

- (5) **Language contact: Paragoge is everywhere (refs. in Ng 2015: 117ff)**
- a. **Atlantic creoles:** Sranan, Saramaccan, Jamaican, Maroon Spirit Language, Krio, Neger-hollands, Berbice Dutch Creole, Fa d'Ambu, Papiamentu, Palenquero, Bozal Spanish
 - b. **Atlantic pidgins and early creoles:** early Sranan, early Saramaccan, early Kittitian, early Jamaican, early Krio, early Bajan, Liberian Interior English, Nigerian Pidgin English, Ghanaian Pidgin English
 - c. **Pacific pidgins and creoles:** Solomon Islands Pidgin, Chinese Pidgin English
 - d. **Loanword adaptation:** Japanese (from English, French, Chinese), Korean (from English, French), Cantonese (from English), Hawaiian (from English), Warlpiri (from English); Shona (from English), Fon (from French), Swahili (from Arabic), Kanuri (from Arabic, Hausa), Selayarese (from Indonesian)
 - e. **L2 acquisition of English:** Mandarin, Taiwanese, Cantonese, Korean, Vietnamese, Japanese, Spanish, Brazilian Portuguese
- (6) **L1 transmission: Paragoge is often reported to be missing or rare**
- a. Synchronically (missing: Sanders 1979; cf. Steriade 2001)
 - b. Diachronically (rare: Campbell 1999: 35; Singh & Muysken 1995)
 - c. Child speech (rare: Demuth *et al.* 2006)
- (7) **Historical cases: Paragoge is not missing, but it's not common (refs. in Ng 2015: 123ff)**
- a. Language contact?
 - Brazilian Portuguese, Old Spanish, South Dravidian, Vulgar Latin, Quranic Arabic
 - b. Lacking historical records:
 - Indonesia: Many languages in Sulawesi and Maluku
 - Australia: Anguthimri, Arandic languages, Lardil

3. Previous proposals

3.1 Previous proposals: Paragoge is impossible

- (8) **Claim: Devoicing [bik] is always favoured over epenthesis [bigi]**
- a. Two proposals from early Optimality Theory
 - Deleting a feature is more parsimonious than epenthesising an entire segment (Lombardi 1995/2001)
 - p-map: Devoiced [bik] is more perceptually similar to /big/ (Steriade 2001/2008)
 - b. So why is paragoge so common in language contact?

3.2 Previous proposals: Paragoge is only possible in language contact

- (9) **Claim: L1/L2 mismatch (Eckman 1981: 214; cf. Singh & Muysken 1995)**
- a. You are learning a language with CVC syllables, e.g. /big/
 - You are only able to pronounce CV syllables, e.g. [bi], [bigi]
 - Mismatch (underlying vs. surface) is not possible in L1 acquisition
 - b. Then how do we explain these cases?
 - Mismatch within L1: German *Tag* [tak] 'day' (cf. Russian, Turkish, SgEng, etc.)
 - Loanword paragoge without mismatch: Korean [kæk] 'guest' but *avec* → [apek'i]
 - Language change creates mismatch: Cantonese [lok] vs. Mandarin [lju]

- (10) **Claim: Written input is responsible for L2 paragoge (Young-Scholten *et al.* 1999)**
- a. We learn L2 from written input, discouraging deletion and hence favouring epenthesis
 - b. Then how do we explain creole paragoge?

3.3 Previous proposals: Paragoge is perfectly natural

- (11) **Claim: Faithfulness always favours epenthesis**
- a. Two proposals from loanword studies
 - Preservation Principle: Segmental contrasts are maximally preserved (Paradis & LaCharité 1997; cf. Eckman 1981: 213)
 - Featural faithfulness: V epenthesis is better than C deletion (Uffman 2007: 206).
 - b. So why is it only common in language contact?
- (12) **Claim: Paragoge is a natural phonetic development**
- a. C release burst interpreted as reduced V (Kang 2003; Blevins 2004: 146; Davidson 2007)
 - Production: You can pronounce *big* /big/ as [big[̣]] or [big^ə]
 - Perception: You might interpret [big^ə] as /big/ or /bigə/
 - b. So why is it only common in language contact?

4. My proposal

- (13) **The missing sound change in more detail**

Word-final consonant repairs	Language contact	L1 transmission
a. Paragoge • big > big ^ə > bigə > bigi	✓	rare
b. Lenition • big > bik > bi? > bi	✓	✓

- (14) **Lenition is a natural phonetic development**
- a. L1 speech is characteristically fluent, fast and casual
 - b. Word-final consonants are weakly produced, poorly perceived
 - Production: You are likely to pronounce *big* /big/ as [big[̣]] or [big^k]
 - Perception: You are likely to interpret those as [bik] > [bi?] > [bi]
 - c. These sound changes can also occur in L2 speech when fluent or casual.
- (15) **Paragoge is natural *only* in L2 speech**
- a. Paragoge has two crucial stages, both effortful
 - Production (big > big^ə): consonant release burst despite aerodynamic difficulty
 - Perception (big^ə > bigə): overcompensation for apparent vowel reduction
 - b. Effortful language use is rare among fluent speakers, but common in early L2 acquisition.
- (16) **Production stage (big > big^ə) is well attested in L2 acquisition (refs. in Ng 2015: 128ff)**
- a. L2 English: Cantonese, Korean, Portuguese, Mandarin. L2 Swedish: German.
 - b. Exceptions
 - Brazilian Portuguese: [i]-paragoge (L1-like), then schwa-paragoge (advanced learners)
 - Japanese: /u/-paragoge (this vowel is often reduced and devoiced in Japanese)

- (17) Perception stage ($\text{big}^{\text{a}} > \text{big}^{\text{a}}$) is also attested
- Korean loanword paragoge is correlated with stop release in source language.
French: always. English: correlated with release rates. (Kang 2003)
 - Paragoge judged *more* perceptually similar than devoicing (Kawahara & Garvey 2010)
- (18) Why isn't paragoge more common in L1 transmission?
- Both stages seem to be possible for L1 speakers:
 - $\text{big} > \text{big}^{\text{a}}$: L1 French phonetics require consonant release burst (but chronology);
 - $\text{big}^{\text{a}} > \text{big}^{\text{a}}$: L1 English perceive as highly similar (but refs. in Ng 2015: 85).
 - Proposal: Faced with multiple variants of /big/, e.g. $[\text{big}^{\text{r}}]$, $[\text{big}^{\text{k}}]$, $[\text{big}^{\text{a}}]$,
 - L1 speakers will seldom introduce a *more* effortful one in their own speech,
 - but some L2 speakers will.

5. Factors

- (19) What encourages paragoge in L2 acquisition?
- Formality \propto paragoge (Lin 2001; cf. Weinberger 1987; Jenkins 2000: 116ff)
 - conversation tasks < read sentences < minimal pairs
 - Age \propto paragoge (Young-Scholten *et al.* 1999)
 - 10–12 (5.6%) < 15–18 (16.3%) < 20–25 (20.4%) < 35–55 (32.4%)
- (20) What discourages paragoge in language contact?
Paragoge seems to disappear as speakers grow in fluency.

More paragoge	Less paragoge
<i>Pidgins and creoles</i>	
Maroon Spirit Language	Jamaican
Surinamese creoles (radical)	Bajan, Hawaiian Creole (English-like)
Berbice Dutch Creole	Negerhollands
Older speakers' Solomon Islands Pidgin	Younger speakers' Solomon Islands Pidgin
<i>Loanword adaptation</i>	
English names in mainland China	English names in Taiwan
English loanwords in standard Japanese	English loanwords in Hawaiian Japanese
<i>World Englishes</i>	
Interior Liberian basilect	Coastal Liberian English

(references in Ng 2015: 128, 143ff)

6. Conclusion

(21) Paragoge supports the transmission bias hypothesis

Effortful: favoured in relatively early L2 acquisition, disfavoured in L1 transmission.

Word-final consonant repairs	Language contact	L1 transmission
a. Paragoge • big > big ^ə > bigə > bigi	✓	rare
b. Lenition • big > bik > bi? > bi	✓	✓

(22) Implications

- a. Creole studies: new directions for research on creolisation and exceptionalism
- b. Phonology: new micro-typologies linked to conditions of language use
- c. Historical linguistics: a new 'language contact indicator'

(23) Future directions

- a. How can we explain exceptional cases of paragoge (or lack thereof)?
- b. Are there similar hypotheses about phonetic effort in L2 acquisition studies?
- c. What are the predictions of the effort hypothesis (and the transmission bias hypothesis)?

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