

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	L1 transmission	Language contact
a. Weakening • big > bik > biʔ > bi∅	✓	✓
b. Paragoge • big > bigi		✓

Data

(3) **Non-contact: Paragoge is often reported to be missing or rare**

- a. Synchronically (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 [kílaàsì]
- ii. German *Arbeit* > Japanese [arubaito] 'part-time job'
- iii. Arabic *nūr* > Swahili [nuru] 'light'
- iv. Malay *burung* > Malagasy [vorona] 'bird'

c. L2 acquisition too (Tarone 1980; Eckman 1981)

- i. English *sack* → (L1 Korean) [sæk̚]
- ii. English *blanket* → (L1 Portuguese) [bæŋkæt̚]

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 > bik, or bik > biʔ).
- b. But this does not account for the existence of paragoge in language contact.

(7) **L2 acquisition: Underlying vs. surface (Eckman 1981; cf. Singh & Muysken 1995)**

- 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* /sʲed̚/ 'track' → [sʲet̚] NOM.SG. but [sʲed̚-a] GEN.SG.

- (8) **Loanword studies: Faithfulness always favours epenthesis**
- a. This cannot account for the absence/rarity of paragoge in L1 transmission, but ...
 - b. *Preservation Principle*: Segmental contrasts are maximally preserved (Paradis & LaCharité 1997; cf. Eckman 1981: 213)
 - But segmental contrasts are very often lost (Singh & Muysken 1995: 161).
 - i. L1 Russian: *бес* /bʲes/ ‘demon’, *без* /bʲez/ ‘without’ → [bʲes]
 - ii. Sino-Japanese: 草稿 ‘manuscript’, 装甲 ‘armor’ > [so:ko:], cf. Mandarin [tsʰɑukɑu], [tʂwanʈɕja]
 - 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 > bik̚ (devoicing) > biʔ (debuccalization) > bi∅ (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 > big^ə (C release) > big_ə (default V epenthesis) > big_i (V assimilation).
 - b. Perception: Audible release burst can be interpreted as a reduced vowel.
 - c. Production: Articulatory gestures for unfamiliar sequences are spaced apart (*zɡano* > *z^əɡano*).
- (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 > bik̚) = Glottis stops voicing early, i.e. compressed gesture.
 - ii. Debuccalization (bik̚ > biʔ) = Tongue does not reach target, i.e. reduced gesture.
 - c. L2 epenthesis < Stronger or spaced-apart gestures = Greater effort
 - i. Transitional vowel (big C... > big^ə C) = Unfamiliar sequences, hence spaced-apart gestures
 - ii. C release (big > big^ə) = 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?**
- a. Input: Effortful tokens are more frequent in foreigner-directed talk (cf. Hatch 1983: 155).
 - b. L1/L2 conflict: Attraction to L1 categories (regardless of effort) (cf. Flege 1980; Eckman 1981).
 - c. Careful speech: L2 production is intrinsically careful due to unfamiliarity (cf. Lin 2001).
- (15) **Do L1 speakers ever increase articulatory effort?**
- a. Strong prosodic/word positions: C gemination, V diphthongization (Lavoie 2001).
 - b. Hypercorrection: SgEng *absence*[t] (Deterding 2007), AmEng *you and I*, *athlete*, *nucular*.
 - c. Prediction: Paragoge should also be possible in dialect contact.

Alternative accounts

(16) Potential phonetic asymmetries	Production	Perception
a. L1 vs. L2 learner: Linguistic experience	My proposal	Rejected
b. Child vs. adult: Biological capabilities	Rejected	?

(17) Perception: L1 vs. L2 linguistic experience

- a. How do listeners interpret a release burst (big^a)?
 - i. L1 has only CV syllables ⇒ Listeners expect: bi, **bigə**
 - ii. L1 has both CV and CVC syllables ⇒ Listeners expect: bi, **bigə**, big
- b. Linguistic experience cannot rule out perception-induced paragoge in L1 transmission.

(18) 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. Coda 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 → stop
 - ii. These errors tend to disappear fairly early (< 5 yrs)

Is paragoge always present in contact?

(19) The French exception paradox (Alleyne 1980: 30; Singh & Muysken 1995)	Strong release (French)	No audible release (English)
a. Expected outcome: strong release > paragoge (cf. Japanese loans: Peperkamp <i>et al.</i> 2008)	Paragoge <i>douane</i> > duann <u>u</u>	Faithful <i>pen</i> > pen <u>u</u>
b. Creole outcomes: no release > paragoge (Haitian: Joseph 2008; Sranan: Holm 1988: 124)	Faithful <i>blague</i> > blag	Paragoge <i>big</i> > bigi

(20) The French paradox (Claire Bower, 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.

(21) Paragoge in English pidgins/creoles

- a. Surinam: Saramaccan, Ndjuka, Sranan (Alleyne 1980: 63; Plag & Uffman 2000)
- 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)

e. Paragoge is lost RAPIDLY in decreolization.

Is paragoge always missing in non-contact?

(22) Historical cases where there is independent evidence for contact

- a. *Semi-creole*: early Brazilian Portuguese (Romance: Lipski 2000: 55; cf. Holm 2004)
- b. *Celtic influence*: Old Spanish (Romance: Honsa 1962; cf. Penny 2002)
- c. *Conquest*: South Dravidian (Singh & Muysken 1995: fn.6; Caldwell 1856: 342ff)
- d. *Colonization*: Sardinian (Romance: Lüdtke 1988: 344–5; cf. Dyson & Rowland 2007)
- e. *Trade, loans*: Arandic (Pama-Nyungan: Campbell 1999: 37; cf. Bower & Atkinson 2012: 838)
- f. *Heavy areal contact*: Lauje, Talaud, Wamesa, Leti, Kambera (Austronesian: Himmelmann 1997; Sneddon 1993; Emily Gasser, p.c. 2 Jan 2013; Blevins & Garrett 1998: 542ff; cf. Klamer 2002; Bakker *et al.* 2011)

(23) Other historical cases

- a. Angutimri (Smith 1984) — *More information needed.*
- b. Aztec (Singh & Muysken 1995: fn.6) — *Morphological.*
- c. New Mexico Spanish (Bills & Vigil 2008: 15, 149) — *Language contact? Survival from Old Spanish?*
- d. Italian letter names, e.g. *elle*, *emme*, *effe* (Lüdtke 1988: 345) — *Lack of context > hyperarticulated?*

(24) Languages with strong final C release

- a. German (Blevins 2004: 98), French (Peperkamp *et al.* 2008)
- b. Prediction: These should only be possible in unusual circumstances.
 - i. Released Cs were previously onsets: CVC \underline{V} > CVC $\underline{\bar{a}}$ > CVC \underline{C} (e.g. French)
 - ii. Dialect contact: Compare with hypercorrection and decreolization.

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