Creole exceptionalism via transmission

The weak-to-strong harmony gap

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1. Introduction

(1) Creole exceptionalism?

a. "The world's simplest grammars are creole grammars" (McWhorter 1998, 2001)

b. Phonology: Fewer phonemes? Less marked? — No (Klein 2006, 2011; Bakker 2009)

(2) A diachronic approach

a. Creoles are defined by their history, not by current grammars (Muysken & Smith 1994)

b. Should we expect creole exceptionalism to be diachronic rather than synchronic?

- Creole inventories — *Synchronically:* Average size compared to non-creoles. *Diachronically:* Larger if strongly influenced by lexifier *or* substrate (Uffman 2009)
- Front rounded vowels — *Synchronically:* Absent or non-contrastive in all contact. *Diachronically:* /y-i/ merger dominant in all creoles vs. /y-u/ in some contact (Ng 2011)

2. Stress-driven harmony

(3) a. Creole harmony is sporadic but widespread (Holm 1988: 125; Green 1988: 436)

i. Saramaccan /oe/ vs. /ɔɛ/ ‣ [kómpe] 'friend' ‣ [kɔ́ndɛ] 'village, country' (Smith 1975)

ii. Haitian *u* 'you, your' ‣ [mãʒe-o̲] 'your food' ‣ [frɛ-ɔ̲] 'your brother'

iii. French *ve*ˈ*nir* 'to come' > [vi̲ni] in Haitian and other French creoles

iv. English *po*ˈ*tato* > [pɛ̲tétɛ̲] 'sweet potato' in Krio

v. English *Smith* > [si̲mit] in Jamaican

vi. Portuguese *mel* 'honey' > [mɛlɛ̲] in São Tome

⇒ Strong-to-weak — Strong triggers, weak targets (unstressed, clitic, schwa, epenthetic)

b. Substrate harmony is often /ieou/ vs. /ɪɛɔʊ/ (Clements & Rialland 2008)

Akan (Dolphyne 1988: 18, 21)

i. /ieou(æ)/ ‣ [efie] 'home' ‣ [owuo] 'death' ‣ [obetwi] 'he'll push it'

ii. /ɪɛɔʊ(a)/ ‣ [ɛfiɛ] 'vomit' ‣ [ɛwʊɔ] 'honey' ‣ [ɔbɛtwɪ] 'he'll pull it'

c. Also possible with Chinese substrate languages

‣ Malay [kəlosaŋ] 'brooch' > [ko̲losaŋ] in Baba Malay

(4) a. Non-creoles: Strong-to-weak harmony — Strong triggers, weak targets

Finnish front harmony (Ohala 1994)

i. *Back* ‣ [ˈpouda̲-lla̲] 'in fine weather' ii. *Front* ‣ [ˈpøydæ̲-llæ̲] 'on the table'

b. Non-creoles: Weak-to-strong harmony — Unstressed triggers, stressed targets

Grado Italian height harmony (Walker 2005) — also termed umlaut or metaphony

i. *Non-high* ‣ [preˈfo̲nn-a] 'profound (f. sg.)' ii. *High* ‣ [preˈfu̲nn-u] 'profound (m. sg.)'

(5)	Stress-driven harmony	Creoles	Non-creoles
	a. Strong-to-weak • ˈboki > ˈbok<u>o</u>	✓	✓
	b. Weak-to-strong • ˈboki > ˈb<u>i</u>ki		✓

3. Previous proposals for stress-driven harmony

(6) **Phonetic basis of phonologization**

- *Synchronically:* Universal constraints should be grounded in phonetics (Hayes 1999)
- *Diachronically:* Categorical phonology arises out of phonetic variation (e.g. Blevins 2004)

⇒ Harmony arises from vowel-to-vowel coarticulation (Ohala 1994; Majors 1998; Walker 2005)

(7) **Previous proposal for strong-to-weak harmony (ˈboki > ˈbok<u>o</u>)**

- Stressed vowels are louder, longer, more peripheral (e.g. Fry 1955; Sluijter & van Heuven 1996) with stronger neural activation (Tilsen 2010)
- Hence speakers introduce strong-to-weak distortions for ease of articulation (e.g. Majors 1998)

(8) **a. Previous proposal for weak-to-strong harmony (ˈboki > ˈb<u>i</u>ki) ✘**

- Unstressed vowels have less volume, are shorter, more reduced (e.g. Lindblom 1963)
- Hence speakers introduce weak-to-strong distortions to overcompensate for listeners' poor perception of weak vowels (Walker 2005)

b. But phonetic studies of actual speech consistently find greater strong-to-weak distortion!

- English (Magen 1984, 1997; Majors 1998; Cho 2004)
- French (Nguyen & Fagyal 2008)

4. My proposal for the weak-to-strong harmony (gap)

(9) **Perceptual basis of sound change (e.g. Ohala 1986)**

- Sound change requires listener misperception as well as speaker coarticulation
- Normally, listeners compensate for expected coarticulation (e.g. Mitterer 2006)

(10) **Also articulatorily unnatural: Neutral vowels in Finnish front harmony (Ohala 1994)**

i. *Back* /a o u/ ‣ [ˈpoud<u>a</u>] 'fine weather'
ii. *Front* /æ ø y/ ‣ [ˈpøydæ] 'the table'
iii. *Neutral* /i e/ ‣ [ˈmel<u>a</u>] 'oar, paddle'
‣ [ˈnenæ] 'nose'

- The most 'perceptually front' vowels /i e/ are the ones that *don't* trigger front harmony!
- Differential compensation: Listeners compensate more for more expected effects
  - ‣ Listeners expect frontness effects near /i e/, hence they compensate more → No change.
  - ‣ Less expected near /æ ø y/, hence undercompensation for coarticulation → Misperception.

⇒ Misperception near some vowels, not others = Harmony with neutral vowels.

(11) **a. How can weak-to-strong harmony ever occur in non-creoles?**

- Listeners undercompensate for less expected articulatory effects
  - ‣ More distortion expected near stressed vowels, hence compensation → No change.
  - ‣ Less distortion expected near unstressed vowels, hence undercompensation → Misperception.

⇒ Misperception near unstressed vowels, not stressed vowels = Weak-to-strong harmony.

b. Why is weak-to-strong harmony absent in creoles?

- Early creolizers were inexperienced with stress-driven coarticulation (cf. Zhang & Francis 2010)
  - Stress is not salient in many of the substrates (Gut *et al.* 2002; Clements & Rialland 2008)
- Hence undercompensation across the board
  - Stressed vowels inherently cause more distortion to neighbours → More misperception.
  - Unstressed vowels inherently cause less distortion to neighbours → Less misperception.

⇒ Misperception near stressed vowels, not unstressed vowels = Strong-to-weak harmony.

5. Refining the proposal

(12) Is this an accidental gap? Two possibilities:

a. No — L2 learners will always undercompensate across the board.

b. Yes — L2 learners are capable of differential compensation given relevant L1 experience. ✓

(13) a. Palatalization of /k g/ > [tʃ dʒ] in French creoles (Smith 2008: 122)

- Before /e ɛ y œ/, e.g. French *quinze* 'fifteen' > [t͡ʃɛ̃z] in Trinidad, Dominica
- Not before /i/, e.g. French *quitter* 'to leave' > [k̲ite] in Trinidad, Dominica

b. Substrate palatalization

- Proto-Gbe */k g/ > [tʃ dʒ] before /i ĩ y/ in most modern Gbe dialects (Capo 1991: 135)
- Fante /t d/ → [ts dz] before front vowels (Dolphyne 1988: 144); cf. Gbe (Capo 1991: 135)

⇒ Early creolizers had experience of CV coarticulation effects such as French [k̟i].

(14) Refined proposal

- L2 learners are capable of differential compensation given relevant L1 experience
  - Inexperienced with stress → Undercompensation across the board → Strong-to-weak harmony only.
  - Experienced with CV coarticulation → Differential compensation → Palatalization except before /i/.
- Seeking: Phonetic studies of substrates, etymological databases of creoles
- Prediction: In imitation experiments, naïve speakers will perform more differential compensation for features which are allophonically conditioning in their L1.

(15) Conclusions

- Weak-to-strong harmony gap due to traces of contact (L1 phonology influencing L2 perception)
- A case of accidental creole exceptionalism
  - Syllable-timed substrate → Strong-to-weak harmony.
  - Stress-timed substrate → Weak-to-strong harmony?

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