The paragoge asymmetry (word-final epenthesis)

(1) Creole exceptionalism
   a. Bioprogram hypothesis: Simplification ← Child L1 acquisition (Bickerton 1984)
   b. Creole prototype hypothesis: Simplification ← Adult L2 acquisition (McWhorter 2001, 2011)
   c. Proposed here: Diachronic difference ← Adult L2 acquisition (cf. Ng 2011a, 2011b)

(2) Final C repairs

<table>
<thead>
<tr>
<th></th>
<th>L1 transmission</th>
<th>Language contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Weakening • big &gt; bik &gt; biʔ &gt; biØ</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>b. Paragoge • big &gt; bigi</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Data

(3) Non-contact: Paragoge is often reported to be missing or rare
   a. Synchronously (missing: Sanders 1979; Steriade 2001)
   b. Diachronically (rare: Campbell 1999: 35)
   c. Child speech (rare: Demuth et al. 2006)

(4) a. Creoles: Paragoge is common
   i. English big > Sranan bigi (Wilner 2003: 124)
   ii. English school > Solomon Islands Pidgin sukulu (Jourdan & Keesing 1997: 413)
   iii. English walk > Kromanti waka (Bilby 1983: 42)
   iv. Portuguese doutor > São Tome dotolo ‘doctor’ (Lipski 2000)
   v. Dutch pompoen > Berbice Dutch Creole pampuna ‘pumpkin’ (Singh & Muysken 1995)
   b. Loanwords too (Uffman 2007; Haspelmath & Tadmor 2009)
   i. English class > Yoruba [kíláàsi]  
      ii. German Arbeit > Japanese [arubaito] ‘part-time job’
   iii. Arabic fiir > Swahili [nuru] ‘light’
   iv. Malay burung > Malagasy [vorona] ‘bird’
   c. L2 acquisition too (Tarone 1980; Eckman 1981)
   i. English sack → (L1 Korean) [sækɾ̩]  
      ii. English blanket → (L1 Portuguese) [bæŋk̩áɾ̩]

Previous proposals

(5) L2 acquisition: Orthographic input favours paragoge (Young-Scholten et al. 1999)
   a. Faithfulness to orthography blocks deletion in L2 acquisition, favouring paragoge
   b. But this does not account for the existence of paragoge in creoles.

(6) L1 phonology: Paragoge is impossible due to p-map (Steriade 2001)
   a. Perceptual error only allows weakening (e.g. big > biҚ, or biҚ > biʔ).
   b. But this does not account for the existence of paragoge in language contact.

   a. Surface constraints conflict with underlying forms in L2 acquisition, but not L1 (Eckman 1981: 214)
   b. But this seems inconsistent with L1 Russian (also Turkish, German, Dutch, etc.)
   i. след /slʲed/ ‘track’ → [slʲet] NOM.SG. but [slʲed-a] GEN.SG.
Loanword studies: Faithfulness always favours epenthes

a. This cannot account for the absence/rarity of paragoge in L1 transmission, but …

b. *Preservation Principle*: Segmental contrasts are maximally preserved
   
   ‣ But segmental contrasts are very often lost (Singh & Muysken 1995: 161).
      i. L1 Russian: бес /bʲes/ ‘demon’, без /bʲez/ ‘without’ \(\rightarrow [bʲes]\)
      ii. Sino-Japanese: 草稿 ‘manuscript’, 裝甲 ‘armor’ \(\rightarrow [sōkoː], [tʃwan-tej]\)

c. *Featural faithfulness*: V epenthesis is better than C deletion (Uffman 2007: 206).
   
   ‣ But there is evidence that both deletion (10) and epenthesis (11) proceed gradually.

My approach: Back to phonetics

(9) How can we explain this asymmetry?

a. Universal constraints on grammar cannot explain an L1 vs. L2 asymmetry.

b. Can we find a parallel asymmetry in L1 vs. L2 synchronic phonetics?

(10) Deletion as a gradual change (Bybee 2001: 193, 204)

a. Phonetic path: big \(\rightarrow\) bik (devoicing) \(\rightarrow\) biʔ (debuccalization) \(\rightarrow\) biØ (deletion).

b. Perception: VC transition has poor cues compared to CV transition or C release burst.

c. Production: Articulatory gestures weaken over the course of the syllable.

(11) Epenthesis as a gradual change (cf. Blevins 2004: 146; Davidson 2007)

a. Phonetic path: big \(\rightarrow\) bigə (C release) \(\rightarrow\) bigi (default V epenthesis) \(\rightarrow\) bigi (V assimilation).

b. Perception: Audible release burst can be interpreted as a reduced vowel.

.c. Production: Articulatory gestures for unfamiliar sequences are spaced apart (zgano \(\rightarrow\) zґgano).

(12) Articulatory effort

a. Reducing articulatory effort = Reduced or compressed articulatory gestures (Bybee 2001).

b. L1 deletion < Reduced or compressed gestures = Reduced effort
   
   i. Devoicing (big \(\rightarrow\) bik) = Glottis stops voicing early, i.e. compressed gesture.
   
   ii. Debuccalization (bik \(\rightarrow\) biʔ) = Tongue does not reach target, i.e. reduced gesture.

c. L2 epenthesis < Stronger or spaced-apart gestures = Greater effort
   
   i. Transitional vowel (big \(\rightarrow\) bigə) = Unfamiliar sequences, hence spaced-apart gestures
   
   ii. C release (big \(\rightarrow\) bigi) = Forceful release of air, due to stronger gesture.

My proposal

(13) Sound changes resulting from increased articulatory effort (e.g. paragoge) indicate language contact (unless motivated by strong prosodic/word positions).

(14) Why do L2 speakers increase articulatory effort?


(15) Do L1 speakers ever increase articulatory effort?


b. Hypercorrection: SgEng *absence[t] (Deterding 2007), AmEng you and I, athelete, nucular.

c. Prediction: Paragoge should also be possible in dialect contact.
Alternative accounts

<table>
<thead>
<tr>
<th>Potential phonetic asymmetries</th>
<th>Production</th>
<th>Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. L1 vs. L2 learner: Linguistic experience</td>
<td>My proposal</td>
<td>Rejected</td>
</tr>
<tr>
<td>b. Child vs. adult: Biological capabilities</td>
<td>Rejected</td>
<td>?</td>
</tr>
</tbody>
</table>

Perception: L1 vs. L2 linguistic experience

a. How do listeners interpret a release burst (big⁰)?
   i. L1 has only CV syllables \( \Rightarrow \) Listeners expect: bi, big⁰
   ii. L1 has both CV and CVC syllables \( \Rightarrow \) Listeners expect: bi, big⁰, big

b. Linguistic experience cannot rule out perception-induced paragoge in L1 transmission.

Production: Child vs. adult biological capabilities

a. Epenthesis is much less common than deletion (Demuth et al. 2006)
   i. Deletion occurs freely: Children self-monitor less effectively than adults (Jaeger 2005: 82)
   ii. Paragoge is blocked: Early monosyllabic stage (Fikkert 1994)
   iii. Codas may not need repair: Onsets require jaw/tongue coordination (McAllister 2009)

b. But child-specific errors are not reflected in sound change (Foulkes & Vihman, in press)
   i. Consonant harmony, stressed syllable deletion, fricative \( \rightarrow \) stop
   ii. These errors tend to disappear fairly early (< 5 yrs)

Is paragoge always present in contact?

The French exception paradox (Alleyne 1980: 30; Singh & Muysken 1995)

<table>
<thead>
<tr>
<th>Strong release (French)</th>
<th>No audible release (English)</th>
</tr>
</thead>
</table>

The French paradox (Claire Bowern, p.c. 2 Feb 2011)

a. Early L2 speakers (both French and English) produce strong release.
   - English L1 speakers perceive L2 strong release as epenthetic V, which they imitate in foreigner-directed talk, e.g. You likee soupee?
   - French L1 speakers perceive L2 strong release as similar to their own production, so they do not introduce epenthesis in foreigner-directed talk.

b. Creole sound change can be constrained by L1 perception.

Paragoge in English pidgins/creoles

b. Caribbean: Only Kromanti; early/archaic Jamaican, Bajan, Kittitian (Bilby 1983: 42; Cassidy & Le Page 1980: lxiii; Avram 2000: fn.32)
c. Pacific: Solomon Islands, but lost with nativization (Jourdan & Keesing 1997: 413)
d. Liberia: Yes, but only basilectal (Singler 1991)

- Paragoge is lost rapidly in decreolization.