Fairies land only at midnight 🧚‍♂️:
on laryngeal sonorant/vowel roots in Korean

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These patterns can be captured in a unified way with assuming underlying floating features and stratal OT.

The floating feature creates a laryngeal sonorant that is present only at an intermediate level of the derivation (Duke-of-York).

Accounts with simpler representations face severe problems.
Data
Laryngeal contrasts

Korean has a three-way distinction in terms of laryngeal contrast in obstruents.

This contrast is neutralised in coda position.

(1)  a. /kal/ [kal] ‘Zacco platypus (which turns red when it is about to lay eggs)’
     b. /kʰal/ [kʰal] ‘knife’
     c. /kʼal/ [kʼal] ‘color’

(2)  a. /pjək/ [pjək] ‘wall’
     b. /puəkʰ/ [pu.ək] ‘kitchen’
     c. /pakʼ/ [pak] ‘outside’

Vowels and sonorants do not show such contrasts on the surface!
Vowel Fairy Roots

- Vowel final roots generally do not affect the plain obstruent initial suffixes (3-a) (4-a).

- Fairy roots idiosyncratically induce laryngeal contrasts onto these suffixes (3-b,c) (4-b,c).

(3) a. /na-ta/ → [na.ta] ‘occur’  
    b. /naʔ-ta/ → [na.t’a] ‘get.better’  
    c. /naʰ-ta/ → [na.tʰa] ‘give.birth’

(4) a. /na-ko/ → [na.ko] ‘occur’  
    b. /naʔ-ko/ → [na.k’o] ‘get.better’  
    c. /naʰ-ko/ → [na.kʰo] ‘give.birth’
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Sonorant Fairy Roots

Sonorant-final roots may be fairy roots, as well.

However, they are more restricted (cf. Albright and Kang (2009)):

(5) a. /al-ta/ → [al.ta] ‘know’
    b. /alʰ-ta/ → [al.tʰa] ‘suffer’

(6) a. /anʔ-ta/ → [an.t’a] ‘hug’
    b. /anʰ-ta/ → [an.tʰa] ‘do.not’

(7) /kamʔ-ta/ → [kam.t’a] ‘wind’
Sonorant Fairy Roots

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(6) a. /an\textipa{\textipa{h}}-ta/ → [an.\textipa{\textipa{h}t}a] ‘hug’
    b. /an\textipa{h}-ta/ → [an.\textipa{\textipa{h}t}a] ‘do.not’

(7) /kam\textipa{\textipa{h}}-ta/ → [kam.\textipa{\textipa{h}t}a] ‘wind’
Puzzles
> The inflectional affix -ə/-a/-jə optionally fuses with a preceding vowel (cf. Jun and Albright (2017)).

(8) a. /o-a/ → [wa] ‘come.INFL’
   b. /pʰi-ə/ → [pʰjə] ‘blossom.INFL’
   c. /na-a/ → [na] ‘occur.INFL’
Blocking of fusion

> If this affix attaches to a fairy root $\leftarrow$, fusion is blocked.

(9) a. /co^h-a/ $\rightarrow$ [co.a] *[cwa] ‘good.INFL’
   b. /i^?-o/ $\rightarrow$ [i.o] *[j_o] ‘tie.INFL’
   c. /na^?-a/ $\rightarrow$ [na.a] *[na] ‘get.better.INFL’
   d. /na^h-a/ $\rightarrow$ [na.a] *[na] ‘give.birth.INFL’
Allomorph-less sonorant-initial affixes geminate, if attached to a fairy root.

(10) a. /po-ni/ → [po.ni] ‘see.Q’
b. /mək-ni/ → [mək.ni] ‘eat.Q’

(11) a. /co^{h}-ni/ → [con.ni] ‘be.good.Q’
b. /na^{?-ni}/ → [nan.ni] ‘get.better.Q’
c. /na^{h}-ni/ → [nan.ni] ‘give.birth.Q’
Allomorph selection 1

Fairy roots unexpectedly select the elsewhere allomorph ‘simnita’.

(12)  
  a. /po/-{mnita, simnita} → [pom.ni.ta] ‘see.FORM’
  b. /mək/-{mnita, simnita} → [mək.sim.ni.ta] ‘eat.FORM’

(13)  
  a. /coʰ/-{mnita, simnita} → [co.sim.ni.ta] ‘be.good.FORM’
  b. /naʔ/-{mnita, simnita} → [na.sim.ni.ta] ‘get.better.FORM’
More unexpected allomorph selection by fairy roots can be observed with the elsewhere allomorph ‘in’.

(14) a. /po/-{n, in} → [pon] ‘seen’
b. /mək/-{n, in} → [mə.kin] ‘eaten’

(15) a. /cə-h/-{n, in} → [co.in] ‘been.good’
b. /nə²/-{n, in} → [na.in] ‘got.better’
### Interim Summary

<table>
<thead>
<tr>
<th>(16)</th>
<th>Roots</th>
<th>-C</th>
<th>fusion</th>
<th>allomorphy</th>
<th>gemination</th>
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### (17) Roots -C fusion allomorphy gemination

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<tr>
<th>Roots</th>
<th>-C</th>
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<th>allomorphy</th>
<th>gemination</th>
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</thead>
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<td>✓</td>
<td>×</td>
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<tr>
<td>Vʰ</td>
<td>-Cʰ</td>
<td>×</td>
<td>×</td>
<td>✓</td>
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<td>Vʰ</td>
<td>-C'</td>
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<td>C</td>
<td>-C'</td>
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</table>

All the nasal-final roots are fairy roots! 🦇
Proposal
We propose that a floating laryngeal feature (+F) is a part of the underlying representation of fairy roots.

(18) /na\textcircled{+sg}/ 'give.birth'
(19) /na\textcircled{+cg}/ 'get.better'
(20) /na/ 'occur'
We derive the three puzzles with a feeding/bleeding Duke-of-York gambit (Bermúdez-Otero, Ricardo 2001).

- in the first stratum the floating feature
  - docks to any affix.
  - influences allomorph selection.
  - blocks fusion.
  - induces gemination.

- in the next stratum
  - the laryngeal specification is neutralised.
Sample Illustration

- Input
- 1st stratum
  - fusion blocked!
- 2nd stratum

Gleim & Lee (Uni Leipzig)
Assumptions

- Stratal OT (Kiparsky, Paul 2000; Bermúdez-Otero, Ricardo 2001).

Analysis
**Constraints**

- **FLOAT**
  Assign * to every feature F that is not linked to a root node.

- **ALTERNATION**
  Assign * to every epenthetic association line between elements having the same morphological affiliation.
  cf. Morphological Colour (Revithiadou, 2007; ?)

- **DEP**
  Assign * to every epenthetic root node.

- ***V^{r/h}**
  Assign * to every vowel root node linked to [+cg]/[+sg]
### Stem-level Optimization

**$T_1$. Stem-level,**

<table>
<thead>
<tr>
<th>I: co $+sg$ – a</th>
<th>MAXF</th>
<th>*FLOAT</th>
<th>DEP</th>
<th>ALTER</th>
<th>$\nu([+sg][-sg])$</th>
<th>*V.V</th>
<th>$V^h$</th>
</tr>
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<tbody>
<tr>
<td>O¹: co$+sg$a</td>
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<td>O³: cwa</td>
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<td>O⁴: co$ha$</td>
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<td>O⁵: cwa$^h$</td>
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<td>O⁶: cwa$^h$</td>
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> $\nu([+sg][-sg])$
> Assign * to every nucleus linked to opposite values of $[\pm sg]$  
  (cf. Kehrein, Wolfgang and Golston, Chris (2004))

> *V.V
> Assign * to adjacent heterosyllabic vowels
## Stem-level Optimization

### $T_1$. Stem-level,

**MaxF, *FLOAT $\gg *V^h$**

<table>
<thead>
<tr>
<th>I: co $^{(+sg)}$ – a</th>
<th>MaxF</th>
<th>*FLOAT</th>
<th>Dep</th>
<th>Alter</th>
<th>$\nu([+sg][-sg])$</th>
<th>V.V</th>
<th>$*V^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>O$^1$: co$^{(+sg)}$a</td>
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<td>*!</td>
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<td>O$^2$: co$^h$</td>
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<td>O$^3$: cwa</td>
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<td>O$^4$: co.$^h$ha</td>
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<td>O$^5$: cw$^h$a$^h$</td>
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<td>O$^6$: cwa$^h$</td>
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$*V.V$

Assign * to adjacent heterosyllabic vowels
Stem-level Optimization

$T_1$. Stem-level,

\[
\begin{array}{|c|c|c|c|c|c|}
\hline
\text{I: co} & \text{+sg} & -a & \text{MaxF} & *\text{FLOAT} & \text{Dep} \bullet \text{Alter} \\
\hline
O^1: \text{co} & \text{+sg} & a & *! & & \\
O^2: \text{co.a} & & & & & * \\
O^3: \text{cwa} & & & & & * \\
O^4: \text{co.ha} & & & & & ! \\
O^5: \text{cw.a} & & & & & *!
\hline
O^6: \text{cwa} & & & & & *!
\hline
\end{array}
\]

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<tr>
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<th>MAXF</th>
<th>*FLOAT</th>
<th>Dep ●</th>
<th>Alter</th>
<th>*ν(([+\text{sg}][-\text{sg}]))</th>
<th>*V.V</th>
<th>*V(^h)</th>
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</thead>
<tbody>
<tr>
<td>O¹: co(^{+\text{sg}})a</td>
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<td>*!</td>
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<td>O³: cwa</td>
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<td>O⁴: co.ha</td>
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<td>O⁵: cw(^h)a(^h)</td>
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<td>O⁶: cw(^a)^h</td>
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*ν(\([+\text{sg}][-\text{sg}]\))

Assign * to every nucleus linked to opposite values of [±sg]
(cf. Kehrein, Wolfgang and Golston, Chris (2004))

*V.V

Assign * to adjacent heterosyllabic vowels
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<tr>
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<th>I: co (+sg) - a</th>
<th>MAXF</th>
<th>*FLOAT</th>
<th>DEP</th>
<th>ALTER</th>
<th>*ν([+sg][-sg])</th>
<th>*V.V</th>
<th>*V^h</th>
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<td>O₁:</td>
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<td>O₅:</td>
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<td>O₆:</td>
<td>cwa^h</td>
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- **MaxF, *Float ➔ V^h**

**≥**

\[\ast\nu([+sg][-sg])\]

Assign * to every nucleus linked to opposite values of \([\pm sg]\)

(cf. Kehrein, Wolfgang and Golston, Chris (2004))

**≥**

\[\ast V.V\]

Assign * to adjacent heterosyllabic vowels
## Stem-level Optimization

### $T_1$. Stem-level,

<table>
<thead>
<tr>
<th>I: co $^+sg$ × a</th>
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<th>DEP $\bullet$</th>
<th>ALTER $\ast \nu([±sg])]$</th>
<th>*V.V</th>
<th>*$V^h$</th>
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<td>O$^4$: co.ha</td>
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<td>O$^5$: cw$^h$a$^h$</td>
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<td>O$^6$: cwa$^h$</td>
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- $\ast \nu([±sg])]$
  
  Assign * to every nucleus linked to opposite values of $[±sg]$
  
  (cf. Kehrein, Wolfgang and Golston, Chris (2004))

- *V.V
  
  Assign * to adjacent heterosyllabic vowels
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**T\textsubscript{1}. Stem-level,**

<table>
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<tr>
<th>I: co (^{+\text{sg}})–a</th>
<th>MAXF</th>
<th>*FLOAT</th>
<th>DEP •</th>
<th>ALTER</th>
<th>*(\nu([+\text{sg}][-\text{sg}]))</th>
<th>*V.V</th>
<th>*V\textsuperscript{h}</th>
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<td>O\textsubscript{2}: co.a\textsuperscript{h}</td>
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<td>O\textsubscript{5}: cw\textsuperscript{h}a\textsuperscript{h}</td>
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<td>*!</td>
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<tr>
<td>O\textsubscript{6}: cwa\textsuperscript{h}</td>
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<td>*!</td>
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</table>

\(<\text{cf. Kehrein, Wolfgang and Golston, Chris (2004)}>)\n
**MaxF, *FLOAT ⇒ V\textsuperscript{h}**

- **\(\nu([+\text{sg}][-\text{sg}])\)**: Assign * to every nucleus linked to opposite values of \([\pm \text{sg}]\)
- **V.V**: Assign * to adjacent heterosyllabic vowels
**Stem-level Optimization**

### $T_1$. Stem-level,

<table>
<thead>
<tr>
<th>I: $\text{co } [+sg] - a$</th>
<th>MAXF</th>
<th>*FLOAT</th>
<th>Dep •</th>
<th>ALTR</th>
<th>$\nu ({+sg}[-sg])$</th>
<th>*V.V</th>
<th>$V^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$O^1$: $\text{co } [+sg] a$</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$O^2$: $\text{co } a^h$</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$O^3$: $\text{cwa}$</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$O^4$: $\text{co } a^h$</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$O^5$: $\text{cw } a^h$</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>$O^6$: $\text{cwa } a^h$</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At the stem level the laryngeal contrast can survive on any suffixes, even if they are Vowel/Sonorant.
Word-level Optimization

$T_2$. Word-level

<table>
<thead>
<tr>
<th>I: co.$a^h$</th>
<th>$^hV^h$</th>
<th>$\text{Max}(\sigma)$</th>
<th>$^hV^h \text{MaxF}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>O$^1$: co.$a^h$</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Uparrow$ O$^2$: co.a</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>O$^3$: cwa</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
</tbody>
</table>

$\Rightarrow$ Max($\sigma$): Assign * to every input syllable which is not present in the output

At the word level the laryngeal specification is neutralised.
**T₂. Word-level Optimization**

<table>
<thead>
<tr>
<th>I: co.a¹</th>
<th>*Vʰ</th>
<th>Max(σ)</th>
<th>*V.V</th>
<th>MaxF</th>
</tr>
</thead>
<tbody>
<tr>
<td>O¹: co.a¹</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O²: co.a</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>O³: cwa</td>
<td></td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Max(σ): Assign * to every input syllable which is not present in the output.

At the word level the laryngeal specification is neutralised.
### Word-level Optimization

**T₂. Word-level**

<table>
<thead>
<tr>
<th></th>
<th>*Vʰ</th>
<th>Max(σ)</th>
<th>*V.V</th>
<th>MaxF</th>
</tr>
</thead>
<tbody>
<tr>
<td>I: co.aʰ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O¹: co.aʰ</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O²: co.a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O³: cwa</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- *Vʰ ∫ MaxF

> **Max(σ):** Assign * to every input syllable which is not present in the output

**At the word level the laryngeal specification is neutralised.**
### Word-level Optimization

#### $T_2$. Word-level

<table>
<thead>
<tr>
<th>Input: $\text{co.a}^h$</th>
<th>Output 1: $\text{co.a}^h$</th>
<th>Output 2: $\text{co.a}$</th>
<th>Output 3: $\text{cwa}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\ast V^h$</td>
<td>$\ast !$</td>
<td>$\ast$</td>
<td>$\ast$</td>
</tr>
<tr>
<td>Max($\sigma$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaxF</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ *V^h \gg \text{MaxF} \]

- Max($\sigma$): Assign $\ast$ to every input syllable which is not present in the output.

> At the word level the laryngeal specification is neutralised.
Duke-of-York Gambit

(21)  

\[
\begin{align*}
\text{co}^{(-sg)} & - a & \text{UR} & \text{ABC} \\
\text{coa}^h & \text{Feature Docking} & \text{ABD} \\
\text{cannot apply} & \text{Fusion} & - \\
\text{coa} & \text{Feature Deletion} & \text{ABC}
\end{align*}
\]
Stem level: Gemination

$T_3$. Stem-level,

<table>
<thead>
<tr>
<th>I: $\text{co}^{-\text{sg}}^{-\text{ni}}$</th>
<th>$S^h \rightarrow \mu$</th>
<th>DEP $\mu$, $^*S^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$O^1: \text{co.n}^h \text{i}$</td>
<td>$^*$</td>
<td>$^*$</td>
</tr>
<tr>
<td>$O^2: \text{co.n}^h \text{i}$</td>
<td>$^*$</td>
<td>$^*$</td>
</tr>
</tbody>
</table>

$S^h \rightarrow \mu$: Assign $^*$ to every laryngeally specified sonorant node which is not moraic.

$\text{Assumption: Geminates are moraic, whereas coda consonants are not moraic (There is no evidence for moraicity of codas).}$
### Stem level: Gemination

**T₃. Stem-level,**

<table>
<thead>
<tr>
<th></th>
<th>(S^h \rightarrow \mu)</th>
<th>DEP (\mu)</th>
<th>(\ast S^h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I: co(^{+sg})-ni</td>
<td></td>
<td></td>
<td>(\ast)</td>
</tr>
<tr>
<td>O¹: co.n(^h)i</td>
<td>(\ast!)</td>
<td></td>
<td>(\ast)</td>
</tr>
<tr>
<td>O²: con(^h)(\mu)i</td>
<td>(\ast)</td>
<td>(\ast)</td>
<td>(\ast)</td>
</tr>
</tbody>
</table>

**⇒** \(S^h \rightarrow \mu\): Assign \(\ast\) to every laryngeally specified sonorant node which is not moraic.

**⇒** Assumption: Geminates are moraic, whereas coda consonants are not moraic (There is no evidence for moraicity of codas).
Stem level: Gemination

$T_3$. Stem-level,

<table>
<thead>
<tr>
<th>I: co$^{+sg}$ni</th>
<th>$S^h \rightarrow \mu$</th>
<th>DEP $\mu$, $*S^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>O$^1$: co.$^h$n$^i$</td>
<td>$!*$</td>
<td>$*$</td>
</tr>
<tr>
<td>⇐ O$^2$: con$_{\mu}^h$n$^i$</td>
<td>$*</td>
<td>**$</td>
</tr>
</tbody>
</table>

$S^h \rightarrow \mu$: Assign $*$ to every laryngeally specified sonorant node which is not moraic.

Assumption: Geminates are moraic, whereas coda consonants are not moraic (There is no evidence for moraicity of codas).
### Stem level: Gemination

**T₃. Stem-level,**

<table>
<thead>
<tr>
<th></th>
<th>I: co[+sg]-ni</th>
<th>Sʰ → μ</th>
<th>DEP μ, *Sʰ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O¹: co.nⁱ</td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td></td>
<td>O²: conₜⁱ</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

➢ Sʰ → μ: Assign * to every laryngeally specified sonorant node which is not moraic

➢ Assumption: Geminates are moraic, whereas coda consonants are not moraic (There is no evidence for moraicity of codas).
At the stem level, a geminate with laryngeal specification is optimal.
### Stem level: Allomorph selection \{in, n\}

**\(T_4\). Stem-level, allomorph selection**

<table>
<thead>
<tr>
<th>I: co(^+[\text{sg}]) ({\text{in, n}})</th>
<th>(S^h \rightarrow \mu)</th>
<th>DEP (\mu)</th>
<th>(*V.V)</th>
<th>(*V^h)</th>
<th>(*S^h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O(^1): co.o(^h) n</td>
<td></td>
<td></td>
<td>(\ast)</td>
<td>(\ast)</td>
<td></td>
</tr>
<tr>
<td>O(^2): con(^h)</td>
<td>(\ast!)</td>
<td></td>
<td></td>
<td></td>
<td>(\ast)</td>
</tr>
<tr>
<td>O(^3): con(^h) (\mu)</td>
<td>(\ast!)</td>
<td></td>
<td></td>
<td></td>
<td>(\ast!)</td>
</tr>
</tbody>
</table>

Gleim & Lee (Uni Leipzig)

Fairy Roots

MFM- 23rd May 2019 28 / 54
### Stem level: Allomorph selection \{in, n\}

#### $T_4$. Stem-level, allomorph selection

<table>
<thead>
<tr>
<th>I: co$^{+\text{sg}}$ {in, n}</th>
<th>$S^h \rightarrow \mu$</th>
<th>DEP $\mu$</th>
<th>$^*V.V$</th>
<th>$^*V^h$</th>
<th>$^*S^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$O^1$: co.$^h$ n</td>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>$O^2$: con.$^h$</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>$O^3$: con.$^\mu$</td>
<td></td>
<td></td>
<td>*!</td>
<td></td>
<td>**</td>
</tr>
</tbody>
</table>
### Stem level: Allomorph selection \{mnita, simnita\}

**T5. Stem-level, allomorph selection**

<table>
<thead>
<tr>
<th>I: (\text{co}^{+\text{sg}}) {mnita, simnita}</th>
<th>(S^h \rightarrow \mu)</th>
<th>DEP (\mu)</th>
<th>(*V.V)</th>
<th>(*V^h)</th>
<th>(*S^h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>O^1: co(^h)im.ni.ta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^2: com(^h)ni.ta</td>
<td>(*!)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^3: com(^h)(\mu)ni.ta</td>
<td>(*!)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Stem level: Allomorph selection \{mnita, simnita\}

#### $T_5$. Stem-level, allomorph selection

<table>
<thead>
<tr>
<th></th>
<th>$\text{co}^{+\text{sg}} {\text{mnita, simnita}}$</th>
<th>$S_h \rightarrow \mu$</th>
<th>DEP $\mu$</th>
<th>$*V.V$</th>
<th>$V^h$</th>
<th>$*S^h$</th>
</tr>
</thead>
<tbody>
<tr>
<td>O$^1$:</td>
<td>$\text{co.$^h$im.ni.ta}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O$^2$:</td>
<td>$\text{com.$^h$.ni.ta}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O$^3$:</td>
<td>$\text{com.$^h$.ni.ta}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gleim & Lee (Uni Leipzig) | Fairy Roots | MFM– 23rd May 2019 | 29 / 54
### Stem level: Allomorph selection \{mnita, simnita\}

#### T₅. Stem-level, allomorph selection

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I: co(+sg) {mnita, simnita}</td>
<td>(S^h \rightarrow \mu)</td>
<td>DEP (\mu)</td>
<td>(*V.V)</td>
<td>(*V^h)</td>
</tr>
<tr>
<td>O¹: co(h^h)im.ni.ta</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O²: com(h^h)ni.ta</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>O³: com(\mu)ni.ta</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Could our analysis be simpler?
Our representation:

(22) /na^{+sg} / ‘give.birth’

(23) /na^{+cg} / ‘get.better’

(24) /na / ‘occur’
Could our analysis be simpler?

**Argument for floating features**

Our representation:

(22) /na\textsuperscript{+sg}/

‘give.birth’

(23) /na\textsuperscript{+cg}/

‘get.better’

(24) /na/

‘occur’

Alternative representation:

(25) /nah/

‘give.birth’

(26) /na?/

‘get.better’

(27) /na/

‘occur’
However, Korean has no intervocalic /h/-deletion:

(28) a. /ihon/ \rightarrow [i.hon] ‘divorce’
    * [i.on]

b. /coh-a-hæ/ \rightarrow [co.a.hæ] ‘like.TR’
    * [co.ha.hæ]
    * [co.a.æ]
Could our analysis be simpler?

Argument against indexed constraints

In this approach, morpheme specific phonology is derived by lexically indexed constraints (e.g. Benua (1997b,a))

Alternative Representation:

(29) /\text{na}_A/ \quad \text{‘give.birth’}

(30) /\text{na}_B/ \quad \text{‘get.better’}

(31) /\text{na}_C/ \quad \text{‘occur’}
Could our analysis be simpler?

Argument against indexed constraints

Alternative Representation:

(32) /na_A/ 'give.birth'
(33) /na_B/ 'get.better'
(34) /na_C/ 'occur'

Necessary Constraints:

⋆ VC_A,B: No plain obstruent in this context
⋆ VC' A: No glottalised obstruent in this context
⋆ VC_B: No aspirated obstruent in this context
⋆ Uniformity_A,B: No fusion in this context
⋆ S → µ_A,B: Gemination of sonorants in this context

In addition, allomorph selection should be able to have an access to the indices.
Argument against indexed constraints

Alternative Representation:

(32) /na_A/ 'give.birth'
(33) /na_B/ 'get.better'
(34) /na_C/ 'occur'

Necessary Constraints:

⋆ *VC_{A,B}: No plain obstruent in this context
Could our analysis be simpler?  Argument against indexed constraints

**Argument against indexed constraints**

- **Alternative Representation:**
  
  \[(32) \quad /na_A/ \quad (33) \quad /na_B/ \quad (34) \quad /na_C/\]

  - (32) /na_A/ ‘give.birth’
  - (33) /na_B/ ‘get.better’
  - (34) /na_C/ ‘occur’

- **Necessary Constraints:**
  
  - *VC_{A,B}: No plain obstruent in this context*
  - *VC’_{A}: No glottalised obstruent in this context*
Could our analysis be simpler?

Argument against indexed constraints

Alternative Representation:

\begin{align}
(32) & /\text{na}_A/ & (33) & /\text{na}_B/ & (34) & /\text{na}_C/ \\
& \text{‘give.birth’} & & \text{‘get.better’} & & \text{‘occur’}
\end{align}

Necessary Constraints:

\begin{itemize}
  \item *VC_{A,B}: No plain obstruent in this context
  \item *VC’_{A}: No glottalised obstruent in this context
  \item *VC^h_{B}: No aspirated obstruent in this context
\end{itemize}
Could our analysis be simpler?

**Argument against indexed constraints**

Alternative Representation:

\[(32) /na_A/ \quad \text{‘give.birth’} \quad (33) /na_B/ \quad \text{‘get.better’} \quad (34) /na_C/ \quad \text{‘occur’}\]

Necessary Constraints:

- \(^*\text{VC}_{A,B} \): No plain obstruent in this context
- \(^*\text{VC’}_A \): No glottalised obstruent in this context
- \(^*\text{VC}^h_B \): No aspirated obstruent in this context
- \(^*\text{UNIFORMITY}_{A,B} \): No fusion in this context
Could our analysis be simpler?

Argument against indexed constraints

Alternative Representation:

(32) /na_A/ ‘give.birth’
(33) /na_B/ ‘get.better’
(34) /na_C/ ‘occur’

Necessary Constraints:

*VC_{A,B}: No plain obstruent in this context
*VC’_A: No glottalised obstruent in this context
*VC^h_B: No aspirated obstruent in this context
UNIFORMITY_{A,B}: No fusion in this context
S → μ_{A,B}: Gemination of sonorants in this context
Could our analysis be simpler?

Argument against indexed constraints

Alternative Representation:

(32) /na_A/ 'give.birth'

(33) /na_B/ 'get.better'

(34) /na_C/ 'occur'

Necessary Constraints:

★ *VC_{A,B}: No plain obstruent in this context
★ *VC'_A: No glottalised obstruent in this context
★ *VC^h_B: No aspirated obstruent in this context
★ UNIFORMITY_{A,B}: No fusion in this context
★ S → µ_{A,B}: Gemination of sonorants in this context
★ ...

In addition, allomorph selection should be able to have an access to the indices.
In this approach, morpheme specific phonology is derived by morpheme specific rankings (e.g. Orgun (1996, 1998); Inkelas (1998)).

Alternative Representation:

(35) /nah/ 'give.birth'
(36) /naʔ/ 'get.better'
(37) /na/ 'occur'
Could our analysis be simpler?

Argument against cophonology

Problem for cophonology

- Default Constraints ranking: Max » *VhV
- Constraints ranking for A: *VhV » Max

(38)

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>coh-A</td>
<td>co.A</td>
<td>*VhV » Max</td>
</tr>
<tr>
<td>co.a-ha</td>
<td>co.a.ha</td>
<td>Max » *VhV</td>
</tr>
<tr>
<td>co.a.ha-A</td>
<td>*co.a.a.æ</td>
<td>*VhV » Max</td>
</tr>
</tbody>
</table>

Still, bleeding of coalescence remains mysterious.
Could our analysis be simpler?

Argument against cophonology

Problem for cophonology

- Default Constraints ranking: MAX \(\gg\) *VhV
- Constraints ranking for A: *VhV \(\gg\) MAX

\[(38)\]

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>coh-A</td>
<td>co.A</td>
<td>*VhV (\gg) MAX</td>
</tr>
<tr>
<td>co.a-ha</td>
<td>co.a.ha</td>
<td>MAX (\gg) *VhV</td>
</tr>
<tr>
<td>co.a.ha-A</td>
<td>*co.a.a.æ</td>
<td>*VhV (\gg) MAX</td>
</tr>
</tbody>
</table>

- Still, bleeding of coalescence remains mysterious.
Conclusion
We found a new generalisation on how laryngeal contrast of Korean S/V verbal roots affects the paradigm.
Conclusion

Summary

- We found a new generalisation on how laryngeal contrast of Korean S/V verbal roots affects the paradigm.

- We provided the evidence for a floating feature that in combination with strata accounts for the observed opacity.
  - The floating feature docks to the affixes, which changes the laryngeal specification.
  - The laryngealised S/V behaves differently for some processes and allomorph selection.
  - At the next level, this contrast is neutralised, unlike on the obstruents, rendering the previous processes opaque.
Our work contributes to the discussion of whether Duke-of-York derivations are parts of human language capacity (Bermúdez-Otero, Ricardo 2001; Rubach 2003; Gleim 2018; Rasin 2019).

Our analysis is also compatible with Yun (2008)’s proposal of strata in Korean and extends the noun-verb asymmetries observed by her.
Thank you!

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hyunjung.lee@uni-leipzig.de
University of Leipzig
l-deletion

Korean does not tolerate lateral-nasal clusters (i.e., *NL, *LN).

- NL → NN ~ LL
- LN → ØN

(only at the stem level)
Korean does not tolerate lateral-nasal clusters (i.e., *NL, *LN).

⋆ NL → NN \sim LL
⋆ LN → \emptyset N \quad (\text{only at the stem level})

(39)  
a. /inlju/ → [il.lju] ‘mankind’
b. /koŋljoŋ/ → [koŋ.njoŋ] ‘dinosaur(s)’

(40)  
a. /al-ni/ → [a.ni] *[al.ni] ‘know.Q’
b. /kal-næ/ → [ka.næ] *[kal.næ] ‘grind.CGR’
Lateral fairy roots resist /l/-deletion.

(41) a. /al-ni/ $\rightarrow$ [a.ni] *[al.ni] ‘know.Q’
    b. /al\,+sg\,-ni/ $\rightarrow$ [al.ni] *[a.ni] ‘suffer.Q’
**Appendix**

## Stem level: l-deletion

\[ \text{AGREE}^{[\pm\text{nas}]}_{[+\text{vc}]} , \text{MAX-F} \gg *S^h \]

### T₆. Stem-level /al/

<table>
<thead>
<tr>
<th></th>
<th>I: al-ni</th>
<th>AGREE(^{[\pm\text{nas}]}_{[+\text{vc}]})</th>
<th>MAX</th>
<th>MAX-F</th>
<th>*S^h</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₁:</td>
<td>al.ni</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O₂:</td>
<td>a.ni</td>
<td>*</td>
<td></td>
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### T₇. Stem-level /al\(^{\pm\text{sg}}\)/

<table>
<thead>
<tr>
<th></th>
<th>I: /al(^{\pm\text{sg}})-ni/</th>
<th>AGREE(^{[\pm\text{nas}]}_{[+\text{vc}]})</th>
<th>MAX</th>
<th>MAX-F</th>
<th>*S^h</th>
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<tbody>
<tr>
<td>O₁:</td>
<td>al.n (^{h})i</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>O₂:</td>
<td>al.ni</td>
<td>*!</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>O₃:</td>
<td>a.ni</td>
<td>*</td>
<td>*</td>
<td>*!</td>
<td></td>
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</table>

**AGREE\(^{[\pm\text{nas}]}_{[+\text{vc}]}\)**: Count one violation for each pair of adjacent voiced consonant that has a different value for the feature \([\pm \text{nas}]\).
### Word level: l-deletion

\[*S^h \Rightarrow \text{AGREE}_{[\pm \text{nas}]}^{[+\text{vc}]}, \text{MAX-F}\]

#### T8. Word-level /\textit{al}/

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<thead>
<tr>
<th>I: a.ni</th>
<th>*S^h</th>
<th>MAX</th>
<th>AGREE_{[\pm \text{nas}]}^{[+\text{vc}]}</th>
<th>MAX-F</th>
</tr>
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<tbody>
<tr>
<td>O^1: a.ni</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^2: a.i</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^3: a.ni</td>
<td></td>
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#### T9. Word-level /\textit{al}^{+sg}/

<table>
<thead>
<tr>
<th>I: a.l.n^{h}i</th>
<th>*S^h</th>
<th>MAX</th>
<th>AGREE_{[\pm \text{nas}]}^{[+\text{vc}]}</th>
<th>MAX-F</th>
</tr>
</thead>
<tbody>
<tr>
<td>O^1: a.l.n^{h}i</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^2: a.ni</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^3: a.ni</td>
<td></td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O^4: a.ni</td>
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Gleim & Lee (Uni Leipzig)  
Fairy Roots  
MFM– 23rd May 2019
Allomorphy of $v$

- All existing nasal-final roots are fairy roots.

(42) \[
\begin{array}{c|c}
\text{Roots} & -C \\
\hline
\text{n} & \text{-C'} \\
\hline
\text{n} & \text{-C}^h \\
\hline
\text{m} & \text{-C'} \\
\end{array}
\]

- Post-nasal Laryngealisation is not a general rule in Korean nor in verbal domain.

(43)  
\begin{align*}
a. & \quad /\text{kam-nin-ta}/ \rightarrow [\text{kam.nin.ta}] \quad \text{‘wind-PROG-DECL’} \\
b. & \quad /\text{kam-ta}/ \rightarrow [\text{kam.t’a}] \quad \text{‘wind-DECL’}
\end{align*}
Hypothesis:

- **Hypothesis:** Little $v$ has two allomorphs: $[+cg]$ and $\emptyset$.
- $v +cg$ selects nasal-final roots.

(44) and (45) show the two cases:

- (44) $v$ selects nasal-final roots:
  - $v +cg$ roots
  - PROG

- (45) $v$ selects root-final roots:
  - $v +cg$ roots
  - PROG

These diagrams illustrate the differences in root selection based on the presence or absence of the $+cg$ allomorph.
Evidence from a pilot wug test

3 native speakers of Korean were participated in this pilot test.

The test consisted of two parts:
- the participants learn three nasal-final wug stems with corresponding videos.
  i.e., /him/, /pin/, /uŋ/

- the participants are asked to answer different inflected forms (i.e., /-taka/, /-ko is’o/) of wug verbs.
Evidence from a pilot wug test

- The participants learn three nasal-final wug stems with corresponding videos.

Q: 고양이가 뭐 해? [Play]  
‘What does the cat do?’
Evidence from a pilot wug test

The participants learn three nasal-final wug stems with corresponding videos.

A: 고양이가 흔어. .Play

‘The cat /him/s.’
Evidence from a pilot wug test

The participants are asked to answer different inflected forms (i.e., /-taka/, /-ko is’ə/) of wug verbs.

Q: 고양이가 뭐 하고 있어?  
‘What is the cat doing?’

A: 고양이가 ____________

Prediction: [him.k’o i.s’ə]
## Results the pilot wug test

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<th>Speaker A</th>
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<td>/him/</td>
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<td>/uŋ/</td>
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<tr>
<td>/-taka/</td>
<td>[him. t’a.ka]</td>
<td>[pin. t’a.ka]</td>
<td>[uŋ. t’a.ka]</td>
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<td>[pin. k’o]</td>
<td>[uŋ. k’o]</td>
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<td>[uŋ. t’a.ka]</td>
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<tr>
<td>/-ko is’ə/</td>
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<td>[pin. k’o]</td>
<td>[uŋ. k’o]</td>
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<table>
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<td>/pin/</td>
<td>/uŋ/</td>
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<tr>
<td>/-taka/</td>
<td>[him. t’a.ka]</td>
<td>[pin. t’a.ka]</td>
<td>[uŋ. t’a.ka]</td>
<td></td>
</tr>
<tr>
<td>/-ko is’ə/</td>
<td>[him. k’o]</td>
<td>[pin. k’o]</td>
<td>[uŋ. k’o]</td>
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</tbody>
</table>


