Coratino

- Vowel reduction in Coratino
- Phonological identity of stress
- Phonological identity of s+C
- Relationship between labiality and velarity
- Interaction and difference between s+C with labiality/velarity
Coratino: vocalic system

<table>
<thead>
<tr>
<th>in stressed position: 7 vowels</th>
<th>in unstressed position: 2 vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>front</strong></td>
<td><strong>central</strong></td>
</tr>
<tr>
<td>i</td>
<td>u</td>
</tr>
<tr>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>ε</td>
<td>ë</td>
</tr>
<tr>
<td>a</td>
<td></td>
</tr>
</tbody>
</table>
7 phonemes /i, e, ɛ, u, o, ɔ, a/

s'iccə  "dry"
v'eŋə  "he comes"
v'ɛŋə  "vein"
k'usə  "him"
s'ɔkə  "I am"
s'ɔkə  "rope"
ɔs'əppə  "hope"
Stress

- In an isolated root: stress cannot be predicted (lexical stress)
- Root + suffix: stress is always on the suffix.

"wheel" rˈotə  "small wheel" rət + ˈɛddə
The phenomenon: reduction

- D’Introno & Weston (1997): V → ə in unstressed positions except /a/ → [a]

\[\begin{array}{llll}
\text{n_} & \text{"fennel"} & \text{fan\textsuperscript{u}cca} & \text{"little fennel"} & \text{fan\textsuperscript{acc}ettə} \\
\text{r_} & \text{"wheel"} & \text{r\textsuperscript{otə}} & \text{"small wheel"} & \text{rat\textsuperscript{ɛddə}} \\
\text{m_} & \text{"apple"} & \text{m\textsuperscript{ələ}} & \text{"small apple"} & \text{məl\textsuperscript{ɛddə}} \\
\text{_m} & \text{"file"} & \text{l\textsuperscript{i}mə} & \text{"to file"} & \text{ləm\textsuperscript{ə}tə} \\
\end{array}\]
The phenomenon: non-reduction

- D'Introno & Weston (1997) and Bucci (2009): V → V in stressed position if the adjacent consonant shares a melodic feature.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Word</th>
<th>phonetic</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>p_</td>
<td>&quot;poor&quot;</td>
<td>pʰəvəɾə</td>
<td>&quot;little poor&quot;</td>
</tr>
<tr>
<td>k_</td>
<td>&quot;tincture&quot;</td>
<td>kʰúndzəɾ</td>
<td>&quot;tanner&quot;</td>
</tr>
<tr>
<td>_m</td>
<td>&quot;lamp&quot;</td>
<td>l'umə</td>
<td>&quot;small lamp&quot;</td>
</tr>
<tr>
<td><em>f</em></td>
<td>&quot;fog&quot;</td>
<td>n'ɛʃə</td>
<td>&quot;a lot of smog&quot;</td>
</tr>
<tr>
<td><em>f</em></td>
<td>&quot;daughter&quot;</td>
<td>f'ijʃə</td>
<td>&quot;small daughter&quot;</td>
</tr>
<tr>
<td>k_</td>
<td>&quot;tincture&quot;</td>
<td>k'andzə</td>
<td>&quot;tanner&quot;</td>
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<td>-----</td>
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<tr>
<td>g_</td>
<td>&quot;august&quot;</td>
<td>ag'usto</td>
<td>&quot;trout&quot;</td>
</tr>
<tr>
<td>_ŋ</td>
<td>&quot;bottle&quot;</td>
<td>butt'eyə</td>
<td>&quot;small bottle&quot;</td>
</tr>
<tr>
<td>_ʧ</td>
<td>&quot;daughter&quot;</td>
<td>fiʃə</td>
<td>&quot;to mother&quot;</td>
</tr>
<tr>
<td>c_</td>
<td>&quot;fold&quot;</td>
<td>c'ɛkə</td>
<td>&quot;to fold&quot;</td>
</tr>
<tr>
<td>c_</td>
<td>&quot;church&quot;</td>
<td>c'esə</td>
<td>&quot;small church&quot;</td>
</tr>
</tbody>
</table>
Non-reduction: a new context

1. adjacent to a consonant which shares a melodic feature (labiality, velarity or palatality)
2. stressed position
3. the beginning of the word

1, 2 and 3 have the same effect = lack of reduction

Disjunction → 1, 2 and 3 have something in common
Sharing makes us stronger


- Inalterability of geminates
  for ex: in Tiberian Hebrew (see Selkirk: 1991):

Postvocalic geminate plosives are not subject to spirantisation
Branching between unstressed vowel and consonant sharing a feature

- unstressed vowel:
  - labial adjacent to labial consonant
  - velar adjacent to velar consonant
  - Palatal adjacent to palatal consonant

![Branching Structure Diagram]

Conclusion: stressed vowel = branching structure therefore structurally long vowel
CVCV

- syllabic structure: CVCV (Lowenstamm 1996, Scheer 2004): lateral relations are used instead of trees

- Minimal unit: CV unit

<table>
<thead>
<tr>
<th>Final consonant</th>
<th>Closed syllable</th>
<th>Branching onset</th>
<th>Geminate consonant</th>
<th>Geminate vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>C V</td>
<td>C V C V</td>
<td>C V C V</td>
<td>C V C V</td>
<td>C V C V</td>
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<td>C V C</td>
<td>C V C</td>
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<td></td>
<td></td>
<td>C</td>
<td>V</td>
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</tbody>
</table>
Identity of stress

- D’Introno & Weston (1997): untreated

in CVCV = CV unit [stress CV]

<table>
<thead>
<tr>
<th>stressed vowel in Coratino</th>
<th>unstressed vowel in Coratino</th>
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</thead>
<tbody>
<tr>
<td>C V [C V] stress</td>
<td>C V</td>
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<td>\ \</td>
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<tr>
<td>C V</td>
<td>C V [ə]</td>
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</tbody>
</table>

[V]
Vocalic branching on the stress CV and on the melody of the consonant

1) "lamp" [l'umə]
   C  V  [C  V]  C  V
   [u]
   l  u  m  a
   [u]

2) "small lamp" [lum'ina]
   C  V  C  V  [C  V]  C  V
   l  u  m  i  n  a
   [u]

3) "church" [c'esə]
   C  V  [C  V]  C  V
   [e]
   c  e  s  a
   [e]

4) "small church" [cezar'edə]
   C  V  C  V  C  V  [C  V]  C  V  C  V
   [e]
   c  e  s  a  r  e  d  a
   [e]
Vocalic branching on the stress CV but NOT on the melody of the consonant

1) "wheel" [rˈotə]
   C  V  [C  V]  C  V
   |   |   |   |
   r  o  t  e  a
   [o]

3) "apple" [mˈelə]
   C  V  [C  V]  C  V
   |   |   |   |
   m  e  l  e  a
   [e]

2) "small wheel" [rətˈɛdə]
   C  V  C  V  [C  V]  C  V  C  V
   |   |   |   |   |
   r  o  t  ε  d  e  a
   [ə]

4) "small apple" [məlˈɛdə]
   C  V  C  V  [C  V]  C  V  C  V
   |   |   |   |   |
   m  e  l  ε  d  e  a
   [ə]
The beginning of the word

- 3rd context which resists reduction (unstressed vowel): word-initially

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Word (dim)</th>
<th>Pronunciation</th>
<th>Small nail</th>
<th>Pronunciation</th>
<th>Small grass</th>
<th>Pronunciation</th>
<th>To finish</th>
<th>Pronunciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;nail&quot;</td>
<td>[ˈɔrnə]</td>
<td>&quot;nail (dim)&quot;</td>
<td>[ɔrnəˌuθdə]</td>
<td>&quot;small nail&quot;</td>
<td>[oʊˈnəuθdə]</td>
<td>&quot;small grass&quot;</td>
<td>[ɛrˈvæθˈɛddə]</td>
<td>&quot;to finish&quot;</td>
<td>[ultəmə]</td>
</tr>
<tr>
<td>&quot;grass&quot;</td>
<td>[ˈɛrvə]</td>
<td>&quot;grass (dim)&quot;</td>
<td>[ɛrvəˌuθdə]</td>
<td>&quot;small nail&quot;</td>
<td>[oʊˈnəuθdə]</td>
<td>&quot;small grass&quot;</td>
<td>[ɛrˈvæθˈɛddə]</td>
<td>&quot;to finish&quot;</td>
<td>[ultəmə]</td>
</tr>
<tr>
<td>&quot;last&quot;</td>
<td>[ˈultəmə]</td>
<td>&quot;last (dim)&quot;</td>
<td>[ultəθə]</td>
<td>&quot;small nail&quot;</td>
<td>[oʊˈnəuθdə]</td>
<td>&quot;small grass&quot;</td>
<td>[ɛrˈvæθˈɛddə]</td>
<td>&quot;to finish&quot;</td>
<td>[ultəmə]</td>
</tr>
</tbody>
</table>

- Resistance to reduction implies the presence of a branching vowel

- Hence, word-initial vowels must be “branching”, i.e. long
"The beginning of the word"

- Lowenstamm (1999): the beginning of the word is an empty \{CV\} site

1) "small hour" [ˈɛltə]

2) "to lime" [ləmˈatə]

Generalisations

- Branching vowels are not reduced:
  - stress = space (stress CV)
  - sharing melodic primes (lab/vel or pal) between a V and C or between C and V.
  - word initial = space on the left (initial CV)

- Non-branching vowels are reduced
Virtual length

- Assumption: there may be a difference between the phonological representation of an object and its phonetic realisation.

<table>
<thead>
<tr>
<th>/VV/</th>
<th>/V/</th>
</tr>
</thead>
<tbody>
<tr>
<td>[i, e, ɛ, u, o, ɔ, a]</td>
<td>[ə]</td>
</tr>
</tbody>
</table>

### Asymmetry labial/velar

| p_ | "poor" | p'o:n|'γγ | "small poor" | p'o:n|'γγ|'γγ |
|-----|--------|------|---------|----------|------|------|
| sp_ | "sponge" | sp'ɲɲ | "to sponge" | sp'ɲɲ | a |
| sp_ | "to answer" | rəsp'ɲɲ | "you answered" | rəsp'ɲɲ | u'te |
| k_ | "tincture" | k'ɔndʒə | "tanner" | k'undʒat'o:ɾa |
| sk_ | "brush" | sk'opə | "small brush" | skpəd'|'γγ |
| sk_ | "obscure" | sk'urə | "to obscure" | skur'|'γγ |
## Peculiarities

- [ɔ] stressed → [o] unstressed/C lab  
  \[p\acute{\text{cv}}\text{cn}\overline{\text{r}}\acute{\text{e}}\acute{\text{n}}\]  
  \[\text{pov}\acute{\text{r}}\acute{\text{e}}\acute{\text{i}}\acute{\text{dd}}\acute{\text{n}}\acute{\text{e}}\]  

- [ɛ], [o] stressed → [u] unstressed/C vél  
  \[k\acute{\text{v}}\acute{\text{n}}\acute{\text{\ddot{z}}}\acute{\text{e}}\acute{\text{n}}\]  
  \[\text{kundzat\acute{\text{o}}r\acute{\text{n}}\acute{\text{e}}}\]  

- [ɛ] stressed → [ε] unstressed/C pal  
  \[n\acute{\text{v}}\acute{\text{j}}\acute{\text{e}}\acute{\text{n}}\]  
  \[\text{nejf\acute{\text{j}}\acute{\text{usn}\acute{\text{e}}}}\]  

- [o, ɔ, u] stressed → [ə] unstressed/sp_  

- [o, ɔ, u] stressed → [u] unstressed/sk_
Closure of the unstressed vowel in Italian

- In Italian, the – ATR vowel is stronger than the + ATR vowel cf. Krämer (2009): 100

[ɔ] → [o] = "early" reduction
[ɛ] → [e] = "early" reduction

orthoped'i:a       "orthopedic"       ł'ożyka       "logic"
ortop'ědiko     "orthopedist"       łożikam'ente       "logically"
**s+C Mystery**

- It is well known that labial and velar consonants are closely related to back vowels cf. Scheer (1996,1999) and Ségéral (1995).

- **Coratino presents a surprisingly mixed situation:** back vowels interact with labial and velar consonants BUT not when these are in an "s+C" cluster.

- Labials and velars share part of their melodic identity, while at the same time they are melodically different. Finally, the difference is triggered by a preposed "S".
Element theory \textit{cf.} KLV (1985), Backley (2011)

\begin{align*}
I &= \text{palatality} & [i] &= |I| \\
U &= \text{labiality/velarity} & [e] &= |I| + |A| \\
A &= \text{lowness} & [\varepsilon] &= |I| + |A| \\
? &= \text{constriction (occlusion)} & [a] &= |A| \\
h &= \text{continuity (fricative)} & [u] &= |U| \\
\circ &= |U| + |A| \\
\text{KLV: the U element represents both labiality and velarity.}
\end{align*}

Théorie des éléments \textit{cf.} KLV (1985), Backley (2011)

I = palatalité \hfill [i] = |I|
U = labialité/vélarité \hfill [e] = |I| + |A|
A = bas \hfill [ε] = |I| + |A|
? = constriction (occlusion) \hfill [a] = |A|
h = continuité (fricative) \hfill [u] = |U|
N = nasalité \hfill [o] = |U| + |A|
H = cordes vocales tendues (voix) \hfill [ɔ] = |U| + |A|
L = cordes vocales relâchées (sourd)
R = coronalité
Melodic representation: Element theory \textit{cf.}, Backley (2011)

Backley (2011) proposes that labials and velars contain the element \(|U|\).

But to differentiate them: \begin{align*}
\text{Labial} &= |U| \\
\text{Velar} &= |U| \\
[i] &= |I| \\
[e] &= |I| + |A| \\
[\varepsilon] &= |I| + |A| \\
[a] &= |A| \\
[u] &= |U| \\
[o] &= |U| + |A| \\
[\omega] &= |U| + |A|
\end{align*}

Hence

\begin{align*}
[p] &= |U| + |h| + |?| \\
[k] &= |U| + |h| + |?|
\end{align*}

Another element: Palatal = \( |I| \)
Hypothesis

- The difference between labial, palatal vs velar i.e. headed vs non-headed.

- **idea:**
  - the consonant's headed element = no reduction
  - the consonant's non-headed element = reduction

For branching to occur, the element which the consonant shares with the vowel has to be the head.

But with velars or "SK" clusters= no reduction to schwa in unstressed position. This would be a reduction to schwa but the |U| element colors the unstressed vowel.

This would explain why [o] → [u]/C vel and in "SK" clusters (same principle)
Elimination

- **Affricate?**

Can we find palatal affricates that protect unstressed palatal vowels?

If s+C had this identity, the vowel would be reduced to schwa.

ex:  s`ɛdɔzə  sedɛzət`ɛppə
     ɗz'ɛŋŋə  ɗζɛŋŋə ɛnə
     ɗɛpə  ɗjɛpə ɛnəpu
Elimination

- $S+C = \text{coda-onset sequence}$?

Can we find labial coda-onset sequences that protect unstressed labial vowels?

If s+C had this syllabic identity, the vowel would be reduced to schwa.

ex: \text{ambull'ina} \quad "\text{cruet}"

\text{karbun'ata} \quad "\text{carbonate}"
Representations

1) [pʰəvəɾə] "poor"
   C   V   [C   V]   C   V...
   |   |   |   |   |   |
   ?   U   |   |   |   |   |   |
   |   |   h   |   |   |   |   |
   |   |   |   U   A   |   |   |   |
   |   |   |   |   |   |   |   p   c   [pʰəvəɾə]

2) [pəvəɾˈiədə] "dim"
   C   V   C   V   C   V...
   |   |   |   |   |   |
   ?   U   |   |   |   |   |   |
   |   |   h   |   |   |   |   |
   |   |   |   U   A   |   |   |   |
   |   |   |   |   |   |   |   p   o   [pəvəɾˈiədə]
Representations

1) [c'εkə] "fold"

2) [cek'a] "to fold"
### Representations

1) [k'ondzə] "tincture"

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>V</th>
<th>[C V]</th>
<th>C V...</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>?</td>
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<td></td>
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<tr>
<td>k</td>
<td>c</td>
<td></td>
<td></td>
<td>[kondzə]</td>
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</tbody>
</table>

2) [kundzat'orə] "tanner"

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>V</th>
<th>C</th>
<th>V</th>
<th>C</th>
<th>V...</th>
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<tr>
<td>k</td>
<td>e</td>
<td></td>
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<td></td>
<td></td>
<td>[kundzat'orə]</td>
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</tbody>
</table>
s+C = beheading

- If my idea is correct:
  - "S" removes the head of the labial and the palatal elements. "S" contains the head of the cluster \([s] = I + A + h\)
  - "S" does not remove the head of the velars (these don't have a head)

There is thus reduction but the consonant's element |U| colors the unstressed vowel.
Identity of s+C in Coratino

1) C V C V
   ┌──┬──┐ ┌──┬──┐
   │   │   │   │   │
   │ ? │ U │   │ U │
   │   │   │   │   │
   A h A
   ┌──┬──┐ ┌──┬──┐
   h U → U h U
   ┌──┬──┐ ┌──┬──┐
   s φ p u s φ k o

[sp’unτa] [spændz’a] [æ] [sk’opə] [skupət’ɔpə] [u]
Identity of s+C in Coratino

<table>
<thead>
<tr>
<th>1)</th>
<th>C</th>
<th>V</th>
<th>C</th>
<th>V</th>
<th>[C</th>
<th>V]</th>
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h → l

<table>
<thead>
<tr>
<th>2)</th>
<th>C</th>
<th>V</th>
<th>C</th>
<th>V</th>
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<tr>
<td>A</td>
<td>h</td>
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</table>

h → l

∅ c ε

∅ c ε

đćεkə "explain"

đća "to explain" [ə]
Conclusion and results

- My new analysis follows the reasoning of the first one which claims that a vowel that branches is fully realized, but it did not take into account the head elements vs non-head elements.

- A vowel that does not branch is not linked to the X unit = reduction to schwa.

- It explains the peculiarity of the vowels (ɔ → o, ɔ → u, ɛ → e)

- It allows to account for the unstressed vowel reduction when the "s+C" cluster precedes it.

- I also propose a new identity for the "s+C" cluster.
Syllabic identity of "s+C"

The literature proposes different syllabic identities for S+C, three approaches to the "s+C":


- **S+C = coda-onset sequence** cf. Kaye (1992)
Merci