Tone Loans: the Adaptation of English Loanwords into Yoruba

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In this paper we present the results of a study of the tonal adaptation of English (E) loanwords into Yoruba (Y). The study is based on the c. 800 word corpus assembled in the appendix to Ojo (1977).[1] Y is a language whose lexical items are composed of open-syllables that belong to one of three contrasting tonal categories: H(igh) (e.g. *rá* 'disappear', M(id) (e.g. *ra* 'rub'), and L(ow) (e.g. *rà* 'buy'). Consequently, in order to sound like a Y word any loan must conform to the CV syllable template and be assigned a tonal specification. E lacks lexical tones, though its F0 contours have been successfully analyzed in terms of H and L tonal categories in the tradition initiated by Liberman (1975) and Pierrehumbert (1980). Given the distinct phonological functions of tone in the two languages, it is an open question to what extent the Y tonal adaptations take account of the E F0 contours. If adaptation were primarily based on equivalences at the phonological/phonemic level, we might not be surprised to see a default tonal pattern (presumably mid in Y) emerge in the absence of any direct correspondence of phonological categories. In the few cases in which this question has been posed in the African context this is not what we appear to find. Rather there seems to be a direct correspondence between the major stress of English (or French) and a high tone in the borrowing language. This could reflect an equivalence drawn at a more abstract level of "prominence" in which stress peaks are equated with F0 maxima. Alternatively, it could reflect correspondence based on F0 given that the stressed syllable of English is the site of a H* pitch accent in citation contours. An additional complication is presented by the fact that a distinct variety of E has evolved in Nigeria. To what extent are the adaptation patterns observed in loans also reflected in Nigerian English (NE)? Can NE be viewed as the proximate source for loans? We briefly touch on these questions as well.

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[1] Thanks to Akin Akinlabi for calling Ojo's work to our attention and furnishing us with a copy.

The rest of this paper is organized as follows. We present the major tonal adaptation strategies cast informally as OT constraints starting with E words containing a single stress and then multiple stresses. We then turn to the behavior of inserted vowels. The paper closes with a brief comparison with the tonal adaptation of E loans into Hausa and Shona. To preview our conclusions, while the tonal adaptation strategies are quite similar, there are nevertheless subtle but systematic differences that are naturally described by familiar constraints. Since the source is arguably same (British English), the differences either reflect unknown properties of the three languages or different selections among a hopefully limited set of options that become established as grammatical rules operating in the loanword phonology.

2. Yoruba Major Adaptation Strategies

The gross generalizations characterizing the Y tonal adaptations are stated in (1) for organic (nonepenthetic) syllables. See section 4 for epenthetic syllables.

(1)

- stressed syllable in E source adapted with H tone
- final syllable of E source adapted with L tone
- pretonic syllables adapted with M (occasionally L) tone[2]
- Y MHL tonal pattern corresponds to the E rise+fall citation contour H*L%

The generalizations in (1) are illustrated by the paroxytones in (2) where the penultimate syllable is H and the final syllable is L; the pretonic syllables are predominantly M (occasionally L).

(2)	mu'latto	mọlátò	'paper	pépà
	oc'casion	okésọ̀n	'body	bọ́đi
	re'volver	rifọ́fà	'dollar	dọ́là
	re'corder	rikọ́dà	'hanger	ángà
	to'mato	tòmátò	'barber	bábà

E words with final stress are more varied. The forms in (3) illustrate the adaptation of words whose final vowel bears the main stress in E.

(3)	sur'vey	sọ́fẹ́ẹ̀	'bar	báà	refu'gee	rẹfujî
	de'lay	đilée	'bier	bîà	guaran'tee	garantî
	de'cree	dikîrîi	'draw	dúrọ́ọ̀	refe'ree	rẹfirî

[2] Ojo (1977) and Carter (1987) report that pretonic syllables are primarily assigned a M tone while A. Akinlabi (personal communication) assigns them to the L category. This may reflect a dialect difference (Olanike Ola Orie, personal communication). Other languages with three levels to tone that adapt pretonic syllables as mid include Cantonese (Silverman 1992) and Fon (Gbeto 2000).

The final vowel is doubled in the data of the first two columns. We interpret this as an adaptation strategy to realize both components of the falling F0 contour of the stressed syllable of the E source. Since Y lacks long vowels, and since the syllable is the tone-bearing unit in Y, the doubled vowels of (3) are interpreted as heterosyllabic. This "lengthening" only occurs in reflexes of E final syllables; hence it is plausibly interpreted as a strategy to reflect both the peak H* and the final L% of the source. In the exceptional cases of the third column where just one tone is realized, the peak dominates the valley (Ident-H >> Ident-L).

The data in (4) illustrate adaptations with a final epenthetic syllable. In trisyllabic cases like *'pencil > pẹ́nsùlù* the penultimate syllable corresponding to the E final syllable systematically takes L. Such faithfulness to the E source is also shown by the oxytones (*ad'dress > adìrẹ́ẹ̀sì*) and monosyllables (*'bath > báàfu*). They systematically double the vowel.

(4)	'pencil	pẹ́nsùlù	'bath	báàfù	ad'dress	adìrẹ́ẹ̀sì
	'pilot	páílọ̀fí	'bag	báàgù	ga'zette	gasẹ́ẹ̀fí
	'dozen	dọ́sĩnĩ	'bat	báàtí	a'larm	aláàmù
	'farthing	fádĩnĩ	g'um	gọ́ọ̀mù	con'trol	kọntĩróòlu
	'prefect	pĩrífẹ̀fí	s'ick	síìkì	re'ceipt	risíìtì

The constraints and tableaux in (5) illustrate the analysis to this point.

(5) Ident-H, L: Corresponding vowels in the E input - Y output relation have identical specifications for H, L tone.
Dep-V: don't insert a vowel in the mapping between input and output

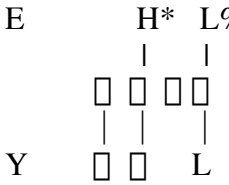
/dózèn/	Ident-H	Ident-L	Dep-V
-> dózènì			*
dózénì	*	*	*

/bâg/	Ident-H	Ident-L	Dep-V
bágù		*!	*
-> bá.àgù			**

/referî/	Ident-H	Dep-V	Ident-L
-> refirí			*
refirí.ì		*!	

Given that the MH*L% contour has the correspondence depicted in (6), there does not appear to be strong motivation for assigning the medial (penultimate) syllable of a proparoxytone such as *'senator* to a particular tonal category.

(6)



In the E source it is presumably a zone of transition between the H* and L% and so might be expected to be M or have no determinant value in the eyes of a Y speaker. The facts are that the medial syllable of a proparoxytone is systematically adapted as H in Y, as shown by the data in (7).

(7)				
'camera	kámẹ́rà	ma'ternity	matánítì
'councilor	kánsîlọ̀	mu'nicipal	munísípà
'liberty	lîbátì	com'misioner	kọmísọ́nnà
'senator	sẹ́nétọ̀	par'ticulars	patíkúlà
'embassy	ẹ́mbásì	au'thority	ọtọ́rítì

What could be the source of this behavior? It is well-known that both Y H and L tones spread into the following syllable in a HLH sequence; M neither spreads its tone nor attracts a preceding H or L (Akinlabi & Liberman 1995). One possibility is that when presented with a structure like (6), the H simply crosses the empty medial syllable to reach the final L. But if the motivation for the Y tone spread is to allow more time to traverse the distance between H and L tonal targets, then the unspecified medial syllable should provide ample time to reach the L and so a transitional M might be expected instead. Another possibly relevant factor is that the same process is found in the adaptation of E loans into Hausa (Leben 1996) and Mende (Leben 1978).

(8)	E	Hausa	E	Mende
'camera	kyamaràa	'minister	mînísà
'manager	manajàa	'spectacles	pɛ́tíkù

So far as we know, a process comparable to the Y spreading H onto a following L is not found in Hausa or Mende. If true, this point casts doubt on the appeal to this process for the Y adaptation. Another possibility is that the spread of H reflects the behavior of this tone in the realization of tonal melodies. Zoll (2003) observes that Hausa /HL/ and /LH/ melodies are realized as HHL and LHH, respectively, and suggests that H is spread in preference to L ($*L^+ >> *H^+$). But Mende realizes /HL/ and /LH/ melodies as HLL and LLH by spreading the L ($*H^+ >> *L^+$). Thus, the uniform spread of H in both Hausa and Mende loanword adaptations would not follow directly from the tonal grammar operating over the lexicons of each language. It thus appears that the rightward spread of the H that we find in Y, H, and M must be stipulated as a rule of the loanword phonology of these languages independent of native L1 synchronic system. Descriptively, it could be viewed as a preference for perseverative tone spreading or in the spirit of Zoll (2003) as a dispreference for the spread of L. The latter alternative entails that the pretonic M in

forms like *par'ticulars > patíkúlà* arises from a /MH*L%/ analysis of the input in order to block bidirectional spread of H. We return to this question of directionality in section 4.

3. Multiple Stresses

In this section we look at the adaptation of words with multiple stresses in the E source as well as cases where the Y adaptation suggests an analysis with multiple stress. Given that H marks the stress peak, L marks the final syllable, and M marks pretonic syllables, Y does not have available another tonal level to distinguish prominence among stressed syllables. One might then expect to find a secondary stress of E to be treated either as a Y H or as a Y M. In fact, both of these adaptations are found. In the following discussion we distinguish three different cases.

First, the corpus contains examples of E compounds which are evidently borrowed as single lexical items. The secondary stress (marked by the double tick) of the second member of the compound is adapted as a M.

(7)	'race "course	résíkọọ̀sì	'show-"case	ṣókeèsì
	'round-a"bout	rándàbaòtù	'show "glass	ṣógilaàsì
	'scholar"ship	síkọ́láṣiìpù		
	'money "lender	mọ̀nílẹ̀dà	(cf. 'money	mọ̀ní

None of these words happens to contain a pretonic M. It is unclear if that is just a coincidence or if such cases are avoided because M tone cannot mark pretonic unstressed syllables as well as secondary stress in the same adaptation.

Words whose E source contains two stresses but are not compounds display three adaptation patterns depending on the location of the primary stress. First, we consider words with a primary+secondary stress contour where the secondary stress is not final. A small number of E loanwords of this type have high tone that extends over the correspondents of both stressed syllables.

(8)	'missio"nary	míṣọ́nnárì	'mortu"ary	mọ́ṣúárì
	'Febru"ary	Fẹ́búárì		

More typical is the adaptation where the secondary stress is marked by a H and the primary by a M.

(9)	'agricul"ture	agirikọ́ṣọ̀	'ampli"fier	apifáyà
	'heli"copter	ẹlikópútà	'cater"pillar	katapíla
	'aero"plane	ẹropúléènì		

Finally, there are many examples where the E source has a rising secondary+primary stress contour. The Y reflexes invariably show just one H that corresponds to the primary stress of the E source. The secondary stress is M.

(10)	"manu'facture	manufákíṣọ̀	"Coro'nation	kọrọnéṣọ̀n
	"alu'minium	àlùmíníọ̀n	"lemo'nade	lẹmonéèdì
	"vase'line	fasilíìnì		

Several factors could motivate the apparent shift of stress to the right that neutralizes the contrast between the '□+"□ of (9) and "□ +'□ contours of (10) in favor of the latter. First, it might derive from a simplification in the grammar of Nigerian English (NE), which may plausibly serve as an intermediate stage in the loanword adaptation process. In fact, Ayole (1991) reports rightward stress shift as one of the major innovations of NE.[3] Another motivating factor could be that in Y loans the L is bound to the syllable corresponding to the final syllable of the source. The transition from H to L is cross-linguistically the most prevalent marking of prominence in pitch accent systems (Gomez-Imbert & Kenstowicz 2001, de Lacy 2002). Also, Y raises the F0 of a H that precedes L (Yatunde 1991). Positioning prominence before this L would be optimal from the point of view of Y grammar. Finally, Siertsema (1959) claims that in disyllabic Y nouns stress falls on the higher tone and in the case of a tie then on the first.

Earlier we interpreted the vowel doubling found on the correspondent of the final syllable of the E source as reflecting the Y perception of a stress prominence. There are quite a few cases where this doubling appears in both paroxytones and proparoxytones.

(11)	'bonnet	bọ́nẹ́ẹ̀tì	'almanac	álúmánáàkì
	'college	kọ́lẹ́ẹ̀jì	'negative	négétíìfù
	'magic	májíìkì	e'lectric	ẹlẹ́ntíríìkì
	'notice	nótíìsì	'Methodist	mẹ́tọ́díìsì

But there are a significant number in which the final syllable reflects absence of stress.

(12)	'pencil	pẹ́nsùlù	'principal	pírínsípùlù
	'vowel	fáwẹ̀lì	'consonant	kọ́nsónàntì
	'customs	kọ́sítọ̀mù	'reverend	rẹ́fúrẹ̀nì
	'lesson	lẹ́sìnì	'catechism	katikísímù

[3] In the few cases where the words cited by Atoye as instances of stress shift happen to also appear as loans in the Ojo corpus, the locus of H in the loan largely mimics the main stress of NE.

BSE	NE	Y
'petrol	pe'trol	pẹtiróòlù
'curfew	cur'few	kọ́fĩù
'hospital	hos'pital	ọsipítùlù
'telephone	tele'phone	tẹlifóònù
'cinema	cine'ma	sinimá

'linen líṇẹ̀nì 'stadium sítádíọ̀mù

While there are exceptions in both directions, the E sources in (11) primarily end in obstruents while those in (12) end in sonorants. One might think that latter are heard as syllabic consonants and hence that that syllable is less prominent/sonorous. But the fact that the vowel that substitutes for the putative syllabic sonorant matches the source spelling in a significant number of cases casts doubt on this interpretation.

In a discussion of English loans in Y that otherwise anticipates some of our results, Ufomata (1991) sees the doubling in monosyllables like *tea* > *tí.ì* and *bar* > *bá.à* as a strategy to conform to the generalization that Ynouns contain two syllables. While the latter point may be true it is hard to see why lengthening would be extended to CVC words like *bag* > *bá.àgù* which become disyllabic anyway via epenthesis let alone to the polysyllabic nouns of (11). A comprehensive explanation of the distribution of doubling in Y loans requires a better understanding of stress in NE.

4. Epenthetic Syllables

It is well-known that epenthetic syllables often behave differently from organic syllables with respect to synchronic phonological structure (Broselow 1982 and much later literature). The distinction is also important in loanword phonology where a principle of Minimal Saliency operates (see Shinohara 1997, Kenstowicz 2001, Steriade 2001) to make the inserted vowel as close to its zero correspondent as possible. Hence, epenthetic vowels tend to be short in duration (schwa or [i] or [u]) or have their quality determined by adjacent consonants or vowels. In Y loans the inserted vowel is consistently a high vowel: [u] in the context of labials and [i] otherwise (Akinlabi 2000). In the absence of schwa a high vowel is presumably the phonetically shortest in the inventory so Y arguably conforms to the Minimal Saliency principle. Tonally the inserted vowels also behave in a way that follows from this principle: they copy the tone of an adjacent TBU. This point has been noted explicitly for initial and final vowels by Ufomata (1991). Given that the correspondent of the E final syllable is consistently marked by L, any following epenthetic vowel is thus L as well. This point is evident throughout the data cited previously. An initial epenthetic vowel faithfully mirrors the tone of the following syllable, which varies among H and M (and L when the pretonic vowel is L instead of M).

(13)	'brother	búródà	'schnapps	ṣínáàbu
	'blazer	búlézà	cre'ole	kiriyó
	bro'cade	burokéèdì	'granny	gìràní
	'blanket	bulankẹ́ẹ̀tì		

More interesting is the behavior of medial epenthetic syllables. Here either the preceding or following tone could be copied. In this case the outcome is determined by the type of consonant cluster found in the E source. Vowels that split an Obstruent-Sonorant cluster (OR for short) copy the tone of the following vowel--the vowel flanking the sonorant. In

the case of posttonic syllables a "dactylic" HLL tonal contour is assigned that contrasts strikingly with the HHL of organic syllables.

(14)	OR	HLL		HHL
	ca'thedral	katîd ìrà	'labourer	lébírà
	'muffler	mọ́f ìlà	par'ticular	patíkúlà
	'nursery	nọ́sìrì	'councilor	kánsílọ̀
	'bat[t'ry]	bátîrì	'consonant	kọ́nsónàntì
	'boun[d'ry]	bánd ìrì	'regular	rẹ́gúlà
	'op'ner	ópùnà	'labourer	lébírà
	'gov'ner	gọ́f ìnà	'liberty	líbáti

Otherwise, the H tone of the stressed correspondent is spread from the left.[4]

(15)	OO		RO		RR	
	'doctor	dókítà	'silver	sílífà	'Selma*	sẹ́límà
	'heli"copter	ẹlikópútà	'welder	wẹ́lídà	'Elmer*	ẹ́límà
	'easter	ísítà	'album	álúbọ̀mù		
	'castor	kásítọ̀				
	'customs	kọ́sítọ̀mù				

The same disparity between OR clusters versus the rest operates pretonically as well.

(16)	OR		RR	
	la'trine	latíríìnì	Bal'moral*	bàlìmórà
	con'trol	kontíróòlù	El'mira*	ẹ̀lìmáírà
	ad'dress	àdírẹ́ẹ̀sì		

	RO		OO	
	ad'vance	àlùɓaǹsì	dis'penser	dìsìpẹ́nsà
	Albert**	alubáàtì	ab'sorb*	àbùsọ́ọ̀bù
	Alfred**	àlùfúrẹ́ẹ̀dì	ab'dominal*	àbùdómínà

The more transparent nature of the sonorants with regard to vowel copy has been noted before (Ihiunu & Kenstowicz 1994, McCarthy 1994). Specifically in regard to loanword adaptation Shabnam (2003) observes that Farsi breaks initial clusters with a copy vowel [u] when the intervening consonant is a sonorant (*blouse* > *buluz*; *dmuse* > *dumuze*); otherwise the default vowel [e] is inserted (*tkulster* > *tekulster*). She attributes the

[4] Adaptations marked by a single asterisk were supplied by Akin Akinlabi; those marked by a double asterisk are from Selma 1982.

difference to the duration of the consonant that intervenes between the insertion site and the following copied vowel, where obstruents > nasal, liquid > flap. For our data there appears to be just a two-way distinction of sonorant vs. obstruent. Moreoever, sonorant consonants are likelier than obstruents to show F0 transitions. For descriptive purposes we assume a constraint that penalizes spreading a tone across an obstruent (preferring an uninterupted F0) *(VOV): penalize a tonal domain that is broken by an obstruent. While this analysis goes part of the way towards explaining the properties of OR and RO clusters, it does not explain why proparoxytones like *par'ticular > patíkúlà* copy the preceding H while an epenthetic syllable in the same position copies across the sonorant: *'muffler > mo̩f ǐlà*. Both vowels lack a tonal specification in the input and so would behave the same on Ident-Tone. We suspect that this behavior follows from the Minimal Saliency principle for epenthetic syllables--a strategy to render the ouput closer to the input by assigning it a tonal specification that mirrors the presumed F0 of the sonorant in the E source--at least in the perception of the Y speaker. (See Akanlig-Pare & Kenstowicz 2003 for an analogous case involving epenthetic syllables in the tonology of Buli). The prediction is that Y speakers would judge an E nonsense word like *'tacro* (rhyming with *macro*) as more similar to Y HLL *tákìrò* than to Y HHL *tákírò*. Psycholinguistic experimentation is needed to test this conjecture.[5]

Our analysis for the tone on inserted vowels runs as follows. Dep-Tone >> *H+, *L+ forces the inserted vowel to copy its tone from the adjacent syllable. For initial and final syllables there is no choice as to direction. For the word-medial cases we assume that *(VOV) will favor spread across a sonorant.

(17)	/múf.lèr/	Dep-T	*(VOV)	Persev
	mo̩f ilà	*!		
	(mo̩f í)là		*!	
	-> mo̩(f ìlà)			*

In case of a tie where both consonants are obstruents (*'doctor > dókîtà*) or both are sonorants (*'Selma > se̩límà*) the H is copied. This could reflect dispreference for a spread L ($*L^{+} >> *H^{+}$)--the same constraint appealed to in section 2 for the proparoxytones--or it could reveal a preference for perseverative tone spreading. Crucial evidence is provided by the pretonic cases. Adaptations such as *dis'penser > dìsìpe̩nsà* and *Bal'moral > bàlìmórà* argue for direction as the crucial factor rather than the spread of H in preference to L.

(18)	/dóktèr/	*(VOV)	Persev
	-> (dókí)tà	*	
	dó(kìtà)	*	*!

	/dìspénsèr/	*(VOV)	Persev

[5] Fleischacker 2001 reports an experiment in which E speakers judge epenthesis inside initial #Ob+Son clusters as less noticeable than prothesis.

dì(sípén)sà	*	*!
-> (dìsì)pénsà	*	

5. Tonal Adaptations in Hausa

Hausa (Ha) lexically contrasts H, L, and Falling tones as well as long vs. short vowels. It also has CVC syllables. Despite these differences in tonal inventory and syllabic structure, the tonal adaptation patterns for E loans are for the most part identical to those of Y. This topic has been studied in considerable detail by Leben (1996) based on a corpus of c. 335 E loans taken primarily from R. Newman (1990). Here we review Leben's findings focusing on the points of similarity and difference between H and Y.[6]

Ha adapts words with a single stress in the E source in essentially the same way as Y. Paroxytones are HL and oxytones are F. Proparoxytones show the doubled HHL. (We follow the Ha linguistic tradition and transcribe H tones with no accent mark.)

(19)

'visa	biizàa	'shirt	shât
'parlour	faalòo	'film	fîl
di'rector	dàaraktà	re'ceipt	ràsît
'captain	kyaftìn	co'caine	kòokên
ac'countant	àkantàa	tange'rine	tànjàrîn

'camera	kyamaràa
'manager	manajàa
'primary	firamarèe
'carpenter	kaafintàa
'handkerchief	hankicì

E words with two stresses (primary+secondary) are split roughly equally between those that mark both stresses with a H (13 examples) versus those that mark just the second (10 examples). The latter are consistent with the rightward shift of primary stress suggested by the Y data in (9). One point of difference is that Ha marks the first prominence with a HL while for Y the L is confined to the final syllable in loans. Stated differently Y evidences a ban on HLH sequences in the loans--perhaps not surprising in a language with both mid tones as well as downstep of H.

(20)

'scholar"ship	sùkoolàshîf	'carbu"retor	kàafîreetòo
'heli"copter	helìkaftàa	'Cater"pillar	kàtàfiilàa
'time"keeper	tânkiifàa	'orga"nizer	òogàneezàa
'choco"late	caakùleetì	'type-"writer	tàafîreetàa
'culti"vator	kultìbeetàa	'quarter"master	kwàtàmastàa

Turning to the epenthetic syllable, as in Y it is a high vowel [u] in the context of labials and otherwise [i]. (It is [a] before [r]). Tonally, there are some differences compared to Y. In Ha the final epenthetic vowel is always L. But instead of copying the L of the E H*L%

[6] Thanks to Wil Leben for sharing his corpus.

from the correspondent of the source as in Y, in Ha the L% is mapped directly to the final epenthetic syllable. Perhaps this can be viewed as the avoidance of a FL sequence (tonal absorption).

(21)	'lace	leeshì	cf. Y léèsì
	'bandage	bandeejì	bándéèjì

An initial epenthetic syllable sometimes copies the H of a following syllable and is otherwise L--presumably the default tone. Tonal copy seems to depend on the nature of the second member of the #CC cluster. If it is a sonorant then H may copy across (18 examples vs. 12 with default L); if it is an obstruent (#sC) the tone is invariably default L (13 examples).

(22)	'practice	faraatìs	'blue	bùlû	'spirit	sìfirìt
	'flour	filaawà	'flask	fìlâs	'stamp	
	sìtamfìi					
	'plot	fulootì	'bread	bùroodì	'skirt	sìkyât
	'clutch	kuloocì	'pliers	fìlaayàa		

Leben (1996) notes a striking asymmetry in the behavior of medial epenthetic syllables following the correspondent to the E tonic H*. While the H systematically spreads to a following organic syllable (cf. 19) it just as regularly fails to spread to an epenthetic syllable (13 examples). This is precisely the same behavior as found in Y and follows from the principle of Minimal Saliency.

(23)	as'sembly	àsambùlèe
	'England	ingìlà
	'ice-cream	askìrìn
	'railway	reelùwèe
	(turn) 'signal	sigìnà

Leben cites *kitikàa* 'kit car', *likita* 'doctor' and *asimàa* 'asthma' as exceptions. The first two have obstruent clusters which we have seen block the regressive spread of the L in Y. The same explanation may be applicable here. We also found a few examples of medial pretonic OR clusters where the tonic H* fails to spread backwards: *dìgìrî* 'degree', *àdìreeshìi* 'address', *tàafîreetàa* 'type-writer', *sùkkùdireebàa* 'screw-driver'. While there are more exceptions in the Ha corpus, Ha follows Y in allowing the epenthetic vowel to assimilate its tone across a sonorant. Otherwise, it receives a default L tone.

6. Shona

In this section we compare the tonal adaptation patterns found in Y and Ha with the results of a preliminary study of E loans into Shona (S) based on the E words beginning in the letters r, s, k, b, and f in M. Hannah's (1981) dictionary (cf. also Carter 1983). In S, the syllable is the tone-bearing unit; S contrasts H vs. L (or zero) in nouns so that two

tone patterns occur for monosyllables, four for disyllables, and eight for trisyllables. Verbs are H or L as a function of the root. On the basis of the data collected, tonal adaptation in S appears to be much simpler. As in Y and H, the syllable corresponding to main stress of the E source is assigned a H. But there is no spread of H in proparoxytones. Furthermore, epenthetic syllables are uniformly L as well. The only case of H spread is a few words in which a syllable is found between two the correspondents of two stressed syllables that are assigned a H. In other words, the expected HLH is replaced by HHH. Not enough data with multiple stresses has been located to determine if both stresses translate to H as a general rule.

(24)

<u>proparoxytones</u>			
'recipe	resipi HLL	'lemonade	remonedhi HLLL
'litany	ritani HLL	phi'losophy	firosofi LHLL
'cinnamon	sinamoni HLLL		
<u>epenthetic vowels</u>			
'sulpher	sarifa HLL	'sister	sisita HLL
'silver	sirivhu HLL	'filter	filita HLL
'snow	sinou LHL	'cream	kirimu LHL
'skirt	siketi LHL	'clips	kiripisi LHLL
'clinic	kiriniki LHLL	'blanket	bhurangeti LHLL
<u>multiple stress</u>			
ac'cele"rator	senereta HHHL	'sell-"out	sereauti HHHL
'flying ma"chine	furaimachina LHLLHL		

While the assignment of L to the correspondents of stressless syllables might be argued to mimic the F0 of the source, the consistent assignment of L to epenthetic syllables as well suggests that L is a default. This accords with the received view that Shona and Bantu languages in general contrast H vs. Ø. The choice of L as the default is arguably also in accord with Minimal Salience, given that H marks salient syllables.

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