Tone-stress contact in the Afro-Atlantic prosodic area

Princeton Phonology Forum 2025 · 19 April 2025

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The null hypothesis:
Tone is eliminated or simplified when stress and tone languages meet

(8) Distinctive tone tends to be reduced in function or lost altogether (Spencer 1963: 137; Manessy 1964: 81/82; Richardson 1962: 193; Fehderau 1966: 46/47; Samarin 1962: 59/60).

(Heine 1978: 220)

More specifically, tone languages appear to lose distinctive tone and to develop first a pitch accent system, then a stress-based, and eventually a fixed stress accent system in language contact settings.

(Salmons 1992: 56)

Tone therefore seems to be an early casualty of language contact between tonal and non-tonal languages.

(Sebba 1997: 49)

More specifically, languages known as creoles make very little or no use of tone to (a) lexically contrast phonetically identical monosyllables,

(McWhorter 1998: 793)

The loss of tone and the reduction of noun classes and TMA markers are typical candidates for an explanation in terms of contact-induced simplification. However, these changes also occurred in related and unrelated languages

(Kusters 2003: 343)

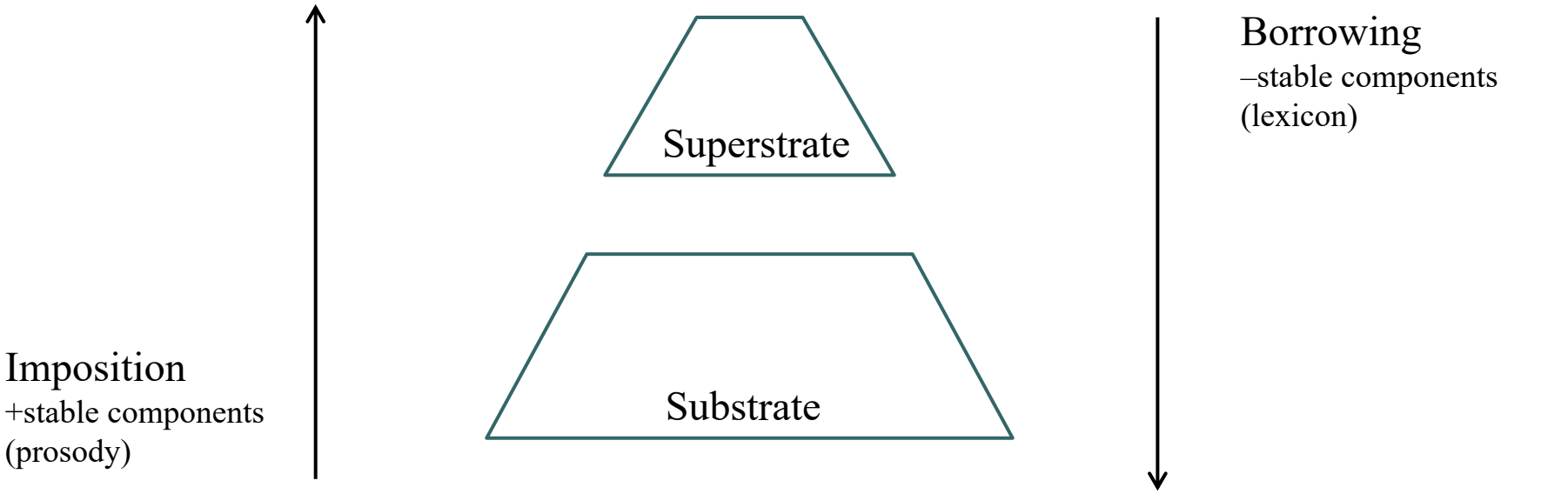
, as well as other processes such as loss of tone and reduction in phonotactic possibilities: pidgin languages typically have CVCV structure and relatively small phoneme inventories, and lack contrastive tone.

(Trudgill 2010: 309)

The reason for this is that *grammars are not robustly transmitted during creolization*, since morphology and tones are particularly hard to master during untutored SLA.

(Sessarego 2020: 4)

The tone loss hypothesis is conceptually flawed because it doesn't distinguish between the two transfer types of **imposition** vs. **borrowing**



Source Language (SL) Agentivity =

SL is L1, **RL is L2**

Ewe ▸ English

Superstrate (English, French, Spanish):
▻ L2 of the dominated group

Substrate (Yoruba, Ewe, Kikongo):
▻ L1 of the dominated group

(Van Coetsem 1988, 2000)

Recipient Language (RL) Agentivity =

RL is L1, **SL is L2**

Ewe ◂ English

Prosodic contact outcomes under Source Language Agentivity

(i) $IN_{SUP} + TO_{SUB/ADS} = TO_{CON}$

(ii) $TO_{SUP} + IN_{SUB/ADS} = IN_{CON}$

(iii) $TO_{SUP} + TO_{SUB/ADS} = TO_{CON}$

(iv) $IN_{SUP} + IN_{SUB/ADS} = IN_{CON}$

(Bordal Steien & Yakpo 2020)

IN: Intonation-only (stress) language
TO: Tone language
SUP: Superstrate
SUB: Substrate
ADS: Adstrate

The gist of the argument

- Speakers of African tone languages imposed tone systems on all Afro-Atlantic Creole languages and colonial varieties of English, French, Spanish, and Portuguese spoken in Africa and (probably) the Americas.
- Genetic affiliation, demography, social stratification, and other social factors in an ecology drive switches from tone to stress systems and vice versa, as well as the emergence of mixed tone-stress systems.
- The outcome is an areal-typological continuum across the Afro-Atlantic with tone systems clustering in the east (Africa) and stress in the west (Americas). Various types of mixed systems combining features of tone *and* stress converge on the areal buffer zone of the Caribbean.

Roadmap

1. Characteristics of Afro-Atlantic contact prosodic systems
2. Mechanisms in the emergence of contact prosodic systems
3. Typology of prosodic contact outomces
4. Areal-geographic distribution of outcomes across the Afro-Atlantic

Tone in Afro-Atlantic Creoles: Pichi (Equatorial Guinea)

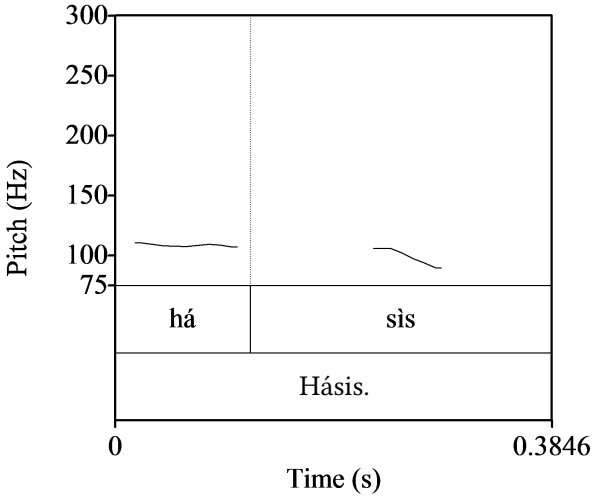


Figure 3.5 H.L pattern

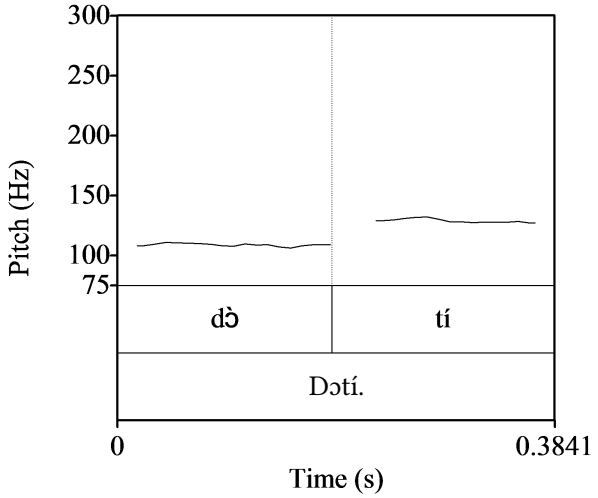


Figure 3.6 L.H pattern

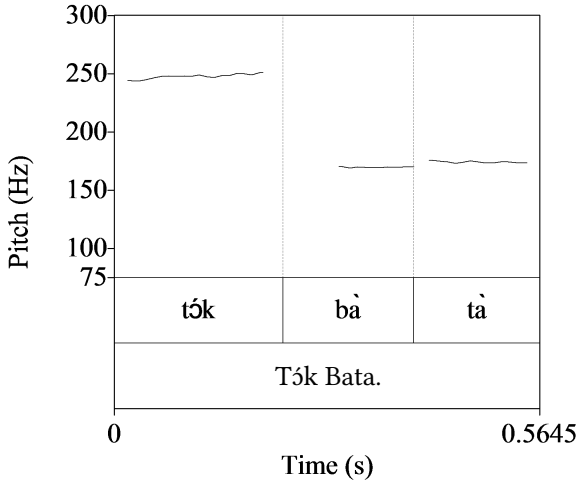


Figure 3.8 L.L pattern

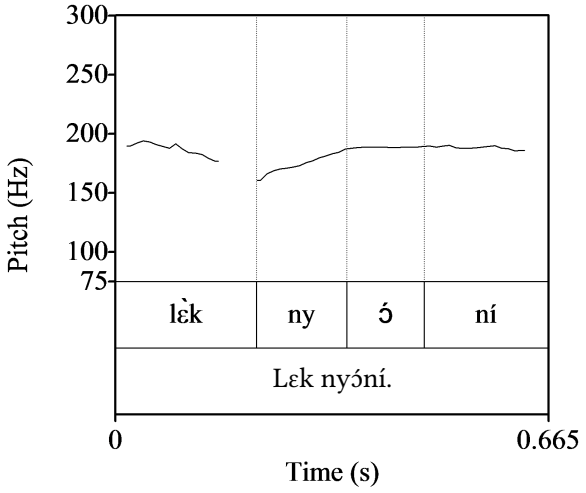


Figure 3.7 H.H pattern

(Yakpo 2019)

Lexical tone in Pichi (Equatorial Guinea)

(1) **Monosyllabic minimal pairs**

L tone		**H tone**	
dè	'IPFV'	*dé*	'day; there'
dì	'DEF'	*dí*	'this'
lɛ̀k	'like'	*lɛ́k*	'(to) like'
wèt	'with'	*wét*	'wait'

(2)(a) **Disyllabic minimal pairs**

kàtá /LH/	'catarrh'	*kátà* /HL/	'scatter'
pàpá /LH/	'father'	*pápà* /HL/	'potato'

(b) **Maximal number of tone patterns**

fĭbà /HL/	'fever'	*nyɔ́ní* /HH/	'ant'
wàtá /LH/	'water'	*bàtà* /LL/	'buttocks'

(c) **Phrasal minimal pair**

ɔ́pìn yáy /HL H/	'open (an) eye'	*ɔ̀pìn-yáy* /LL-H/	'cultivated'

(Yakpo 2013, 2019a)

Lexical tone in Pichi:
Ideophones - more diverse tone patterns

Ideophones, ideophonic verbs and nouns

Example	Pitch class	Translation
gbin	H	'sound of a hard, sudden blow'
pring	H	'sound of ringing'
tik	H	'cracking sound'
kwaráng	H.H	'sound of round and hard object(s) falling into a receptacle'
wewé; wowó	H.H	'sound of crying and wailing'
kɔ́ngkɔngkɔ́ng	H.H.H	'seek permission to enter'
súkútúpàmpa	H.H.H.L.L.L	'in a cheap and mean fashion'
bwà	L	'sound of water gushing'
kìp	L	'sound of a dull thud'
kamúkàmú	L.H.L.H	'sight of buttocks moving'
katakatá	L.L.H.H	'be active, hectic'
menyemenyé	L.L.H.H	'whine, nag in a childlike fashion'
kakàra	L.L.L	'be restless'
kutùku	L.L.L	'sound of heart beating'

Tone in two colonial contact varieties
Central African French & Equatorial Guinean Spanish

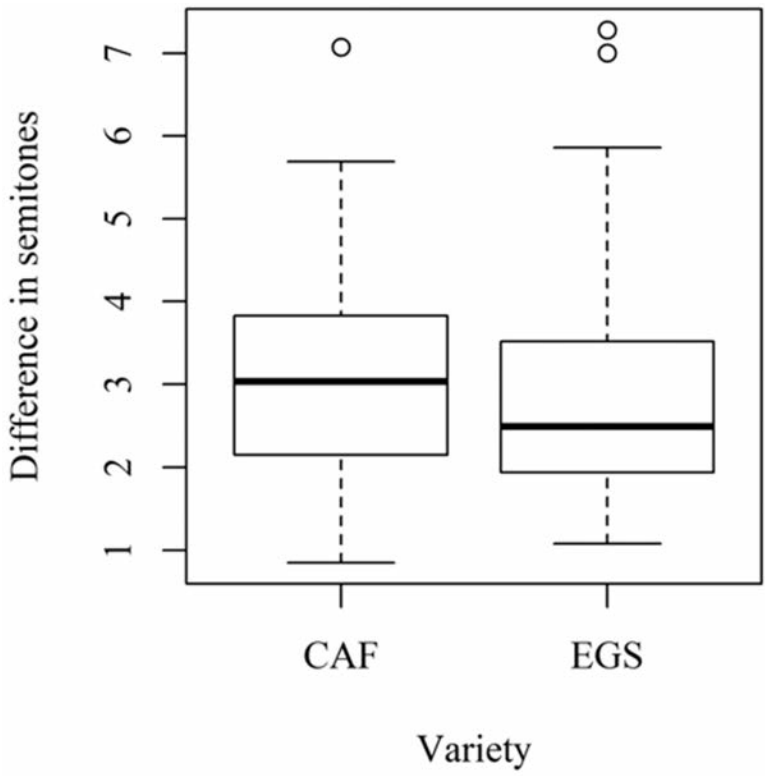


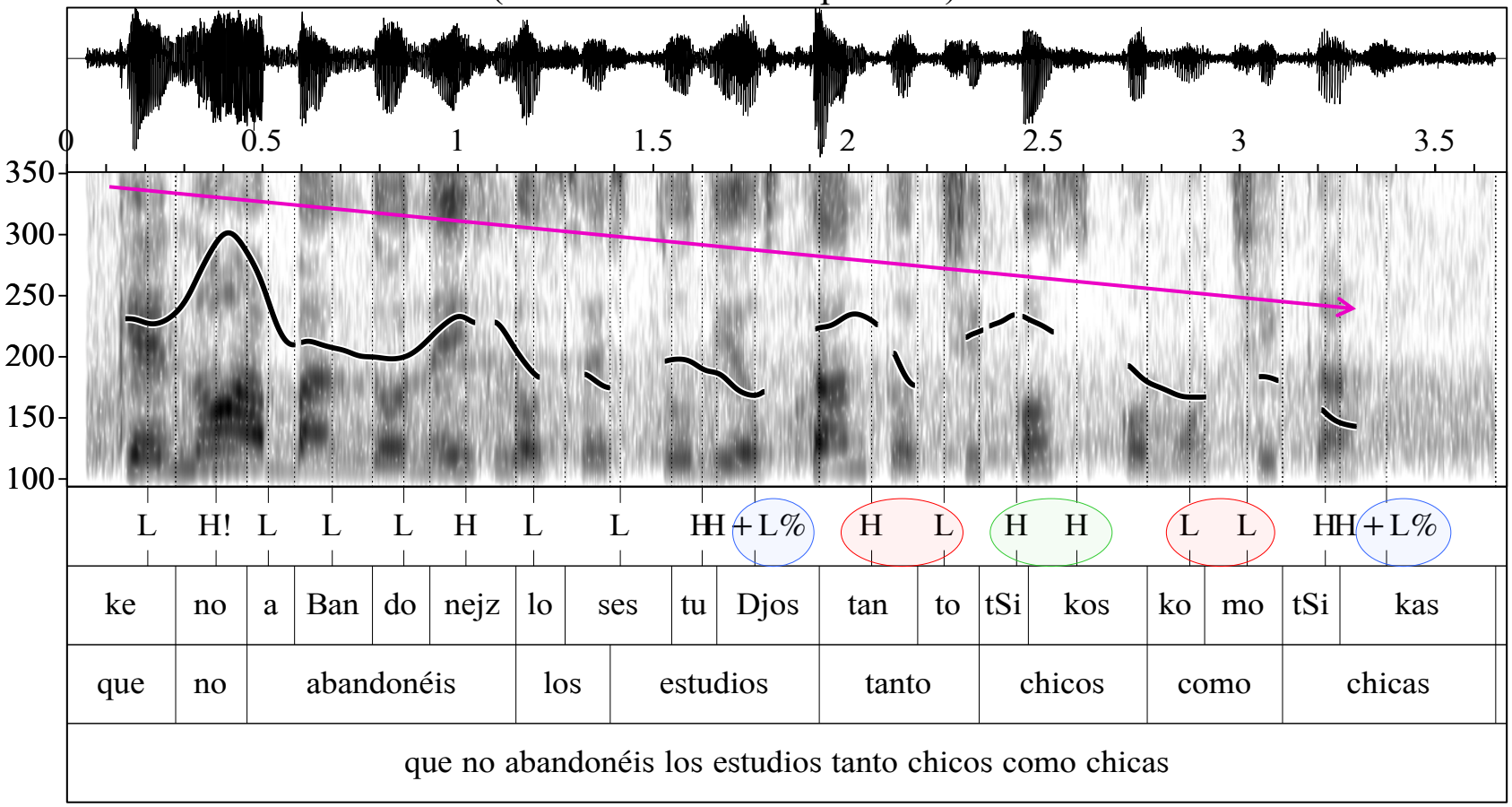
FIGURE 1. Box-and-whiskers diagram of pitch differences between syllables annotated L and H in utterance-internal disyllabic content words with the pattern LH (sixty CAF and forty EGS words).

(Bordal Steien & Yakpo 2020; CAF = Central African French, EGS = Equatorial Guinean Spanish)

Tone in colonial contact varieties: Equatorial Guinean Spanish)

lexical H & L, boundary tones, tone spreading, downstep

(Bordal Steien & Yakpo 2020)



Click here to download and listen to sentence!

Lexical tone in colonial contact varieties
Equatorial Guinean Spanish minimal pairs

WORD	TONES	GLOSS	WORD	TONES	GLOSS
qué	H	'what?'	que	L	'that' (SUB)
cómo	HL	'how?'	como	LL	'like'; 'how' (REL)
esta	HL	'this'	está	LH	'COP.LOC.3SG.PRS'
él	H	'he' (3SG.SBJ.M)	el (que)	L	'he (who)' (3SG.SBJ.REL.M)
tú	H	'you' (2SG.SBJ)	tu	L	'your' (2SG.POSS)

TABLE 8. Tonal minimal pairs in the EGS corpus.

Examples:

(1) Que^{L} no abandonéis los estudios!

(2) Que^{H} es esto, una radio?

(Bordal Steien & Yakpo 2020)

Other colonial varieties with (suspected) tone systems

Nigerian English (Gussenhoven & Udofot 2010, Gussenhoven 2017)

Cameroonian English (Udofot 2020)

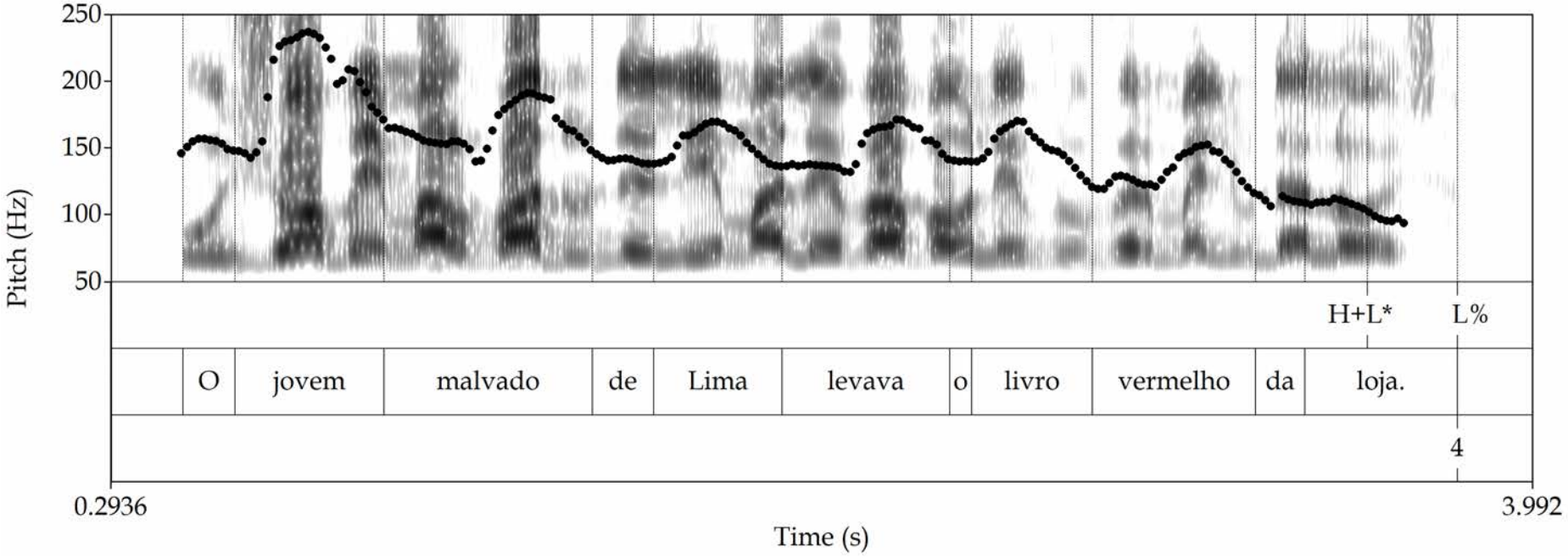
Ghanaian English (Criper 1971, Criper- Friedman 1990)

Rwandan French (Avanzi et al. 2014)

Côte d'Ivoire French (Boutin & Turscan 2009)

Angolan Portuguese? (Svartman Fernandes & Santos 2023)

Lexical tone in Angolan Portuguese?



(Fernandes, Flaviane R & Vinícius G Santos. 2023)

Three cognitive-typological mechanisms during prosodic contact

(1) Stress-to-tone mapping: Emergence of tone system in the contact language or variety by building on perceptual analogies between the phonetic realizations of stress and tone. Stressed position in lexifier = H tone in contact variety.

(2) Paradigmatization: Tonal patterning of the lexicon following phonological, morphological, and semantic principles. Occurred by default when stress word prosodic patterns based on stress were replicated as tone classes. Also regularizes functional paradigms.

(3) Idiosyncratization: Emergence of arbitrary word-tone patterns, paradigms and constructions, incl. 'grammatical tone', through language-specific constructionalization and grammaticalization.

(Bordal Steien & Yakpo, 2020)

Mechanism (1):
Stress-to-tone mapping

- Stress vs. nonstress contrast in the superstrate or lexifier is interpreted as a tonal **H** vs. **L** contrast in the contact variety or language.

English	**Pichi, Krio, Naijá**	**Output tone pattern**
go	gó	H
enter, forget	ɛ́ntà, fɔ̀gɛ́t	H-L, L-H

Portuguese	**Fa d'Ambô**	
falar	fàlá	L-H
moça	mósà	H-L

Syllable with primary stress/H tone in red

Stress-to-tone mapping:
A general prosodic contact mechanism

In Ewe (Kwa) European loanwords have cumulative H on the stress-bearing syllable in the source language, other syllables are L-toned (Yakpo 2021):

(1) *à**bó**lò* /L-**H**-L/ ‘bread’ < Port. ***bo**lo* ‘cake’, incl. nominal prefix *à-*
(2) ***dú**kù* /**H**-L/ ‘scarf’ < Dutch ***doek*** ‘scarf’, incl. paragogic vowel /ù/

In Yoruba (Benue-Congo), stressed syllable bears H, pre-tonic bears M, and final L. Epenthetic vowels copy tone from adjacent ones (Kenstowicz 2006):

(3) *ri**kọ́**dà* /M-**H**-L/ ‘re**cor**der’
(4) ***á**lúbọ̀mù* /**H**-H-L-L/ ‘**al**bum’, incl. epenthetic vowel /ú/

But also metrical constraints, e.g., trisyllabic output of disyllabic Arabic loanwords in Bambara (Mande): L in L-H melody is marked and limited to ‘prominent’ (foot-initial) positions, hence (L)(L-H) (Green & Boutz 2013):

(5) *kìtà**bú*** /L-L-**H**/ ‘book’ < Arabic *ki**taab*** ‘book’, incl. paragogic vowel /ú/

Mechanism 2: Paradigmatization
Tonal case paradigms in African Caribbean English Creoles

African AECs

Person & Number	Dependent pronouns			Independent pronouns
	Subject	Possessive	Object	Object & emphatic
1SG	*a*	*mi*		*mí*
2SG	*yu*			*yú*
3SG	*e*	*in*	*=an*	*ín*
1PL	*wi*			*wí*
2PL	*una, unu*			*una, unu*
3PL	*dɛn*			*dɛ́n*

(Yakpo 2019: 128)

Surinamese Maroon AECs (Saramaccan, Ndyuka)

	TONIC	SUBJECT
1S	mí	mi, m
2S	í	i
3S	hɛ́	a
1P	ú	u
2P	ű, únu	ũ, únu
3P	dé	de

(McWhorter & Good 2012: 94)

Mechanism 3: Idiosyncratization
Tone-conditioned suppletive allomorphy in Pichi

(1) *à márèd=àm* 'I married him/her'

C/_# ?
- *yes* → **=àm**
- *no* → Ṿ/_# ?
  - *yes* → **=àm**
  - *no* → **ín**

(2) *à tròwé=àm* 'I dumped it'

(3) *à fíbà ín* 'I resemble him/her'

OCP_{TONE} = Tonal polarity requirement *LL; *ṾṾ >> ÁṾ, ṾCṾ:

- L-toned clitic ***=àm*** '3SG.OBJ' can only follow V in (1) ṾCṾ and (2) ÁṾ.
- In illicit context (3), the phonologically independent pronoun ***ín*** '3SG.INDP' is recruited (Yakpo 2019b).

Idiosyncratization:
The emergence of STAMP morphemes in West African Pidgin

In subjunctive clauses introduced by the modal complementizer ***mék*** (< 'make'), optional deletion & tone floating → emergence of portmanteau STAMP morphemes:

(1) *mék* /H/ + *à* /L/ '1SG.SBJ' →

dɛ̀n wɔ́n ***mâ*** *gó* {3PL.SBJ want SBJV.1SG.SBJ go} 'they want that I go'

(2) *mék* /H/ + *è* /L/ '3SG.SBJ' →

dɛ̀n wɔ́n ***mê*** *gó* {3PL.SBJ want sbjv.3SG.SBJ go} 'they want that s/he go'

(3) *mék* /H/ + *wì* /L/ '1PL.SBJ' →

dɛ̀n wɔ́n ***móù*** *gó* {3PL.SBJ want SBJV.1PL.SBJ go} 'they want that we go'

(4) *mék* /H/ + *è* /L/ '3SG.SBJ' →

dɛ̀n wɔ́n ***móùnà*** *gó* {3PL.SBJ want SBJV.2PL.SBJ go} 'they want that y'all go'

(Yakpo, forthcoming)

Outcomes of prosodic contact in the Afro-Atlantic

1. Tone systems with some structural features of ‘European’ stress systems
2. Mixed tone-stress systems
3. Stress systems with ‘residual tone’
4. Stress systems with some structural and intonational features of ‘African’ tone systems

Outcome (1):
Tone systems with structural features of 'European' stress

	EGS	Pichi	SES
1. Tones	+	+	−
2. Tonal minimal pairs	+	+	−
3. Obligatoriness of word-level H or stress in content words	+	+/−	+
4. Culminativity of word-level H or stress in content words	+	+/−	+
5. H-tone spreading	+	+	−
6. Downstep	+	+	−
7. Intonational pitch accents	−	−	+
8. Boundary tones	+	+	+

(Bordal Steien & Yakpo 2020; EGS = Equatorial Guinean Spanish, SES = Standard European Spanish)

Outcome (2):
Stress systems with residual tone

Haitian:

- Word-level, not phrase-level stress: *fan**mi*** 'family', *kou**to*** 'knife' (Brousseau 2003)
- Lexical tone in reduplications, e.g., *píké-píké* /H-H-H-H/ 'very pricking' vs. *pìkè-pìkè* /L-L-L-L/ 'slightly pricking' (Sylvain 1936)

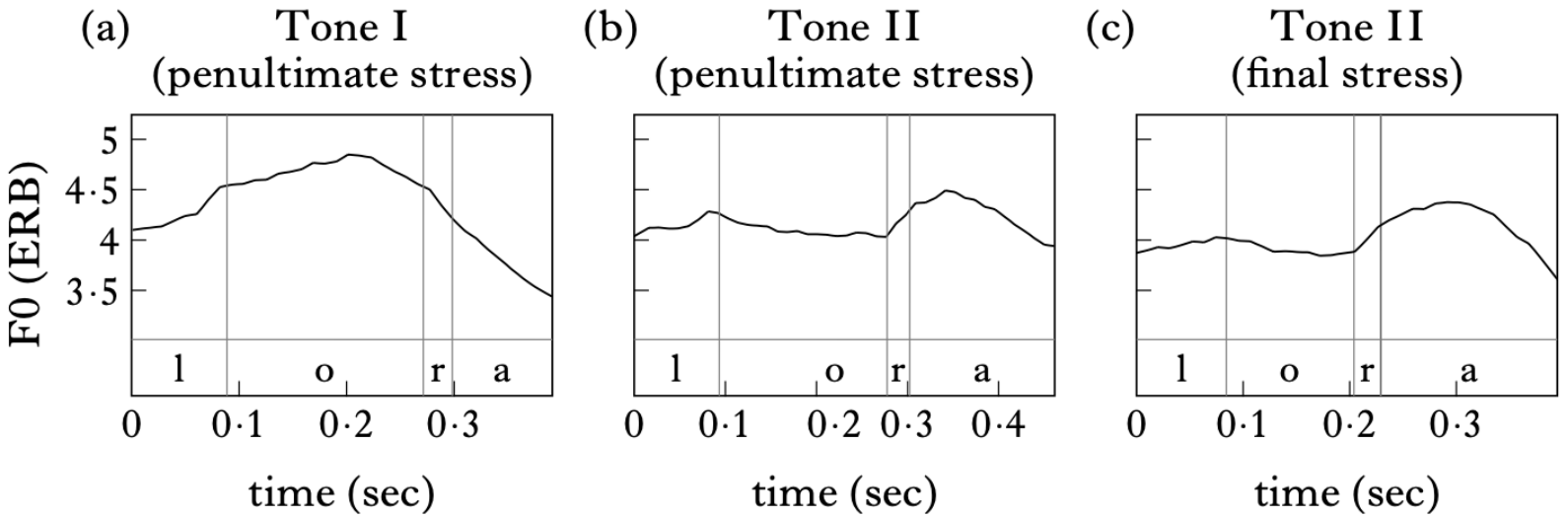
Sranan (Suriname):

- *a* *blaka* ***pííí*** /H/ — 3SG.SBJ be.black IDEO — 'It is pitch black.'
  a *weti* ***fánfán*** /H-H/ — 3SG.SBJ be.white IDEO — 'It is snow white.' (Smith & Adamson 2006)
- *papa* 'father' → [p**pa:**], *wowoyo* 'market' → [w**wo:**yo] (van der Hilst 1988)

Outcome (3):
Mixed tone-stress systems

Papiamentu (Curaçao) (Rivera-Castillo 1998; Remijsen & van Heuven 2005)

Tone: (1) ***lô**ra* /**HL**-Ø/ ‘parrot’; (2) ***lo**râ* /**Ø**-HL/ ‘to turn’ (verb), (3) *lo**râ*** /Ø-**HL**/ ‘turned’ (participle), **Stressed** syllables are longer and louder than unstressed ones, unstressed syllables more centralized (i.e., more schwa-like) than stressed ones.



(Remijsen & van Heuven 2005)

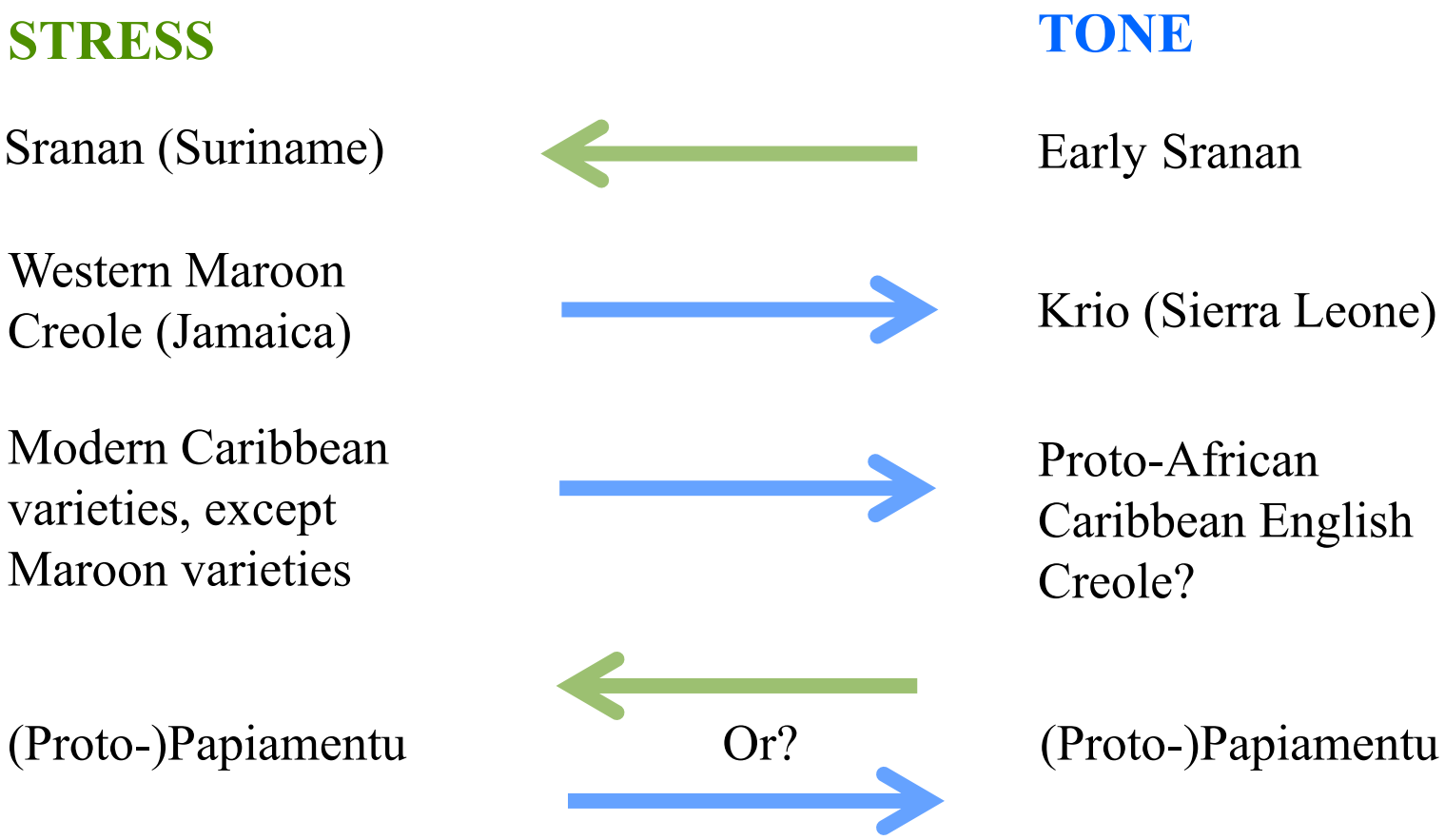
Outcome (4):
Stress systems with 'African' structural and intonational features

- **Jamaican**: Compounding involves morphological stress placement on the rightmost morpheme: ˌd͡ʒʊkɪˈd͡ʒʊkɪ 'very prickly' (Gooden, 2003)
- **Jamaican** and **Tobagonian**: Prosodic rhythm is syllable-, not stress-timed (Bloomquist et al., 2015; Yakpo et al., in prep)
- **Bajan, Trinidadian** and **Guyanese Creole**: Utterance-final fall in wh-questions, pronounced utterance-level downtrend, register raising (Sutcliffe, 2003)

Outcome (4):
Stress systems with 'African' structural and intonational features

- **Afro-Bolivian Spanish**: An obligatory and fixed LH pitch contour or H level pitch over stressed syllables (Rao and Sessarego, 2016).
- **Caribbean French**: Stress on individual words, like Haitian, not on accentual phrases, like European French (Pustka, 2007).
- **Popular Brazilian Portuguese**: More utterance-internal pitch accents than European Portuguese with a frequent alternation between and H∗ and L∗, and "tonal events not linked to stressed syllables" (Frota and Vigário, 2000).

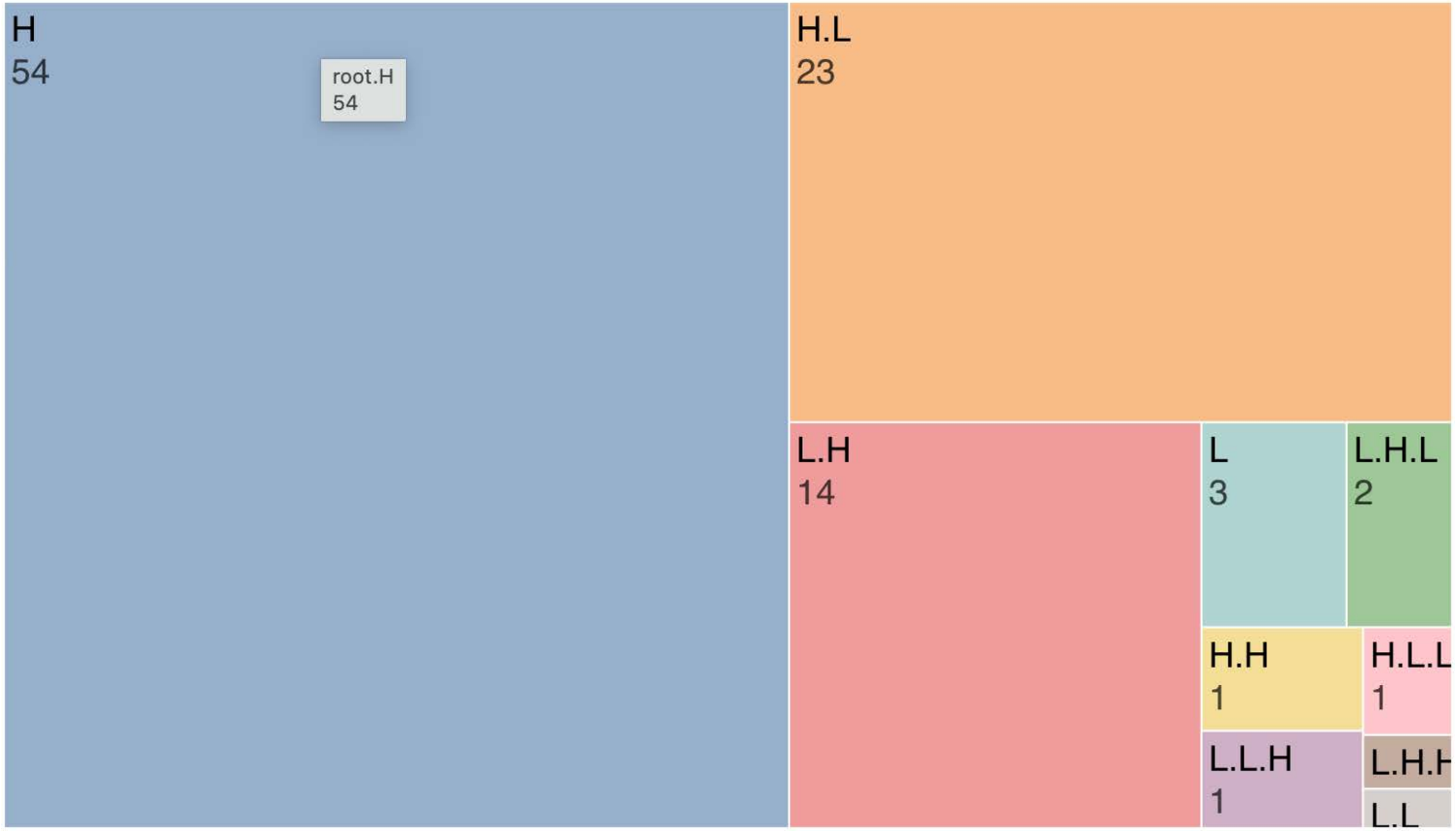
Areal alignment
Diachronic switches in prosodic systems



- Social factors: demography, social stratification (Yakpo 2020)

Areal alignment

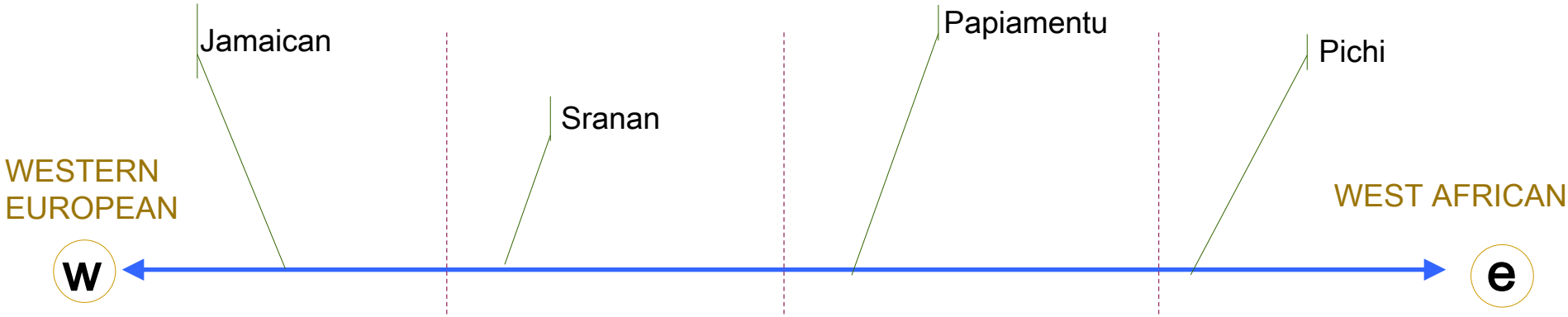
Typological ‘mismatches’ in the distribution of word tone patterns



- 90% of 1000 roots in Pichi (Equatorial Guinea) have culminative and obligatory H. Similar with other West African Pidgin varieties.
- < 10% of roots have culminative and obligatory H in African adstrates (Akan, Ewe, Yoruba, etc.) spoken alongside West African Pidgin varieties.

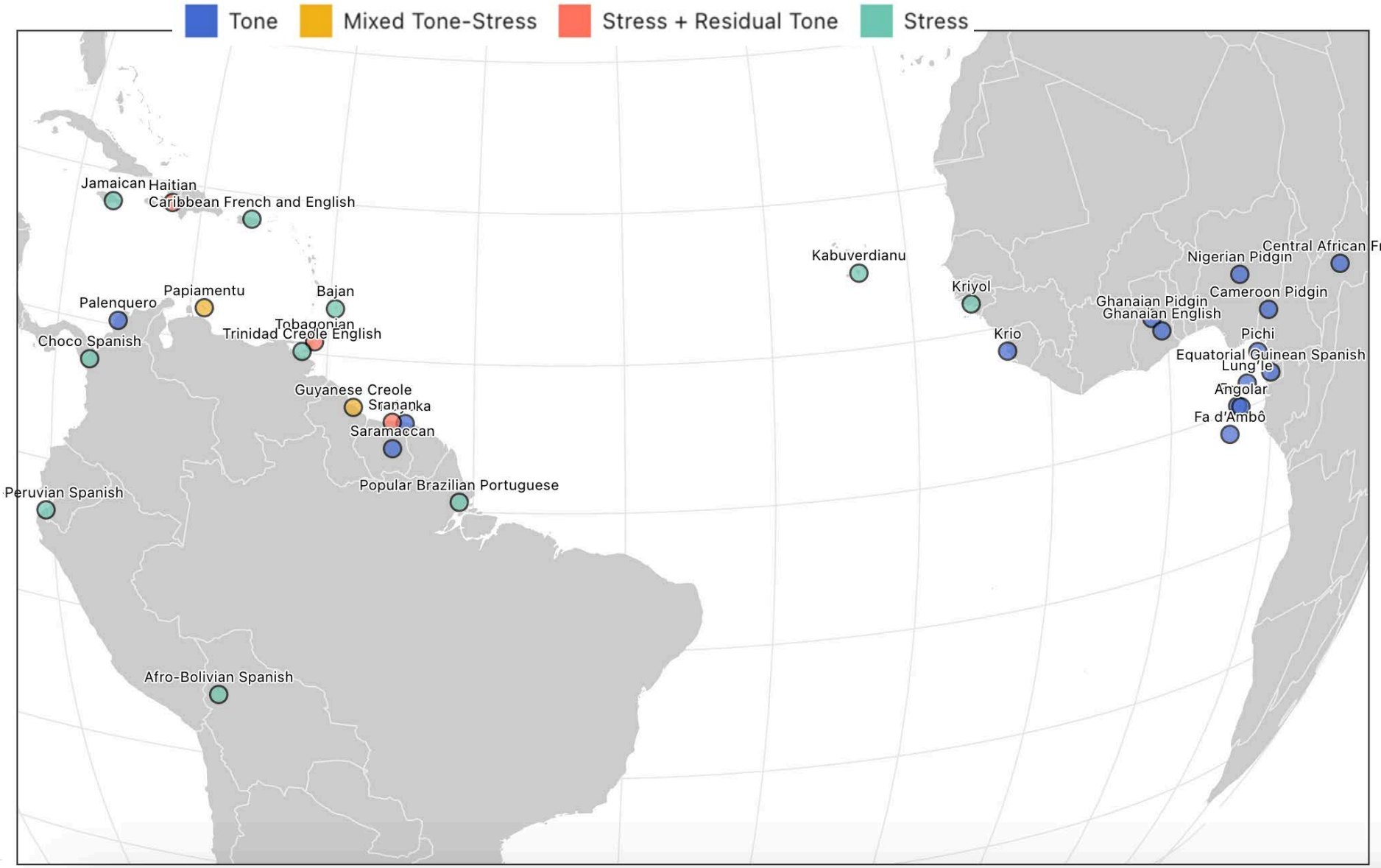
Conclusion

Typological gradience across the Afro-Atlantic prosodic area



– tone + word stress + downtrends, emphatic raising + lax wh- intonation	+ residual tone + word stress + downtrends, emphatic raising + lax wh- intonation	+ lex. and gram. tone + word stress + downstep,spreading, polarization, deletion + lax wh- intonation	+ lex. and gram. tone – word stress + downstep, spreading, polarization, deletion + lax wh- intonation

Areal-geographic distribution of contact outcomes across the Afro-Atlantic



Future work

- More data needed on the nature and distribution of contact prosodic systems of the Afro-Atlantic.
- Better understanding needed of the social factors that engender specific prosodic contact outcomes.
- More cross-fertilization needed between researchers working on prosodic contact and areality in the Afro-Atlantic and elsewhere.

Acknowledgements

- **Institutions**: Research Grants Council of the Government of Hong Kong (GRF 17608819), the Seed Fund for Basic Research (grant no. 201910159234) of the University of Hong Kong, Humboldt Research Fellowship for Experienced Researchers (2020–2021), research grant from the Center for Multilingualism in Society Across the Lifespan, University of Oslo.
- **People**: *Research collaborator* Guri Bordal Steien; *Colleagues for their input at various points:* Ana Lívia Agostinho, Dorothy Pokua Agyepong, Gratien Atindogbe, Sabinus Chiravira, Hubert Devonish, Joseph Farquharson, Senyo Gavu, Jeff Good, Shelome Gooden, Tom Güldemann, Carlos Gussenhoven, Larry Hyman, Bård Uri Jensen, Levi Ekwa Mokake, Salikoko Mufwene, Pieter Muysken, Danae Perez, Douglas Pulleyblank, Norval Smith, Charleston Thomas; *Crucial language consultants:* the late Natalia “Abuela” Toichoa Borico, Derek Asante Abankwa, Rudolfo “Djunais” Beaka Chale, the late Ildefonso “Boye” Ntutumu, Ignatius Suglo, Sampson Yeboah.

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