Loanword Phonology: Morphological Effects

Peter Jurgec

EGG 2013

Day 5
So far we talked about loanwords independently of morphological factors.

The focus of this class are those non-native structures that are possible in bare roots, but not in affixed words.

I will provide empirical evidence that the non-native structures may differ in what kind of morphologically complex words they appear.

- Some structures are possible in prefixed, but not suffixed, words.
- Other structures are possible in inflected, but not derived, words.
- This variation is found across languages and within a single language.

These typological distinctions are attributed to a single class of OT constraints.
Introduction

Data

Licensing

Dutch

Tagalog

Further predictions

Conclusions
Loanword exceptionality

- Loanwords often exhibit non-native structures (sounds, sound sequences, prosody).
- Some of these are replaced by the corresponding native structures only in morphologically integrated loanwords, both diachronically and synchronically (Bloomfield 1933:447ff.; Holden 1976; Franks 1991; LaCharité & Paradis 2005; Kubozono 2006).
- Morphology can affect the distribution of foreign sounds.
- Example: Dutch
Example

- Some speakers of Dutch can pronounce bare roots from English with [u], which is replaced by the native rhotic [R] in suffixed words.

- Dutch: \( u \sim R \)
  
  \[
  \begin{array}{llll}
  \text{Op[u]ah} & \text{‘Oprah’} & \text{Op[R]ah-tje} & *\text{Op[u]ah-tje} \quad \text{‘DIM’} \\
  \text{Ba[u]ack} & \text{‘Barack’} & \text{Ba[R]ack-se} & *\text{Ba[u]ack-se} \quad \text{‘ADJ’} \\
  \text{[u]eadin} & \text{‘Reading’} & \text{[R]eadin-je} & *[\text{u}]eadin-je \quad \text{‘DIM’} \\
  \text{Flo[u]ida} & \text{‘Florida’} & \text{Flo[R]ida-tje} & *\text{Flo[u]ida-tje} \quad \text{‘DIM’} \\
  \end{array}
  \]

- This pattern is somewhat variable. To be discussed.

- This phenomenon is called the *Oprah effect* (Jurgec to appear).
Conventional wisdom

- One standard approach to the above pattern is to say that the speakers of Dutch employ two different cophonologies.
- Loanword roots take the foreign cophonology (allowing $\lambda$), whereas the suffixes take the native cophonology (no onset $\lambda$).
- Whenever both kinds of morphemes appear in the same word, the suffix trumps the root, and the native cophonology applies to the whole word (along the lines of Kiparsky 1973; Zonneveld 1978; Inkelas & Zoll 2007).

- Exceptionality and morphological structure

\[
[\text{ROOT}_{\text{foreign}} + \text{AFFIX}]_{\text{native}}
\]

- This solution faces several challenges.
Data
### Dutch and affix position

- Not all affixes have the same effect.
- Derivational suffixes trigger nativization, but inflectional suffixes, or prefixes do not.

**Dutch: **$\breve{\eta} \sim \breve{\rho}$

<table>
<thead>
<tr>
<th>No affix</th>
<th>Prefix</th>
<th>Inflectional suffix</th>
<th>Derivational suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\breve{\eta}$</td>
<td>$\breve{\eta}$</td>
<td>$\breve{\eta}$</td>
<td>$\breve{\rho}$</td>
</tr>
<tr>
<td>Oprah’</td>
<td>hoofd-op[\textit{\breve{\eta}}]ah</td>
<td>hoofd-flo[\textit{\breve{\eta}}]ida</td>
<td></td>
</tr>
<tr>
<td>Florida’</td>
<td>Flo[\textit{\breve{\eta}}]ida</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Op[\textit{\breve{\eta}}]ah-tje | Flo[\textit{\breve{\rho}}]ida-tje
Tagalog

- Not all languages behave like Dutch.
- Tagalog replaces the foreign [f] in bare roots with [p] in suffixed and prefixed words.
- Tagalog: $f \sim p$

<table>
<thead>
<tr>
<th>Affix</th>
<th>Word 1</th>
<th>Word 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affix</td>
<td>[f]ilipino</td>
<td>[f]iesta</td>
</tr>
<tr>
<td>Prefix</td>
<td>pam-[p]ilipino</td>
<td>pam-[p]iesta</td>
</tr>
<tr>
<td>‘INSTR’</td>
<td>*pam-[f]ilipino</td>
<td>*pam-[f]iesta</td>
</tr>
<tr>
<td>Suffix</td>
<td>[p]ilipino-ng</td>
<td>[p]iesta-ng</td>
</tr>
<tr>
<td>‘DEF’</td>
<td>*[f]ilipino-ng</td>
<td>*[f]iesta-ng</td>
</tr>
</tbody>
</table>
Canadian English is a third kind of language that allows the French [ʁ] in words with prefixes, but not in words with infixes or suffixes.

### Canadian English:  $\text{ʁ} \sim \text{ʃ}$

<table>
<thead>
<tr>
<th>Affix Type</th>
<th>Example</th>
<th>Pronunciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affix</td>
<td>'Chretién'</td>
<td>kᵣɛtʃjɛn</td>
</tr>
<tr>
<td>Prefix</td>
<td>'ex-'</td>
<td>eks-kᵣɛtʃjɛn</td>
</tr>
<tr>
<td>Infix</td>
<td>'EXPL'</td>
<td>kᵣeɪʃʃʊkiɲ=tʃjɛn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oʊ=ʃʊkiɲ=pɛʃər</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>kᵣeɪʃʃʊkiɲ=tʃɛn</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>o=ʃʊkiɲ=pɛʃər-z</td>
</tr>
<tr>
<td>Suffix</td>
<td>'PL'</td>
<td>kᵣeɪʃʃʊkᵣetʃjɛn-z</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oʊpɛʃər-z</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>kᵣetʃjɛn-z</td>
</tr>
<tr>
<td></td>
<td>*</td>
<td>o=ʃʊkiɲ=pɛʃər-z</td>
</tr>
</tbody>
</table>
The cross-linguistic variation can be reduced to two variables.

Foreign structure allowed?

<table>
<thead>
<tr>
<th>No</th>
<th>Affix</th>
<th>Prefix</th>
<th>Suffix</th>
<th>Infix</th>
<th>Example Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>(✗)</td>
<td>many</td>
</tr>
<tr>
<td>II</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>Slovenian</td>
</tr>
<tr>
<td>III</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
<td>Tagalog</td>
</tr>
<tr>
<td>IV</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td></td>
<td>Dutch</td>
</tr>
<tr>
<td>V</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✗</td>
<td>English</td>
</tr>
<tr>
<td>VI</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>(✓)</td>
<td>many</td>
</tr>
</tbody>
</table>

Other types have not been found. Some appear impossible (e.g. Anti-Tagalog, Anti-English), whereas others are only unlikely (e.g. Anti-Dutch).
### Foreign structure allowed?

<table>
<thead>
<tr>
<th>NO</th>
<th>AFFIX</th>
<th>SUFFIX</th>
<th>EXAMPLE LANGUAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INFLECTION</td>
<td>DERIVATION</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>II</td>
<td>✓</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>III</td>
<td>✓</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>IV</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- **I:** many
- **II:** English, Ukrainian
- **III:** Dutch, Catalan
- **IV:** many

- Anti-Dutch has not been found.
Interim summary

1. Morphological restrictions on foreign phonotactics are language specific:
   - There restrictions do not seem to follow from any other properties of the languages in question.
   - For instance, inflection in Dutch appears to be very similar to inflection in English, yet Dutch allows the relevant foreign structures with inflection, while English does not.

2. There are some notable gaps:
   - If a foreign structure is allowed in affixed words, it will be allowed in non-affixed words.
   - If a foreign structure is allowed in infixed words, it will be allowed in either prefixed or/and suffixed words.
   - If a foreign structure is allowed in inflected words, it will be allowed in derived words.
Licensing
Generalizations

- Two components:
  1. phonological (exceptional foreign sounds ∼ native sounds)
  2. morphological (polymorphemic ∼ monomorphemic)
- I attribute the pattern to a markedness constraint that restricts the distribution of sounds in affixed words.
- Such restrictions can be captured by at least two well-established constraints: positional licensing and alignment.
Positional licensing

- Phonological patterns are often sensitive to position.
- The idea: A feature which is realized in a prominent position has a different status compared to that feature realized in a non-prominent position.
- **Positional markedness constraints** may require a feature to be associated with a morphologically, prosodically or psycholinguistically prominent position.
The observed pattern is limited to roots.
Roots are more prominent than affixes (McCarthy & Prince 1993b; Beckman 1998).
Yet this does not explain why the same root allows a foreign sound in some instances, but not others.
We need an additional reference to the position of the root within a larger domain.
For example, a particular foreign sound can appear in the root as long as no suffix follows, within the same word.
The foreign sound is licensed in roots when not followed by a suffix.
Our data suggest that licensing is in some way intertwined with alignment.

The generalization seems to be that the foreign structure is limited to the morpheme at the edge of a domain.

For example, Dutch allows [u] as long as it appears in the rightmost morpheme within the stem (as it is the case in bare root forms, prefixed and inflected forms).

Derivational suffixes trigger nativization, because the root is no longer aligned with the stem edge.

An adequate analysis must then capture both licensing and alignment into one constraint.
Challenges of positional licensing

\[ \text{LICENSE}([F], \text{position}) \]
An output [F] must be associated with \textit{position}.

1. Licensing constraints are not directional.
   - Control asymmetries in bidirectional licensing patterns:
     - Trigger targets example
       - root prefix and suffix Twi ATR
       - stressed pre- and post-tonic Pasiego height
       - root or suffix suffix or root Lango ATR
       - prefix or suffix root n/a
       - pre- or post-tonic stressed n/a

2. Licensing constraints are not domain specific.
   - No case of assimilation prefers a distant over a closer \textit{identical} target.
Challenges of classic alignment

- Alignment constraints are a way to capture the observed and other directional effects in OT (McCarthy & Prince 1993a).
- Classic alignment constraints are gradient and have been shown to cause pathologies (McCarthy 2003).
- LA are formally categorical but can nevertheless capture the gradience of classic alignment.
Alignment and *Licensed* Alignment

- LA resembles classic alignment in many ways. Both (may) refer to . . .
  1. domains
  2. features
  3. directionality
- However, LA constraints also differ from classic alignment. LA constraints . . .
  1. are categorical, not gradient (McCarthy 2003).
  2. may contain $>2$ domains or features.
  3. refer to precedence rather than domain edges.
Licensed Alignment

- Consider the constraint that drives progressive nasal harmony:
  \[
  *\text{PWd} (+\text{nasal}, \times) \]

- This constraint is violated by triplets \( \langle \text{PWd}, [+\text{nasal}], \times \rangle \), when \([+\text{nasal}]\) precedes the root node, within the Prosodic Word.

- Nasal harmony satisfies the constraint, because \([+\text{nasal}]\) is associated (and is thus synchronic) with the target root node.

- Even the loanword patterns do not involve spreading, they can nevertheless be attributed to the effects of LA.
Dutch
Recall Dutch

- Derivational suffixes trigger nativization, but not inflectional suffixes, or prefixes.
- Dutch: \( \mathbf{u} \sim \mathbf{r} \)

```
<table>
<thead>
<tr>
<th>Affix Type</th>
<th>'Oprah'</th>
<th>'Florida'</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affix</td>
<td>Op[(\mathbf{u})]ah</td>
<td>Flo[(\mathbf{u})]ida</td>
</tr>
<tr>
<td>Prefix</td>
<td>hoofd-op[(\mathbf{u})]ah</td>
<td>hoofd-flo[(\mathbf{u})]ida</td>
</tr>
<tr>
<td>Inflectional suffix</td>
<td>Op[(\mathbf{u})]ah’[s]</td>
<td>Flo[(\mathbf{u})]ida’[s]</td>
</tr>
<tr>
<td>Derivational suffix</td>
<td>Op[(\mathbf{r})]ah-tje</td>
<td>Flo[(\mathbf{r})]ida-tje</td>
</tr>
</tbody>
</table>
```

*Op[\(\mathbf{u}\)]ah-tje* and *Flo[\(\mathbf{u}\)]ida-tje* are marked as non-words.
Morphological structure

- How is the morphological structure of words related to Dutch loanword phonology?
- Only derivational suffixes trigger nativization.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>STRUCTURE</th>
<th>☑ ALLOWED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare root</td>
<td>{[ROOT]<em>{stem}}</em>{word}</td>
<td>☑</td>
</tr>
<tr>
<td>Prefixed</td>
<td>{[AFFIX,ROOT]<em>{stem}}</em>{word}</td>
<td>☑</td>
</tr>
<tr>
<td>Inflected</td>
<td>{[ROOT]<em>{stem,AFFIX}}</em>{word}</td>
<td>☑</td>
</tr>
<tr>
<td>Derived</td>
<td>{[ROOT,AFFIX]<em>{stem}}</em>{word}</td>
<td>☒</td>
</tr>
</tbody>
</table>

- Generalization: Some feature (or a combination of features) of the English rhotic cannot be followed by an affix, within the stem.
Some feature (or a combination of features) of the English rhotic cannot be followed by an affix, within the stem.

For simplicity, the relevant features of the rhotic are henceforth replaced with “ṣ”.

The constraint active in Dutch is *stem[ṣ, affix].

*stem[ṣ, affix]
*⟨stem, ṣ, affix⟩ / stem
     \               /  
      🚙  affix

This constraint is violated by triplets ⟨stem, ṣ, affix⟩, when [ṣ] precedes the affix, within the stem.

The set of third categories of LA constraints needs to be restricted (see Jurgec 2011 for further discussion).
LA constraints can be satisfied by spreading the relevant feature to a suffix segment.

While there are cases of harmony that target only a single segment in the suffix (Kaplan 2008; Walker 2011), this is not what happens in Dutch, which instead prefers a feature change.

This suggests that the faithfulness constraints prefer the mapping /u/ → [ɛ] rather than spreading, or deletion of [j].

The LA constraint is violated whenever a derivational affix follows a root containing an [ɛ], in which case [ɛ] surfaces instead.

Crucially, bare roots, inflected and prefixed words satisfy LA, and hence the faithful candidate wins.
Tableaux

- ι not possible with derivational suffixes

<table>
<thead>
<tr>
<th></th>
<th>/florida\text{-t}^j\epsilon_{stem} \</th>
<th>*stem[ι,affix]</th>
<th>IDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>florida\text{-t}^j\epsilon_{stem}</td>
<td>⟨stem,ι,t\text{-}^j\epsilon⟩!</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>florida\text{-t}^j\epsilon_{stem}</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

- ι possible in bare roots

<table>
<thead>
<tr>
<th></th>
<th>/florida_{stem} \</th>
<th>*stem[ι,affix]</th>
<th>IDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>florida_{stem}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>florida_{stem}</td>
<td></td>
<td>*!</td>
</tr>
</tbody>
</table>
Tableaux, continued

<table>
<thead>
<tr>
<th>Possible in bare roots</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*/florida_{\text{stem}}/</td>
<td>*stem[_affix]</td>
</tr>
<tr>
<td>a. \text{florida}_{\text{stem}}</td>
<td></td>
</tr>
<tr>
<td>b. \text{florida}_{\text{stem}}</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possible with prefixes and inflections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*/hoft-florida_{\text{stem-s}}/</td>
<td>*stem[_affix]</td>
</tr>
<tr>
<td>a. \text{hoft-florida}_{\text{stem-s}}</td>
<td></td>
</tr>
<tr>
<td>b. \text{hoft-florida}_{\text{stem-s}}</td>
<td></td>
</tr>
</tbody>
</table>
Tagalog
The LA approach can be easily extended to capture other languages.

When the precedence relations are reversed, prefixes trigger nativization.

In Tagalog, prefixes and suffixes trigger nativization, which means that two mirror LA constraints are required.
Recall Tagalog

- Tagalog replaces the foreign [f] in bare roots with [p] in suffixed and prefixed words.

<table>
<thead>
<tr>
<th>Affix</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affix</td>
<td>[f]ilipino</td>
<td>‘Filipino’</td>
</tr>
<tr>
<td>Prefix</td>
<td>pam-[p]ilipino</td>
<td>pam-[p]iesta</td>
</tr>
<tr>
<td></td>
<td>*pam-[f]ilipino</td>
<td>*pam-[f]iesta</td>
</tr>
<tr>
<td>Suffix</td>
<td>[p]ilipino-ng</td>
<td>[p]ista-ng</td>
</tr>
<tr>
<td></td>
<td>*[f]ilipino-ng</td>
<td>*[f]iesta-ng</td>
</tr>
</tbody>
</table>

Tagalog: \( f \sim p \)
In Tagalog both prefixes and suffixes trigger nativization of /f/ → [p].

The active LA constraint in Tagalog is *PWd[f, affix].

*PWd[f, affix] *⟨PWd, f, affix⟩ / PWd

\[ f \quad \text{afx} \]
Unlike in Dutch, the mirror constraint $\text{*PWd[affix, f]}$ is also ranked about $\text{IDENT}$.

f not possible with suffixes

<table>
<thead>
<tr>
<th>/filipino-η/</th>
<th>$\text{*ω[afx,f]}$</th>
<th>$\text{*ω[f,afx]}$</th>
<th>$\text{IDENT}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. filipino-η</td>
<td></td>
<td>$\langle ω,f,η\rangle$!</td>
<td></td>
</tr>
<tr>
<td>b. pilipino-η</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

f not possible with prefixes

<table>
<thead>
<tr>
<th>/pam-filipino/</th>
<th>$\text{*ω[afx,f]}$</th>
<th>$\text{*ω[f,afx]}$</th>
<th>$\text{IDENT}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. pam-filipino</td>
<td>$\langle ω,pam,f\rangle$!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. pam-pilipino</td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
Corpus data for fiesta/pista ‘feast’ (Zuraw 2006, p.c.)

<table>
<thead>
<tr>
<th>MORPHEMES</th>
<th>F VARIANT</th>
<th>#</th>
<th>P VARIANT</th>
<th>#</th>
<th>%p</th>
</tr>
</thead>
<tbody>
<tr>
<td>√</td>
<td>fiesta</td>
<td>952</td>
<td>pista</td>
<td>416</td>
<td>30</td>
</tr>
<tr>
<td>√-AF</td>
<td>fiesta-ng</td>
<td>4</td>
<td>pista-ng</td>
<td>65</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>fiesta-han</td>
<td>9</td>
<td>pista-han</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>AF-√</td>
<td>pam-fiesta</td>
<td>0</td>
<td>pam-pista</td>
<td>22</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>mag-fiesta</td>
<td>0</td>
<td>mag-pista</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>nag-fiesta</td>
<td>2</td>
<td>nag-pista</td>
<td>6</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>di-fiesta</td>
<td>0</td>
<td>di-pista</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>AF-AF-√</td>
<td>mag-pa-fiesta</td>
<td>9</td>
<td>mag-pa-pista</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AF-√-AF</td>
<td>ka-fiesta-han</td>
<td>1</td>
<td>pista-han</td>
<td>399</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>pag-fiesta-an</td>
<td>1</td>
<td>pista-an</td>
<td>16</td>
<td>94</td>
</tr>
<tr>
<td>AF-√-AF-AF</td>
<td>ka-fiesta-ha-ng</td>
<td>0</td>
<td>ka-pista-ha-ng</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>A&lt;AF&gt;F-√-AF</td>
<td>p&lt;in&gt;ag-fiesta-han</td>
<td>1</td>
<td>p&lt;in&gt;ag-pista-han</td>
<td>18</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27</td>
<td></td>
<td>607</td>
<td></td>
</tr>
</tbody>
</table>
Explaining variation

- 3 different grammars/variants.
- Tagalog: $f/v$ possible?

<table>
<thead>
<tr>
<th></th>
<th>VAR A</th>
<th>VAR B</th>
<th>VAR C</th>
<th>VAR D</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROOT</td>
<td>☒</td>
<td>✓</td>
<td>✓</td>
<td>☒</td>
</tr>
<tr>
<td>ROOT + AFFIX</td>
<td>☒</td>
<td>✓</td>
<td>☒</td>
<td>✓</td>
</tr>
<tr>
<td>attested</td>
<td>30%</td>
<td>4%</td>
<td>66%</td>
<td>0%</td>
</tr>
</tbody>
</table>

These differences can be accounted for by making use of OT approaches to variation (either indexed constraints or cophonologies).
Interim summary

- We have seen that Licensed Alignment can capture the cross-linguistic differences in affix position and type.
- The idea is that a constraint penalizes a feature when it precedes (or is preceded by) an affix, within a stem or a word.
- Faithfulness constraints prefer feature change/deletion rather than spreading (as attested in some cases of assimilation).
Further predictions
Beyond affix position and type

LA makes further predictions about how loanword phonology can be affected by morphological domains.

These are dependent upon the domains precedence relationships in LA.

In particular, LA establishes a precedence relationship between unlike constituents: features/segments and morphological domains.
Inflected implies derived

- Generalization:
  No language shows nativization only with inflectional, but not derivational, suffixes.

- Explanation:
  There is no domain common to roots and inflectional affixes to the exclusion of derivational affixes.

- Example languages:
  None. The opposite pattern is frequent.
Different patterns within a single language

- Generalization:
  Loanword patterns within a single language may differ with respect to their domains.

- Explanation:
  LA constraints refer to a particular sound/feature. This means that nativization of each individual sound is generally independent of other sounds.

- Example languages:
  English, Slovenian.
Slovenian r-nativization

- Slovenian exhibits a $\partial \sim r$ alternation, which is similar to the Dutch one. Any affixation triggers nativization.

- Slovenian affixation: $\partial \rightarrow r$

<table>
<thead>
<tr>
<th>BARE ROOT</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\partial$</td>
<td>$\partial$bin</td>
<td>$\partial$egan</td>
</tr>
<tr>
<td>INFLECTED</td>
<td>$r$</td>
<td>$\partial$bin-u</td>
<td>$\partial$egan-i</td>
</tr>
<tr>
<td>DERIVED</td>
<td>$r$</td>
<td>$\partial$bin-ow</td>
<td>$\partial$egan-tʃæk</td>
</tr>
<tr>
<td>PREFIXED</td>
<td>$r$</td>
<td>pod-$\partial$bin</td>
<td>nad-$\partial$egan</td>
</tr>
</tbody>
</table>
Slovenian schwa nativization

- Schwa that appears in bare roots is retained in inflected words, but is replaced with [e] in derived words.

- Slovenian derivation only: ə → e
  
<table>
<thead>
<tr>
<th>Bare Root</th>
<th>Inflected</th>
<th>Derived</th>
</tr>
</thead>
<tbody>
<tr>
<td>ə</td>
<td>mesetʃusəts</td>
<td>mesetʃusəts-ən</td>
</tr>
<tr>
<td></td>
<td>tənəsi</td>
<td>tənəsi-ski</td>
</tr>
<tr>
<td></td>
<td>mesetʃusəts-a</td>
<td>tenəsi-jem</td>
</tr>
<tr>
<td></td>
<td>mesetʃusəts-tʃan</td>
<td>*tensəsi-ski</td>
</tr>
</tbody>
</table>

- The same variation that has been observed cross-linguistically can also occur within the same language.

- This sort of variation is predicted by LA, since each segment comes with its own set of LA constraints, and LA constraints may be sensitive to different domains.
Generalization:
Infixes always pattern with suffixes and/or prefixes. This is part of a more general, edge preference of infixes (Yu 2007).

Explanation:
Definition of precedence in LA matters. Precedence in LA involves both features and morphological domains. An infix precedes the whole root (and vice versa).

Example language:
English.
Zero affixes

- Generalization:
  Zero affixes work like regular affixes.

- Explanation:
  LA constraints refer to an affix, regardless of its segmental/feature content.

- Example languages:
  Dutch, English.
Dutch zero affixation

- Example: Verbs in Dutch
- First person singular verbal forms in Dutch morphologically differ from uninflected nouns, even though they may be segmentally identical.
- Yet they do contain a zero morpheme.
- Evidence: Final n-deletion
  1. Optional in nouns: [tekən] ～ [tekə] ‘sign’
  2. Not possible in verbs: [tekən], never *[tekə] ‘(I) draw’
Dutch zero affixation in loanwords

- Recall the Dutch $\sim$ pattern.

- Dutch zero derivation counts as derivation

<table>
<thead>
<tr>
<th>Dutch Name</th>
<th>English Name</th>
<th>Derivation</th>
<th>Derivation</th>
<th>English Pronoun</th>
</tr>
</thead>
</table>
Epenthesi

- Generalization:
  Epenthetic segments cannot trigger nativization (but can undergo it).
- Explanation:
  LA constraints require a morphological trigger and a segmental target.
  Epenthetic segments have not morphological affiliation, hence they cannot act as triggers.
  Epenthetic segments have some feature content, and can be targeted.
- Example language:
  Slovenian.
Example: Velar nasals in English roots borrowed into Slovenian

These loanwords typically retain velar nasals.

Yet velar nasals are not possible in Slovenian unless they are followed by a velar obstruent.

Two repairs:

1. velar stop insertion (e.g. [swiŋk] ‘swing’)
2. nasal place assimilation

Epenthetic segments do not trigger nativization

/tuɾiŋ/ → tuɾiŋ_{root}k ‘(Alan) Turing’
/tuɾiŋʃk-i/ → tuɾinʃk-i *tuɾinʃk-i ‘Turing-ADJ’
Conclusions

- Morphology affects loanword phonology.
- Some loanword sounds/structures are possible with a subset affixed words.
- This pattern is observed across many languages. There are significant typological differences.
- Loanword nativization is a markedness effect.
- Licensed Alignment is a powerful tool that has been used for prosody, segmental patterns (assimilation, dissimilation), and the morphological restrictions on loanword patterns.
Thank you!

Contact me:

- peter@jurgec.net
- http://www.jurgec.net
- http://www.facebook.com/phonology
Loanword Phonology: Morphological Effects

Peter Jurgec

EGG 2013

Day 5
Questions
Non-segmental precedence

- Licensed Alignment refers to features/segments and morphological domains.
- Precedence in phonology is typically not computed among these constituents.
Defining precedence

- Precedence between segments and morphemes
  A segment $m$ of morpheme $M$ precedes morpheme $N$, iff at least one segment of $M$ precedes $N$.

- Thus:
  1. Any segment of the root precedes an infix (and vice versa).
  2. Any segment of the root precedes a zero suffix.
  3. Any non-final epenthetic segment precedes a suffix (if there is one).
Example (< ‘precedes’)


