PART A: Theoretical Concerns

Introduction and Aims

- Geminates (Gs) may appear in any position (initial, medial, final) with the intervocalic one being preferred (Thurgood 1993; Pajak 2009; Kraehenmann 2011; Dmitrieva 2012). With respect to edge geminates, word-final ones are more common than word-initial ones.
- Our focus today: edge geminates
- Aim: to offer a preliminary typology of their distribution, weight patterns and behaviour in relationship to other consonant clusters at edges (if applicable)
- We assume moraic theory (Hayes 1989)
- A note on geminate-weight: Two major trends
  - (i) Sw. German and B. Arabic final geminates are moraic; initial geminates are not
  - (ii) Ponapean (also maybe Puluwat, Elbert 1974) and Davis 1999, Topintzi 2010)

Issues to consider

- (A). With respect to weight, do edge geminates pattern as moraic or not?
- (B). The relationship between edge geminates and edge clusters. Languages with initial geminates may or may not have final consonant clusters. Similarly, languages with final geminates may or may not have final clusters
  - i. In languages that have edge geminates and edge clusters, do the geminates and clusters pattern the same way with respect to weight or can geminates be special?

Findings

- ii. In languages that have edge geminates but no edge corresponding edge clusters, are the edge geminates more likely or less likely to be moraic?
- iii. In languages that have both initial and final geminates, how do the edge geminates pattern with respect to weight?

Final Geminates Chart

<table>
<thead>
<tr>
<th>Final Geminates G</th>
<th>None</th>
<th>Moraic</th>
<th>Non-moraic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moraic</td>
<td>&lt;1&gt;  Baghdadi Arabic, Hadrami Arabic</td>
<td>&lt;2&gt; Cairene Arabic, Ponapean, Wolof, Swiss German</td>
<td>&lt;3&gt; Amharic??</td>
</tr>
<tr>
<td>Non-moraic</td>
<td>&lt;4&gt; ---</td>
<td>&lt;5&gt; ---</td>
<td>&lt;6&gt; Hungarian</td>
</tr>
</tbody>
</table>

Initial Geminates Chart

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<tr>
<td>Moraic</td>
<td>&lt;7&gt; Pat. Malay, Slovene, Albanian</td>
<td>&lt;8&gt; Ponapean, Cypriot Greek</td>
<td>&lt;9&gt; Shuri Japanese</td>
</tr>
<tr>
<td>Non-moraic</td>
<td>&lt;10&gt; ---</td>
<td>&lt;11&gt; ---</td>
<td>&lt;12&gt; Leti, Swiss German, Baghdadi Arabic</td>
</tr>
</tbody>
</table>

Discussion

- Weight between initial and final geminates within the same language can either be symmetric or not:
  - (i) Sw. German and B. Arabic final geminates are moraic; initial geminates are not
  - (ii) Ponapean (also maybe Puluwat, Elbert 1974) edge Gs are consistently moraic
  - Certain gaps in the typology arise (i.e. <4>, <5>, <10>, <11>). Are they accidental?
  - If not, we could state the following implicational universals:
    1. If a language has an edge geminate, but no CC-clusters on that edge, then the edge geminate pattern as moraic
    2. If a language has an edge geminate that patterns as non-moraic and allows for CC-clusters on that edge, then the cluster must pattern as non-moraic
  - Other issues we need to consider in more detail
    i. Does it matter if edge geminates are derived or underlying in nature?
    ii. Does the type/quality of CC clusters play a role? For example, word-ends in Ponapean cannot host homorganic nasal obstruent clusters and in Wolof only nasals+voiceless obstruents
    - The presence of <3>-reiterates that the equal weight for codas principle (Tranel 1991) cannot really hold (for the pattern in <3> but word-medially where G and CC span two syllables, see Davis 2011 on Cahuilla and San’ani Arabic, as well as § 3.2)
    - <5> is somewhat challenging: it may not occur word-finally but occurs medially in Ngalakgan (Baker 2008), where CVG does not attract stress, but a singleton coda in CVC (followed by a heterorganic onset) does. So is <5> more likely an accidental gap rather than the other gaps?
    - Note that virtually all non-moraic geminate cases here (including Ngalakgan), with the possible exception of Hungarian, do not speak against the underlying moraicity of geminates. Surface constraints may render them effectively non-moraic (as in Ngalakgan) or they can be re-analysed (Leti). See Topintzi (2010) and Davis (2011) for discussion

PART B: Exemplification

Final Geminates

- Pattern <1> [G = μ, -μ]: Hadhrami Arabic (Bernakrahman 2009) and Baghdadi Arabic (Blanc 1964; Yousef 2013); G-weight evidence: QS stress, minimal words Hadhrami avoids CV and repairs them through epenthesis, e.g. /gird/ /gir̠d/ 'my monkey', but allows G, e.g. /rabb/ 'Lord'
- Pattern <2> [G = μ, μ]: Cairene Arabic (minimality in Kraehenmann 2011: 113), Cairene Arabic (stress, minimality, loanword adaptation in Davis & Ragheb to appear), syllable structure in Ponapean (Goodman 1995; Kennedy 2003) and Wolof (Bell 2003)

Cairene stress pattern:
  a. CVC-heavy in penult but not finally: mak.tab.na 'our office' [mak.tab.na] 'he wrote' [mu.hán.dis] 'engineer'
  b. Final syllable with CC or G always attracts stress [mal.hing] he didn’t understand [katáb] 'I wrote'
  [Tádő] 'lightest' [Tádő] 'most boring'

- Pattern <3> [G = μ, CC]: Possibly Amharic stress (Sand & Hedding 2014): although stress is not prominent, it is assigned trochaically from the L edge, without final stress, unless final syllable hosts a geminate; final CCs although present do not have the same effect

- Pattern <4> [G = μ, CC]: No examples found

- Pattern <5> [G = μ, CC]: No examples found (but see Ngalakgan above)
- Pattern <6> [G = μ, CC] = Hungarian (Ringen & Vago 2011; Siptár & Törkenczy 2008): G and CC pattern together (e.g. triggering epenthesis when a suffix initial coronal C is added), but there’s no evidence suggesting their moraicity

Initial Geminates

- Pattern <8> [G = μ, μ]: P. Malay: initial α deletion and CL through gemination, e.g. [bəwi] = [wí] 'give'

- Pattern <9> [G = μ, CC]: Cypriot Greek (Arsmith 2011), Ponapean (Kennedy 2003) C. Greek: Arsmith treats [G and [CC = moraic. Both trigger processes, such as final-α deletion and r-epenthesis of preceding α and particle μ, respectively. Singleton or stop-on CC's don't trigger those, e.g. [eni p'mall] 'I don't call', [eni kseko] 'I don't know' vs. [em bal] 'it doesn't go'. [em bal] 'it' doesn't float ['eni pie']
- Pattern <10> [G = μ, CC = Shuri Japanese (Shimojo 2012) bimoraic moraicity is satisfied by CV, e.g. [ců] 'person', but not by [CCV words, e.g. [twa]
- Pattern <11> [G = μ, CC = No examples found
- Pattern <12> [G = μ, CC = Pali: -lees: Neither Leti nor S. German fulfill their bimoraicity minimum through [G or [CC, which are therefore treated as light