic content must be pronounced [= realized]
unless it has a sufficiently local antecedent.

So on the scenario that fa has semantic content (and no antecedent), if underlying fa were not to appear in the surface, the “derivation” of the sentence should “crash,” to use Minimalist terms. This would be a case of the non-realization of a sentence. To ensure this “derivation crashing” effect, I will assume that the following property characterizes an OT grammar:

(9) The principle of Recoverability checks the output of EVAL.

If the candidate chosen by the constraint hierarchy (EVAL) involves a Recoverability violation, as would be the case in (7b) if fa had semantic content, then that sentence is simply not realized. This would be a case of the non-realization of a sentence, not the non-realization of a word. The theory of non-realization can be summed up as follows:

(10) **Types of Non-Realization and Recoverability**:

i. The non-realization of a in a phonologically illicit configuration:
When the optimal output candidate S’ corresponding to a specific input S contains a violation of REALIZE(a), and the absence of a in the output S’ does not incur a Recoverability violation, then a is simply not realized.

ii. The non-realization of a sentence with a in a phonologically illicit configuration:
When the optimal output candidate S’ corresponding to a specific input S contains a violation of REALIZE(a), and the absence of a in the output does incur a Recoverability violation, then neither the optimal output S’ nor any other output candidate with the same input S is realized. (“The derivation crashes.”)

So if Hausa fa has no semantic content, then it will simply not be realized in the output representation corresponding to the input with fa. But if fa has semantic
content, there will be no output sentence at all corresponding to the input. It remains to see what the facts of interpretation of Hausa fa-less sentences are.

The above theory, then, is the alternative I am proposing to Inkelas’s prosodic subcategorization theory of the non-realization of Hausa fa. As with allomorphic realization effects (Tranel 1995, Mascaró 1996, Golston 1996), the proposal here is that the grammar should and can shoulder the responsibility for accounting for the non-realization of words in phonologically defined surface configurations. What’s crucial to explaining the pattern of realization of a word α is (i) the lexical status of the word (what phonological shape it has, whether it is a function word or not, and whether it has semantic content), and (ii) the ranking of REALIZE(α) with respect to the rest of the phonological output constraint hierarchy. This explanatory account of patterns of non-realization of words comes at a small cost—the stipulation of the ranking position of REALIZE(α).

An advantage of this theory is its ability to explain why it is that word non-realization is apparently limited to function words. A function word, unlike a “content” word, may indeed fail to make an independent semantic contribution to the sentence, and so its deletion is potentially recoverable. Second, because function words, unlike content words, may fail to be assigned the status of Prosodic Word by the constraint system (Selkirk 1995), they may violate certain phonological constraints and so be vulnerable to deletion if REALIZE(α) is low ranked. The Japanese case below shows how the prosodization of the functional particle no determines its (non)realization.

2. The Recoverable Non-Realization of Japanese no

The case of non-realization of the Japanese particle no which we examine next has the advantage that the phonological constraint hierarchy that is responsible for the attested violations of REALIZE(no) has a straightforward independent motivation, and thus provides solid evidence that the non-realization of no is phonologically driven. The factual material is drawn from Poser (1984), who analyzes the sentence-level haplology involving adjacent instances of various functional particles with the phonological shape -no. These are the genitive, the copular, the nominal, and the interrogative no:

(11) The various -no particles of Japanese:

a. Genitive: Taroo no baN
   Taro GEN book
   ‘Taro’s book’

b. Copular: isya no ozisaN
   doctor COP uncle
   ‘uncle, who is a doctor’

c. Nominalizer: akai no
   red-PRES NMZ
   Hanako ga katta no
   Hanako NOM bought NMZ
   ‘the red one’
   ‘the one Hanako bought’
Phonologically-Driven Non-realization of Function Words

d. Interrogative: ik-u no
  go-PRES INT
  (intimate)

Given the syntax of Japanese, there are just three possible cases in which a sequence of more than one -no may in principle be generated in output morphosyntactic structure. In one case, the two -no are realized in the output, but in the others, one of the two -no fails to be realized:


a. -no -no sequence expected output observed
   i. NMZ GEN -no -no
   ii. GEN NMZ -no
   iii. COP NMZ -no

b. Examples
   i. akai no no futa
      red-PRES NMZ GEN lid
      (*akai no futa)  ‘the red one’s lid’
   ii. ZyoN no (rare)  ‘John’s’
      John [as in That’s John’s]
      (*ZyoN no no)
      John GEN NMZ
   iii. utyooteN no wa Hanako de ‘The one who is ecstatic
      ecstatic TOP Hanako be
      (*utyooteN no no wa Hanako de)
      ecstatic COP NMZ TOP Hanako be
      is Hanako.’

What I want to show here is that the pattern of non-realization of -no—present in cases (ii) and (iii) and absent in (i)—is explainable in terms of an independently motivated phonological constraint hierarchy in Japanese. As for the grammaticality of outputs showing this haplogonic non-realization of -no, I hypothesize that the genitive and copula -no have no semantic content, much like the particle of in English, and thus that their non-realization does not violate Recoverability.

The core problem to solve is why haplogony appears in the contexts in (ii) and (iii) in (11), but not in the context (i). For the sake of exposition, I am going to assume a characterization of haplogony in the spirit of, but not identical to, Golston (1996). According to Golston, there is a constraint he calls ANTIHOMOPHONY that rules against adjacent segmentally identical morphemes when they are dominated by the same Prosodic Word. But a generalization of the identity conditions allows one to remove the PWd stipulation:

263
Elisabeth Selkirk

(13) **Antithomophony**—Generalized (cf. Golston 1996):
    * α β, where α and β are morphemes which are
      a) adjacent,
      b) segmentally identical, and
      c) prosodically identical

    Def. Two morphemes of a sentence S are **prosodically identical** when both are dominated by identical instances of prosodic constituents in S and both have the same prominence status (as stressed or unstressed).

(Note that it follows from this definition that only morphemes that are dominated by the same instances of F, PWd, or PPh can be prosodically identical. This means that content words, which are each dominated by a distinct PWd, can never be prosodically identical, thus predicting that only function words will be susceptible to **antithomophony**.) Haplography crucially involves a ranking of **antithomophony over** Realize(α):

(14) **Antithomophony**—Generalized ≻ **Realize(α)**

This ranking is part of the analysis that I want to propose for -no haplography in Japanese. Specifically I want to propose that haplography patterns as it does in Japanese due to the manner in which the constraint hierarchy of Japanese organizes the -no particles into prosodic words in the different contexts in (12):

(15) The hypothesis:

- In **peripheral position** in the phonological phrase (cases (ii) and (iii)), a sequence of -no particles is forced to be incorporated into the same Prosodic Word with the word that precedes. **Antithomophony** rules against the sequence of non-footed no syllables that would have to appear within PWd, and so one of the -no particles fails to be realized:

  \[
  \text{PPh( } \text{ZyoN no no } \text{ PWd } \text{ PPh)} \\
  \text{John GEN NMZ} \\
  \text{PPh( } \text{utyooteN no no wa} \text{ PWd } \text{ PPh)} \\
  \text{costatic COP NMZ TOP} \\
  \text{PPh( } \text{Hanako de} \text{ PWd } \text{ PPh)} \\
  \text{Hanako be}
  \]

- In **phrase-medial** position (case (i)), the first -no is incorporated into the preceding prosodic word, but the second one is not. **Antithomophony** does not rule the sequence out, and so haplography does not occur.

  \[
  \text{PPh( } \text{akai no} \text{ PWd no PWd( futa) PWd } \text{ PPh)} \\
  \text{red-PRES NMZ GEN lid}
  \]
Independent evidence for the prosodic structure analyses in (15) is provided by the phenomenon of final deaccenting (McCawley 1968 and Poser 1984).

(16) **Phrase-Final Deaccenting**

A final accent in a polysyllabic word is retained when it is followed by a phrase-final particle (*wa, ga, o, the nominalizer -no, etc.), but not when the word itself is phrase-final. [Note that accent is lexically specified.]

- a. onna
- 'woman'
- kaki
- 'fence'
- atama
- 'head'

b. onna’-no
- woman-NMZ ‘the woman’s’
- kaki’ wa
- fence TOP
- atama’-o
- head-ACC

The avoidance of a tonal accent on the final mora in the (a) cases can be captured by a constraint of the **NONFINALITY** family (Prince and Smolensky 1993), which rules out prominent syllables at edges, (17a). The ranking in (17c) of **NONFINALITY**(H*, PWd) over the anti-deletion Faithfulness constraint **MAX**(H), (17b), provides part of the analysis of Final Deaccenting. The other part is provided by the ranking (18c) of the constraint **PERIPHERAL EXHAUSTIVITY** disallowing unparsed syllables at phrase edge over the constraint **ALIGN-R**(MWd, PWd).

(17) a. **NONFINALITY**(H*, PWd):

\[ *(... \sigma^{it})_{PWd} \]

b. **MAX**(I):

A H tone in the input must be present in the output.

c. **NONFINALITY**(H) » **MAX**(H)

(18) a. **PERIPHERAL EXHAUSTIVITY**(PPh):

\[ *(\ldots \delta)_{PWd}, \text{ where } \delta \text{ is a constituent of level lower than PWd} \]

b. **ALIGN-R**(MWd, PWd)

Align the R edge of an MWd with the R edge of a PWd.

c. **PERIPHERAL EXHAUSTIVITY » ALIGN-R**(MWd, PWd)

**PERIPHERAL EXHAUSTIVITY** forces a phrase-final particle into the preceding PWd, where its presence saves the stem-final tone from a fatal violation of **NONFINALITY**.
(19) Absence of deaccenting before phrase-final particles

<table>
<thead>
<tr>
<th>(onna) -ga</th>
<th>PEREXH</th>
<th>ALIGN-R</th>
<th>NONFIN(H)</th>
<th>MAX(H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ((onna) -ga) _rwa _hyn</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. ((onna) _rwa -ga) _hyn</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| c. ((onna-ga) _rwa) _hyn | | * |   | *!
| d. ((onna) _rwa -ga) _hyn | ! | * |         |        |

The ranking (18c), which forces phrase-final particles into the preceding P WD, will also have the effect of creating an ANTIHOMOPHONY violation in the case of a sequence of two no, and so leads to the haplogonic deletion of no:

(20) Haplogony in a phrase-final no sequence

<table>
<thead>
<tr>
<th>(i utuwaite) no no</th>
<th>PEREXH</th>
<th>ALIGN-R</th>
<th>ANTHOMOPH</th>
<th>REALIZE(α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ((i tuwauiteN no no) _rwa) _hyn</td>
<td></td>
<td>*</td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>b. ((i tuwauiteN no) _rwa no) _hyn</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. ((i tuwauiteN) _rwa no no) _hyn</td>
<td>!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. ((i tuwauiteN no) _rwa) _hyn</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

So this is the story for why a sequence of two no is not found in phrase-final position. What now of the maintenance of the double no sequence in medial position within the phrase? The solution to this question also finds independent motivation in the properties of final deaccenting in phrase-medial position.

(21) Medial Deaccenting:

A final accent in a polysyllabic word is deleted when it is followed by a single phonological phrase-medial particle, e.g.

onna no yaoya  ‘the woman’s grocer’, or
woman grocer  ‘the woman, who is a grocer’

The analysis of this phenomenon is straightforward. It must be assumed that the no particle is not forced into a P WD with the preceding word, and that the final accent, consequently final in the P WD, therefore violates NONFINALITY and is deleted. The ranking in (22), added to the rankings motivated above, will have this result, shown in the tableau in (23):

(22) ALIGN-R (M WD, P WD) » MEDIAL EXHAUSTIVITY

---

1 The dotted line indicates that no ranking has (as yet) been established between members of the two ranked constraint pairs posited in the tableau.
(23) Deaccenting PWd-finally when followed by single medial -no

<table>
<thead>
<tr>
<th></th>
<th>PerExh</th>
<th>Align-R</th>
<th>MedExh</th>
<th>NonFin(H)</th>
<th>Max(H)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td>[*]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Now we are in a position to derive the failure of no haplogony when two no appear in sequence phrase-medially. Our contention is that the relevant phrase in (11b,i) has the prosodic structure ((akai-no)_{PWd} no (futa)_{PWd})_{PNP} ‘the red one’s lid’, where the first no is incorporated into the preceding PWd, but the second is not. ANTHOMOPHONY is not violated here, since the two no are not prosodically identical, not being dominated by identical constituents in the prosodic tree. The additional pairwise constraint ranking, (24), in combination with earlier rankings yields this prosodic structure as the optimal candidate in (25):

(24) ANTHOMOPHONY » Align-R(MWd, PWd)

(25) No haplogony with phrase-medial sequence of -no particles

|     | PerExh | AnhomoPh | Realize(|) | Align-R | MedExh |
|-----|--------|----------|----------|---------|--------|
| a.  |        | [*]      |        |         |        |
| b.  |        |          |        |         |        |
| c.  |        |          |        |         |        |
| d.  |        |          |        |         |        |

Safely lodged in prosodically nonidentical positions, one inside and the other outside the PWd, the two no in the optimal candidate are correctly predicted to surface.

This account also predicts that a final-accented word preceding a sequence of two medial no would fail to undergo deaccenting, in contrast to the single no case in (21). Unfortunately, this additional data about final deaccenting, available only from older speakers of the Tokyo standard, is not available at this writing.

3. Crashing Derivations vs. Alternative Syntax: Ancient Greek

Golston (1996) provides exemplary documentation from Ancient Greek to show that sequences of articles are permitted in DPs with a center-embedded possessor DP, as in (26a), but only if the adjacent articles are not homophonous, cf. (26b).

(26) a. [t-ei [t-ees huphántikees] dunámei]]

     the-D:F the-G:F weaving-G:F power-D:F

     ‘with the power of weaving’

     P. Pol. 281b

267
Elisabeth Selkirk

b. *[t-ôon  t-ôon  eikei-oon  oikei-oon] tin-âs]
   ‘some of the slaves of those [people]’
   [construct]

c. * t-ôon Ø eikei-oon oikei-oon tin-âs

The important point here is that an output form showing haplology, as in (26c), is not available as a resolution of the dilemma. This center-embedded structure simply fails to be realized, whether with the two underlying homophonous morphemes, or with only one. In the theory that I have proposed here, the non-cooccurrence of both (26b) and (26c) could be analyzed as a case of the non-realization of the sentence, which results when a nonrecoverable deletion (that of one of the articles) is called for in the optimal output candidate, as seen in tableau (27). The outranking of REALIZE(Article α) by ANTIHOMOPHONY (the constraint proposed by Golston for these cases) makes the non-realization optimal.

(27) A crashing derivation account

<table>
<thead>
<tr>
<th>![t-ôon  t-ôon...]</th>
<th>ANTIHOMOPHONY</th>
<th>REALIZE(t-ôon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (t-ôon t-ôon...)</td>
<td>*†</td>
<td></td>
</tr>
<tr>
<td>⇒ b. (t-ôon...)</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

The cross † alongside the input marks the fact that the input is dead, the “derivation” having “crashed” because of the Recoverability violation.

Golston, however, argues that there is not a failure to realize the morphosyntactic structure underlying sentences with constituents like (26b) containing center-embedded structures with adjacent homophonous articles. Rather, he argues that sentences with the constituency of (26b) have an alternative realization with a postposed possessor phrase, and that as a consequence what cannot be expressed with either (26b) or the haplogologized (26c) can be expressed by the postposed (28):

(28) ![t-ôon oikei-oon] [t-ôon eikei-oon] ] tin-âs.

If we assume, with Golston, that (28) and (26b/c) are indeed simply variant output realizations of a same, presumably non-linearized, input representation, then, with Golston, we can understand (28) as the optimal candidate selected by EVAL.

268
(29) Selection of (28) as optimal candidate

<table>
<thead>
<tr>
<th>[ [ t-ôn [ t-ôn noun ] noun ]</th>
<th>MORPHOSYNTAX</th>
<th>ANTHOMOPH</th>
<th>REALIZE(t-ôn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (t-ôn t-ôn noun)(noun)</td>
<td>*'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. (t-ôn --- noun)(noun)</td>
<td>*'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⇒ c. (t-ôn noun)(t-ôn noun)</td>
<td></td>
<td></td>
<td>*'</td>
</tr>
<tr>
<td>d. (t-ôn Noun) (--- Noun)</td>
<td></td>
<td></td>
<td>*'</td>
</tr>
</tbody>
</table>

And so the impermissibility of (26b/c) would not be a case of the non-realization of a sentence. To choose between the “derivation crashing” analysis of (27) and the “alternative syntax” analysis of (29) one would need to establish whether or not these variant word orders are indeed simply alternative realizations of a same input structure with an identical semantics. In either case, it should be said, the constraint ANTHOMOPHONY and the prosodic structure constraints assigning the articles identical prosodic status are responsible for the absence of a particular syntactic construction among the output sentences of the language.

4. Conclusion

To conclude, what’s been offered in this paper is a theory of the non-realization of words in specified surface phonological contexts. The claim is that the (non)recoverability of a phonologically driven deletion determines whether a word is simply deleted, or whether the sentence containing that word fails to be realized. The possibility of these limited effects of phonology on syntax are available without making any assumptions about whether syntactic constraints must in general dominate phonological constraints (Golston 1996), or whether phonological constraints may in principle dominate syntactic constraints (Zec and Inkelas 1990). The notion that Recoverability checks the output of EVAL is what allows for the phonological filtering out of syntactic constructions in these non-realization cases.

References

Elisabeth Selkirk


Department of Linguistics
South College
150 Hicks Way
University of Massachusetts
Amherst, MA 01003-9274

selkirk@linguist.umass.edu