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## Tone in Saxwe

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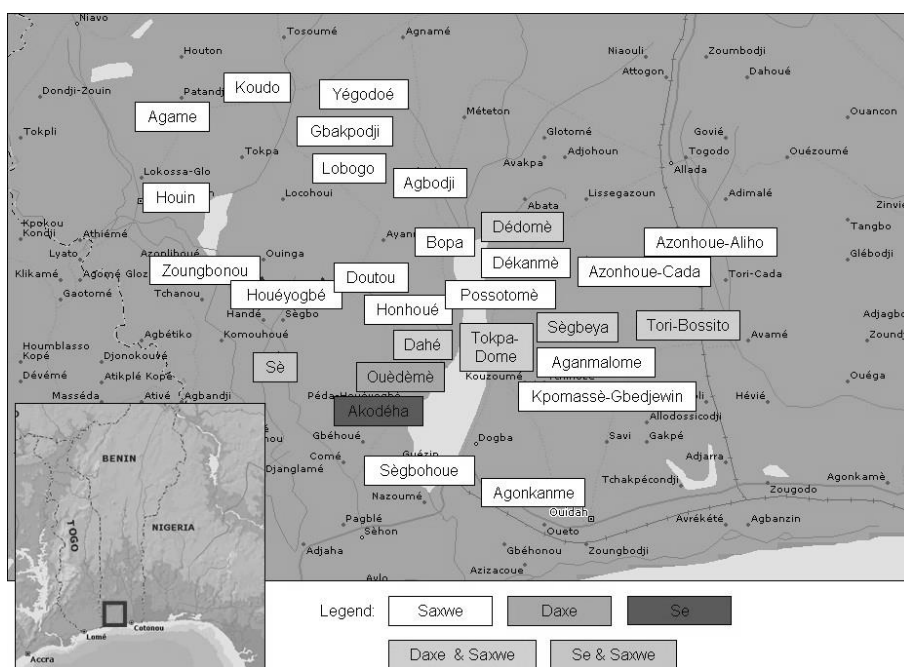
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## Appendix A: Map of Saxwe speakers

The following figure is included by permission of Kluge and Johnson, editor and author respectively of an SIL Electronic Survey Report (Johnson & SIL International, 2011) on the Saxwe language. As the legend indicates, the towns framed in white boxes are reported by members of the local population as being places where Saxwe is spoken.

Figure 1: Map of the Saxwe, Daxe, and Se language areas (based on Microsoft Corporation 2002)<sup>126</sup>



<sup>126</sup> The data contained in this map represent the perceptions of Saxwe, Daxe, and Se speakers and have not been otherwise confirmed. This map displays those places known to Microsoft Encarta's "World atlas" (Microsoft Corporation, 2002), and Google's Map data (Google Maps, 2009).



## Appendix B: Monomorphemic verbs

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The following is a list of the monomorphemic verbs that were used for the analysis of verb tone patterns. Recordings are available online at the following site: <https://drive.google.com/open?id=1Lsu0ipaXPX8yb7DGoF7dH57S73NoSpBQ>.

The file name for each recording can be obtained by substituting the appropriate list number and gloss given below in the following formula: `sxw-[List number]-verbs-[gloss]-un.wav`.

L0162	cold (be)	fa	[H]	L0156	take, choose	sə	[H]
L0182	embrace	fã	[H]	L0141	leave	sõ	[H]
L0143	wake up	fõ	[H]	L0188	run away	si	[H]
L0165	burn	fjɔ	[H]	L0190	respect	si	[H]
L0161	tight (be)	fjõ	[H]	L0185	go and arrive	sĩ	[H]
L0163	press	fjõ	[H]		somewhere		
L0173	shell	fle	[H]	L0189	crawl	ta	[H]
L0167	fall	fle	[H]	L0198	fabricate	ta	[H]
L0164	displace, overturn	fli	[H]	L0203	draw	ta	[H]
L0175	scatter	fu	[H]	L0197	begin	tə	[H]
L0172	pulverize	fũ	[H]	L0202	touch	tə	[H]
L0181	lift up	kə	[H]	L0144	go out	tõ	[H]
L0170	skin an animal	kõ	[H]	L0186	pierce	tõ	[H]
L0171	remove the innards	kε	[H]	L0187	turn on, light	tε	[H]
L0154	bid fare-well to	klã	[H]	L0178	join together	tʃa	[H]
L0151	clean	klə	[H]	L0179	choose	tʃã	[H]
L0157	shine	klɛ	[H]	L0174	watch over	tʃɔ	[H]
L0158	end	kpa	[H]	L0168	cover	tʃõ	[H]
L0177	end	kpa	[H]	L0176	remain somewhere	tʃĩ	[H]
L0145	close to (be)	kpə	[H]	L0184	turn off	tʃĩ	[H]
L0199	see	kpõ	[H]	L0152	explain	tĩ	[H]
L0180	meet	kpe	[H]	L0148	pound	to	[H]
L0183	suffice	kpe	[H]	L0149	turn sth	trə	[H]
L0169	learn, teach	kplã	[H]	L0221	stop	tre	[H]
L0166	put together	kple	[H]	L0159	rip	trɛ	[H]
L0146	bring together	kpli	[H]	L0153	interweave	tro	[H]
L0142	die	ku	[H]	L0192	vomit	tru	[H]
				L0196	close	tu	[H]

L0201	untie	tũ	[H]	L0132	cloudy (be)	fɪu	[L]
L0194	bend	xa	[H]	L0074	kill	fɪu	[L]
L0195	rolled up (be)	xa	[H]	L0080	open	fũ	[L]
L0200	climb	xɛ	[H]	L0055	move	fɪwã	[L]
L0193	tickle	xjɔ	[H]	L0069	missing (be), few	fɪwe	[L]
L0155	dry (be)	xu	[H]	L0083	grill	fɪwi	[L]
L0160	bend down	xwi	[H]	L0133	fight over	fɪwlɛ̃	[L]
L0191	dry	xwja	[H]	L0068	buy a liquid	jɛ	[L]
L0120	rent	da	[L]	L0036	make seedling, transplant	va	[L]
L0130	weigh	da	[L]	L0001	finish	vɔ	[L]
L0134	throw	da	[L]	L0010	at ease (be)	vo	[L]
L0135	pull	dõ	[L]	L0038	comb one's hair	vũ	[L]
L0076	last long	dẽ	[L]	L0063	sweep	za	[L]
L0002	remain	drõ	[L]	L0015	fly, hop, walk	zõ	[L]
L0127	stretch out	drẽ	[L]	L0112	saw	zɛ	[L]
L0125	rain	dʒa	[L]	L0101	intelligent (be)	zĩ	[L]
L0073	happen, occur	dʒɔ	[L]	L0045	lean against	zjõ	[L]
L0126	upright (be)	dʒɔ	[L]	L0042	insult	zũ	[L]
L0059	fall	dʒɛ	[L]	L0066	become	zũ	[L]
L0092	suit	dʒɛ	[L]	L0058	blessed (be)	ɕɛ	[L]
L0084	give birth	dʒi	[L]	L0082	knead sth moist	fã	[L]
L0124	remove kernels	gã	[L]	L0061	find, happen upon	fɔ	[L]
L0081	break, shatter	gba	[L]	L0070	steal	fĩ	[L]
L0013	breathe	gbõ	[L]	L0095	blow one's nose	fĩ	[L]
L0014	return	gbõ	[L]	L0018	walk briskly	fja	[L]
L0060	pass by	gbõ	[L]	L0131	itch	fjɔ	[L]
L0094	pick	gbẽ	[L]	L0139	troubled (be)	fjɛ	[L]
L0086	knock against	gbla	[L]	L0138	throw	flẽ	[L]
L0140	too big (be)	gbla	[L]	L0017	remember	flĩ	[L]
L0129	lukewarm (be)	gblɔ	[L]	L0075	travel in spirit	fo	[L]
L0121	cut	gbo	[L]	L0054	concern	kã	[L]
L0011	cease	gɔ	[L]	L0079	look for	kã	[L]
L0136	heal	gɔ	[L]	L0008	light up	kõ	[L]
L0056	rub	glĩ	[L]	L0090	pour	kõ	[L]
L0012	fat (be)	glo	[L]				
L0087	examine	glo	[L]				
L0122	rip up, dig up	fõ	[L]				
L0085	carry	fẽ	[L]				



L0067	big (be)	kɛ	[L]	L0118	thick (be)	tri	[L]
L0091	open	kɛ	[L]	L0047	buy	xɔ	[L]
L0106	open with care	klɛ	[L]	L0064	burp	xɔ	[L]
L0113	hit against	klɛ̃	[L]	L0026	hit, beat	xo	[L]
L0072	scratch skin	klu	[L]	L0050	hit	xo	[L]
L0078	mock	ko	[L]	L0110	plant	xwa	[L]
L0033	praise	kpa	[L]	L0102	bargain	xwle	[L]
L0114	peel, remove outside	kpa	[L]	L0150	shave	xwle	[L]
L0077	carry on back	kpã	[L]	L0273	draw up, pour out liquid	ba	[L]
L0009	cheap (be)	kpo	[L]	L0276	meet together	bɔ	[L]
L0034	weed	kpo	[L]	L0272	hide, be hidden	bɛ	[L]
L0007	heavy (be)	kpɛ̃	[L]	L0274	burn	bi	[L]
L0089	hang up	kpla	[L]	L0278	ripe (be)	bjɑ	[L]
L0108	lead, accompany	kplo	[L]	L0275	roll	bli	[L]
L0111	dull (be)	kpo	[L]	L0277	think	bu	[L]
L0115	poke	kpo	[L]	L0123	cook	ɖɑ	[L]
L0103	drive	kũ	[L]	L0057	remove	ɖɛ	[L]
L0107	dig	kũ	[L]	L0062	harvest	ɖɛ	[L]
L0041	knot	sa	[L]	L0071	marry	ɖɛ	[L]
L0099	sell	sa	[L]	L0096	draw	ɖɛ	[L]
L0040	filter	sɔ̃	[L]	L0088	seem	ɖi	[L]
L0020	hear	se	[L]	L0137	bury	ɖi	[L]
L0031	sense, feel	se	[L]	L0128	eat	ɖu	[L]
L0028	worship	sɛ̃	[L]	L0093	yawn	ɣã	[L]
L0049	harvest (by cutting)	si	[L]	L0025	go	ji	[L]
L0016	mature	sĩ	[L]	L0116	tell, say	lɔ	[L]
L0100	stubborn (be)	sjã	[L]	L0021	accept	lɔ̃	[L]
L0117	have diarrhea	sra	[L]	L0035	weave	lɔ̃	[L]
L0006	numerous (be), suffice	su	[L]	L0005	be at, exist	le	[L]
L0052	sift	ta	[L]	L0030	wet oneself, sprinkle oneself	lɛ	[L]
L0027	sew	tɔ	[L]	L0003	grind	li	[L]
L0051	fry in oil	tɔ	[L]	L0037	grind	li	[L]
L0019	limp	tɔ̃	[L]	L0269	grill	mɛ̃	[L]
L0109	swollen (be)	te	[L]	L0270	sting, bite	mɛ̃	[L]
L0097	sew	tʃi	[L]	L0271	swallow	mĩ	[L]
L0039	organize	to	[L]	L0279	fall over, demolished (be)	mũ	[L]

L0029	wash	nã	[L]	L0204	ruined (be)	gu	[L <sup>R</sup> ]
L0032	knead	nã	[L]	L0231	in need of (be)	hjá	[L <sup>R</sup> ]
L0044	chase	nã	[L]	L0239	scatter	hîê	[L <sup>R</sup> ]
L0098	rest, lie on	nõ	[L]	L0260	acid (be)	hîwã	[L <sup>R</sup> ]
L0046	rotten (be)	nõ	[L]	L0247	lend, borrow	hîwe	[L <sup>R</sup> ]
L0104	wet (be)	nõ	[L]	L0243	smell	hîwê	[L <sup>R</sup> ]
L0022	bad (be), ugly (be)	nřã	[L]	L0245	mature	hîwê	[L <sup>R</sup> ]
L0024	drink	nũ	[L]	L0240	hide	hîwla	[L <sup>R</sup> ]
L0043	do	wa	[L]	L0208	come	va	[L <sup>R</sup> ]
L0119	pierce	wɔ	[L]	L0229	afraid of (be)	vɔ	[L <sup>R</sup> ]
L0023	forget	wõ	[L]	L0222	expensive (be)	vɛ	[L <sup>R</sup> ]
L0004	black (be)	wi	[L]	L0261	bitter (be)	vɛ	[L <sup>R</sup> ]
L0048	sneeze	wĩ	[L]	L0224	unfold	vlu	[L <sup>R</sup> ]
L0065	do animal husbandry	wĩ	[L]	L0217	rip	vũ	[L <sup>R</sup> ]
L0105	write	wlã	[L]	L0223	mistreat	zã	[L <sup>R</sup> ]
L0210	sleep	dɔ	[L <sup>R</sup> ]	L0211	appear suddenly	ze	[L <sup>R</sup> ]
L0234	command, order	dõ	[L <sup>R</sup> ]	L0284	begin	be	[LH]
L0205	missing (be)	dê	[L <sup>R</sup> ]	L0285	gather up	be	[LH]
L0216	succeed	dĩ	[L <sup>R</sup> ]	L0290	cooked (be)	bi	[LH]
L0246	dress oneself	do	[L <sup>R</sup> ]	L0291	ask for sth	bjɔ	[LH]
L0253	plant	do	[L <sup>R</sup> ]	L0286	attach	bla	[LH]
L0252	cut into pieces	dʒa	[L <sup>R</sup> ]	L0215	sharpen	ɖa	[LH]
L0258	busy (be)	dʒã	[L <sup>R</sup> ]	L0256	sharp (be)	ɖa	[LH]
L0244	swell up	dʒi	[L <sup>R</sup> ]	L0235	have	ɖo	[LH]
L0241	publish	dʒla	[L <sup>R</sup> ]	L0238	put in piles	ɖo	[LH]
L0237	measure	dʒlɛ	[L <sup>R</sup> ]	L0249	pronounce	ɖo	[LH]
L0233	desire	dʒlo	[L <sup>R</sup> ]	L0230	enter	djɛ	[LH]
L0255	saved (be)	gã	[L <sup>R</sup> ]	L0250	scrape	ya	[LH]
L0254	build	gba	[L <sup>R</sup> ]	L0268	hurry up	ja	[LH]
L0259	wrap a skirt	gba	[L <sup>R</sup> ]	L0214	call	jɔ	[LH]
L0209	refuse	gbɛ	[L <sup>R</sup> ]	L0264	receive	ji	[LH]
L0206	break, ruined (be)	gble	[L <sup>R</sup> ]	L0263	bless	jra	[LH]
L0232	bark	gbo	[L <sup>R</sup> ]	L0226	hit and carry off	lɔ	[LH]
L0236	full (be)	gɔ	[L <sup>R</sup> ]	L0267	swell up	lõ	[LH]
L0257	half close	gla	[L <sup>R</sup> ]	L0213	leave	lɛ	[LH]
L0242	twist	glõ	[L <sup>R</sup> ]	L0220	level (be)	li	[LH]
L0248	avoid	glo	[L <sup>R</sup> ]	L0262	stack wood	li	[LH]
L0251	impossible (be)	glo	[L <sup>R</sup> ]	L0281	divide	mã	[LH]
				L0283	force-feed	mõ	[LH]

L0288	deny	mõ	[LH]	L0147	white (be)	we	[LH]
L0289	bald (be)	mõ	[LH]	L0265	break, crack	wẽ	[LH]
L0280	clean (be)	mẽ	[LH]	L0225	fold	wlã	[LH]
				L0228	catch	wle	[LH]
				L0219	germinate, grow	wu	[LH]
L0282	fine (be)	mẽ	[LH]				
L0287	tighten	mjõ	[LH]				
L0218	give	nã	[LH]				
L0207	good (be)	ɲõ	[LH]				
L0212	know	ɲõ	[LH]				
L0266	be	ɲĩ	[LH]				
L0227	wet, soak	ɲrõ	[LH]				



## Appendix C: Monomorphemic nouns

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The following is a list of the monomorphemic nouns that were used for the analysis of noun tone patterns. Recordings are available online at the following site: <https://drive.google.com/open?id=1muj7g8mvBq33Fyq5c2-4XkEdiNPXs8xB>.

The file name for each recording can be obtained by substituting the appropriate list number and gloss given below in the following formula: `sxw-[List number]-VCV nouns-[gloss]-un.wav`.

L0051	arm	abɔ	[M.H]	L0106	gunpowder	ɛwɛ	[M.H]
L0050	soap	aɖi	[M.H]	L0220	harmattan	obja	[M.H]
L0052	tooth	aɖu	[M.H]	L0045	amulet	obo	[M.H]
L0104	comb	aja	[M.H]	L0221	silence	oɖa	[M.H]
L0215	foreskin	aju	[M.H]	L0187	dirt	oɖju	[M.H]
L0053	coal	akã	[M.H]	L0163	error	ofẽ	[M.H]
L0057	fist	akɔ̃	[M.H]	L0082	place	ofi	[M.H]
L0055	boat	aklo	[M.H]	L0081	ashes	ofi	[M.H]
L0107	type of porridge	akpli	[M.H]	L0105	dry season	ofjo	[M.H]
L0046	liver	ali	[M.H]	L0222	fur	ofũ	[M.H]
L0054	corn dish	amã	[M.H]	L0170	call	ojɔ	[M.H]
L0223	raw food	amũ	[M.H]	L0101	sweet potato	ojwe	[M.H]
L0102	crab (sp)	asɔ̃	[M.H]	L0236	calabash	oka	[M.H]
L0103	hand (archaic)	asi	[M.H]	L0137	neighborhood	okɔ	[M.H]
L0056	beauty	atfɔ	[M.H]	L0139	sand, earth	okɔ	[M.H]
L0061	debt	axɔ	[M.H]	L0142	stomach	okɔ	[M.H]
L0219	tongue	edɛ	[M.H]	L0171	termite	okɔ	[M.H]
L0216	washing powder	efɛ	[M.H]	L0296	woven pouch	okẽ	[M.H]
L0059	thanks	ɛkpɛ	[M.H]	L0240	enclosure	okpa	[M.H]
L0109	rock	ɛkpẽ	[M.H]	L0047	meeting	okpli	[M.H]
L0217	cough	ɛkpjɔ̃	[M.H]	L0048	widow	okpo	[M.H]
L0108	dry season	ɛku	[M.H]	L0228	mountain	okpo	[M.H]
L0188	mosquito	ɛmwĩ	[M.H]	L0168	death	oku	[M.H]
L0164	spirit	ese	[M.H]	L0083	grain	okũ	[M.H]
L0058	gazelle	etje	[M.H]	L0235	crocodile	olo	[M.H]
L0060	water-born parasite	etre	[M.H]	L0239	proverb	olo	[M.H]
				L0227	path	omɔ̃	[M.H]

L0143	thing	onũ	[M.H]	L0255	pocket	akpo	[M.M]
L0165	goodness	oɲwẽ	[M.H]	L0245	hand	alo	[M.M]
L0231	horse	osɔ	[M.H]	L0241	incest	ale	[M.M]
L0084	law, interdiction	osẽ	[M.H]	L0248	benefit	ale	[M.M]
L0234	boulder	oso	[M.H]	L0301	kidneys, waist, hips, lower back	alĩ	[M.M]
L0238	thorn	oso	[M.H]	L0266	toothpick	alo	[M.M]
L0226	husband, male	osu	[M.H]	L0264	oil	amĩ	[M.M]
L0140	saliva	otã	[M.H]	L0173	diarrhea	asra	[M.M]
L0230	father	otɔ	[M.H]	L0287	hive	atɔ	[M.M]
L0172	grinding stone	ote	[M.H]	L0176	red monkey	ato	[M.M]
L0218	cadaver	otfɔ	[M.H]	L0149	raindrop	atrɔ	[M.M]
L0166	tree	otĩ	[M.H]	L0044	clothing	awu	[M.M]
L0169	hill	oto	[M.H]	L0131	ocean, sea	axu	[M.M]
L0233	ear	oto	[M.H]	L0175	hernia	axu	[M.M]
L0237	group	oto	[M.H]	L0130	wing	axwe	[M.M]
L0136	gun	otu	[M.H]	L0148	nail, claw	ɛfẽ	[M.M]
L0049	caterpillar (sp)	owã	[M.H]	L0145	theft	ɛfĩ	[M.M]
L0225	odor	owã	[M.H]	L0146	destiny	ɛje	[M.M]
L0167	corn flour	owɔ	[M.H]	L0147	person	ɛmẽ	[M.M]
L0144	caterpillar (sp)	owe	[M.H]	L0099	water	ɛsĩ	[M.M]
L0284	white	owe	[M.H]	L0080	straw	ɛte	[M.M]
L0138	bee	owĩ	[M.H]	L0127	announce- ment	ɛwẽ	[M.M]
L0085	broom	oxa	[M.H]	L0110	sea, ocean	ɛxu	[M.M]
L0232	word, news	oxo	[M.H]	L0174	hair	oɖa	[M.M]
L0224	bone	oxu	[M.H]	L0129	bean (sp)	ofjo	[M.M]
L0141	corn worm	oxwi	[M.H]	L0263	memory	oflĩ	[M.M]
L0249	forked branch	aba	[M.M]	L0259	rope, cord	okã	[M.M]
L0243	wound	abi	[M.M]	L0150	neck	okɔ	[M.M]
L0247	shot, syringe	abwi	[M.M]	L0251	hole	oklo	[M.M]
L0242	anger	adji	[M.M]	L0151	panther	okpɔ	[M.M]
L0267	leg	afɔ	[M.M]	L0258	whistle	okpẽ	[M.M]
L0128	suffering	aja	[M.M]	L0100	meat, animal	olã	[M.M]
L0126	bean	aji	[M.M]	L0292	millet	oli	[M.M]
L0244	butterfly	akɔ	[M.M]	L0153	cow	oɲĩ	[M.M]
L0265	paternal lineage	akɔ	[M.M]	L0254	interdiction	osu	[M.M]
L0092	pocket	akpo	[M.M]	L0253	lake	otɔ	[M.M]
				L0256	shrew	otɔ̃	[M.M]
				L0261	mortar	oto	[M.M]
				L0268	village, geographic region	oto	[M.M]

L0246	palm grub	otrã	[M.M]	L0177	corn	adã	[M.L <sup>R</sup> ]
L0155	bachelor	otrê	[M.M]		porridge		
L0097	hole, piercing	otro	[M.M]	L0279	palm kernel oil	adi	[M.L <sup>R</sup> ]
L0152	bush animal (sp)	owɔ	[M.M]	L0132	commerce	adʒɔ	[M.L <sup>R</sup> ]
L0096	danse	owe	[M.M]	L0180	wasp	agbɔ̃	[M.L <sup>R</sup> ]
L0260	necklace	owlɔ	[M.M]	L0041	tumor	agbi	[M.L <sup>R</sup> ]
L0252	room, house	oxɔ	[M.M]	L0179	knot	ago	[M.L <sup>R</sup> ]
L0262	bird	oxɛ	[M.M]	L0288	navel	ah̃ɔ̃	[M.L <sup>R</sup> ]
L0257	wild grass (sp)	oxo	[M.M]	L0063	mist	ah̃ũ	[M.L <sup>R</sup> ]
L0118	first growing season	oxwe	[M.M]	L0124	breast	anɔ̃	[M.L <sup>R</sup> ]
L0156	rainy season	oxwe	[M.M]	L0274	date	azã	[M.L <sup>R</sup> ]
L0250	year	oxwe	[M.M]	L0273	peanut	azĩ	[M.L <sup>R</sup> ]
L0154	market	oxwi	[M.M]	L0078	palm nut	ɛde	[M.L <sup>R</sup> ]
L0014	descent	aklɔ	[M.M <sup>o</sup> ]	L0042	sweat	ɛdê	[M.L <sup>R</sup> ]
L0008	fish (sp)	akpa	[M.M <sup>o</sup> ]	L0276	cock's comb	ɛdê	[M.L <sup>R</sup> ]
L0010	peel, bark	akpa	[M.M <sup>o</sup> ]	L0079	palm nut center	ɛnê	[M.L <sup>R</sup> ]
L0009	leaf	amã	[M.M <sup>o</sup> ]	L0275	monkey	ɛzĩ	[M.L <sup>R</sup> ]
L0012	left side	amjɔ̃	[M.M <sup>o</sup> ]	L0272	work	odã	[M.L <sup>R</sup> ]
L0013	divination tool	ekple	[M.M <sup>o</sup> ]	L0074	frog	odĩ	[M.L <sup>R</sup> ]
L0015	corn starch dish	odju	[M.M <sup>o</sup> ]	L0070	armoire	odrɔ̃	[M.L <sup>R</sup> ]
L0006	root	okjɔ̃	[M.M <sup>o</sup> ]	L0280	dream	odrɔ	[M.L <sup>R</sup> ]
L0002	stick	okpo	[M.M <sup>o</sup> ]	L0133	tomato, oil condiment	odʒa	[M.L <sup>R</sup> ]
L0016	chair	okpo	[M.M <sup>o</sup> ]	L0075	flea, louse	odʒɔ	[M.L <sup>R</sup> ]
L0283	mother	onɔ̃	[M.M <sup>o</sup> ]	L0073	animal fat	odʒu	[M.L <sup>R</sup> ]
L0001	mouth	onũ	[M.M <sup>o</sup> ]	L0043	chief	oga	[M.L <sup>R</sup> ]
L0007	wife, female	osi	[M.M <sup>o</sup> ]	L0125	box for valuables	ogba	[M.L <sup>R</sup> ]
L0005	manioc	ote	[M.M <sup>o</sup> ]	L0065	goat	ogbɔ	[M.L <sup>R</sup> ]
L0003	cloth roll to protect head	otu	[M.M <sup>o</sup> ]	L0277	menstrual period	ogbe	[M.L <sup>R</sup> ]
L0011	black	owi	[M.M <sup>o</sup> ]	L0278	grass	ogbe	[M.L <sup>R</sup> ]
L0095	board	oxwle	[M.M <sup>o</sup> ]	L0077	eggplant (sp)	ogbo	[M.L <sup>R</sup> ]
L0018	soul	okla	[M.HL]	L0281	pocket	ogo	[M.L <sup>R</sup> ]
L0229	day	oklo	[M.HL]	L0134	millipede	ohã	[M.L <sup>R</sup> ]
				L0269	hawk	oh̃ɔ̃	[M.L <sup>R</sup> ]
				L0270	money	oh̃o	[M.L <sup>R</sup> ]
				L0076	vehicle, car	oh̃ũ	[M.L <sup>R</sup> ]
				L0271	drum	oh̃ũ	[M.L <sup>R</sup> ]
				L0069	projectile	oh̃wã	[M.L <sup>R</sup> ]
				L0135	knife	oh̃wi	[M.L <sup>R</sup> ]

L0068	hoe	olī	[M.L <sup>R</sup> ]	L0098	cane rat	azo	[M.L]
L0123	excrement	omĩ	[M.L <sup>R</sup> ]	L0119	horn	azo	[M.L]
L0072	intestinal	ovḏ	[M.L <sup>R</sup> ]	L0121	life	εgbe	[M.L]
	worm			L0200	beard	εgẽ	[M.L]
L0088	monitor	ove	[M.L <sup>R</sup> ]	L0193	blood	εhũ	[M.L]
	lizard			L0192	scar	εhwε	[M.L]
L0067	child	ovi	[M.L <sup>R</sup> ]	L0122	dispute	εvũ	[M.L]
L0064	dog	ovũ	[M.L <sup>R</sup> ]				
L0066	night	ozã	[M.L <sup>R</sup> ]	L0093	manioc	oba	[M.L]
L0071	clay jar	ozẽ	[M.L <sup>R</sup> ]		dish		
L0294	invisibility	ozĩ	[M.L <sup>R</sup> ]	L0197	crossbow	oda	[M.L]
	powers			L0039	snake	odã	[M.L]
L0295	short dry	ozo	[M.L <sup>R</sup> ]	L0203	fishing net	odɔ	[M.L]
	season			L0091	border	ode	[M.L]
L0184	cooked	abo	[M.L]	L0111	land	odo	[M.L]
	beans				boundary		
L0212	sickness	adḏ	[M.L]	L0181	underside	odo	[M.L]
L0112	cat	ade	[M.L]	L0211	straw mat	odzã	[M.L]
L0086	cage	adʒa	[M.L]	L0205	long thin	odʒo	[M.L]
L0289	agricultural	adʒi	[M.L]		insect (sp)		
	abundance,			L0209	salt	odʒe	[M.L]
	yield			L0206	heart	odʒi	[M.L]
L0214	load	agbã	[M.L]	L0208	dispute,	odʒle	[M.L]
L0189	underside	ago	[M.L]		fight		
L0302	tardiness	ago	[M.L]	L0195	hour, time	ogã	[M.L]
L0286	palmyra	agḏ	[M.L]	L0196	proclama- tion	ogã	[M.L]
	palm fruit						
L0158	jaw	aglã	[M.L]	L0213	iron	ogã	[M.L]
L0178	crab	aglã	[M.L]	L0087	animal	ogbã	[M.L]
L0113	group	agũ	[M.L]		footprint		
L0157	drink	ahã	[M.L]	L0190	language	ogbe	[M.L]
L0182	marrow	ahḏ	[M.L]	L0090	bean fried	ogbo	[M.L]
L0183	brain	ahḏ	[M.L]		snack		
L0185	snake (sp)	ahḏ	[M.L]	L0199	field	ogle	[M.L]
L0191	locust bean	ahwa	[M.L]	L0040	wall	ogli	[M.L]
	pod			L0120	hole	ogũ	[M.L]
L0094	war	ahwã	[M.L]	L0115	pig	ohã	[M.L]
L0198	granary	ava	[M.L]	L0116	song	ohã	[M.L]
L0202	cloth	avɔ	[M.L]	L0204	forest	ohḏ	[M.L]
L0290	palm leaf	azã	[M.L]	L0207	door	ohḏ	[M.L]
	bud			L0210	throat	ohlo	[M.L]
L0114	smoke,	azɔ	[M.L]	L0291	religion of some	ohũ	[M.L]
	haze				Saxwe		
L0194	tobacco	azɔ	[M.L]		machine	omḏ	[M.L]
L0201	egg	azĩ	[M.L]	L0161			



L0089	kola nut	ovi	[M.L]	L0285	red	ovɛ	[M.L°]
L0162	ax	ovja	[M.L]	L0186	penis	ada	[L.LH]
L0160	fire	ozo	[M.L]	L0038	nest	ado	[L.LH]
L0117	insult	ozũ	[M.L]	L0030	red dirt	ado	[L.LH]
L0026	genie	agja	[M.L°]		wall		
L0020	side	aña	[M.L°]	L0031	dish	agbã	[L.LH]
L0029	rabbit	azwi	[M.L°]	L0159	ram	agbo	[L.LH]
L0027	black snake	egle	[M.L°]	L0062	tofu	amɔ	[L.LH]
L0028	squirrel	odwe	[M.L°]	L0032	disabled	obo	[L.LH]
L0025	bottle	ogo	[M.L°]		person		
L0024	corn weevil	ohjã	[M.L°]	L0036	trash	odũ	[L.LH]
L0021	fish	ohwe	[M.L°]	L0037	desire	odʒlo	[L.LH]
L0023	sun	ohwe	[M.L°]	L0033	rain	odʒu	[L.LH]
L0004	spider	oje	[M.L°]	L0035	hat	ogba	[L.LH]
L0022	fishhook	omlě	[M.L°]	L0034	evil	ovwě	[L.LH]
L0019	head	ota	[M.L°]				



## Appendix D: Nouns recorded for phonetic implementation discussion

The following is the list of nouns recorded by four speakers as the basis for the description of the phonetic implementation of V.C(C)V nouns (section 7.5). Six tone patterns were selected for recording.

/M.H/	/M.M/	/M.L/	/M.M <sup>H</sup> /	/M.L <sup>H</sup> /	/M.LH/
oka 'calebash'	aɖi 'anger'	agbã 'baggage'	owi 'black (NOM)'	ogo 'bottle'	ofũ 'car'
akã 'charcoal'	alɔ 'hand'	ɛgẽ 'beard'	akpa 'carp'	ofjã 'corn weevil'	ovi 'child'
aja 'comb'	ɛfẽ 'fingernail'	ɛfũ 'blood'	ote 'yam'	omlẽ 'fishhook'	ovũ 'dog'
okɔ 'dirt'	oɖa 'hair'	afĩ 'brain'	amã 'leaf'	ota 'head'	ogbo 'goat'
ofẽ 'error'	afɔ 'leg'	avɔ 'cloth'	onɔ 'mother'	azwi 'rabbit'	ofĩ 'hawk'
ofũ 'fur'	axu 'ocean'	azĩ 'egg'	onũ 'mouth'	ove 'red (NOM)'	olĩ 'hoe'
ɛkpẽ 'rock'	amĩ 'oil'	ava 'granary'	otu 'rag'	afia 'side'	ofwi 'knife'
aɖi 'soap'	aja 'suffering'	oba 'manioc porridge'	okjɔ 'root'	oje 'spider'	ofio 'money'
ɛɖe 'tongue'	ɛfi 'theft'	odzã 'mat'	okpo 'stick'	odwe 'squirrel'	ozã 'night'
aɖu 'tooth'	ɛsi 'water'	odze 'salt'	osi 'wife'	ofwe 'sun'	azi 'peanut'



## Appendix E: Text with underlying and surface tones

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The following text is found in its entirety at the site:

<https://drive.google.com/open?id=10LDp4U5snDEMBIXbSvZKiq-YHvivjvaS>.

The filename for the recording of this text is: *sxw-T0002-texts-un.wav*, and excerpts of this text with free translations in French are found in the recordings within the same folder running from: *sxw-T0022-texts-un.wav* to *sxw-T0028-texts-un.wav*.

lé	nā̄	M- jē <sup>H</sup>	nō̄	gbè̀	ājī	dó	M- xé̄	L%
lě	ná	jé	nó	gbè̀	àjì	dó	↓xé̄	
how	SUB	3PL	HAB	pick	beans	how:PART	this	

This is how they pick beans.

nā̄	<sup>H</sup>		ājī	lá	sjé̄	vò	L	H%
nā̄			ájì	↓lá	sjé̄	vò°:		
SUB	FUNCTION.UNKNOWN		beans <sup>127</sup>	DET	harden	COMPL	TOP	

When the beans have finished growing,

M- jē <sup>H</sup>	nā̄	vǎ	jī	gbè̀-Ṽ	L%
jē	nā̄	và	jì	gbè̀:	
3PL	FUT	come	go	pick-3SG	

they will go pick them.

M- jē <sup>H</sup>	gbè̀-Ṽ	L	H%
jē	gbè̀°:		
3PL	pick-3SG	TOP	

When they have picked them,

M- jē <sup>H</sup>	nā̄	só	xwjá	dò	M- fhwè <sup>H</sup> -nū̄ <sup>Hω</sup>	L%
jē	nā̄	só	xwjá	dó	fhwè-nū̄°	
3PL	FUT	take	dry.out	at	sun-plane	

they will take and dry them out in the outdoors,

---

<sup>127</sup> Note that /aji/ 'beans' is a mass noun in Saxwe.

M- é bā xú L%  
 é bá ↓xú  
 3SG CONJ:DS be.dry  
 and they will dry,

M- jē<sup>H</sup> bā b́é dǒ ātī mē̃ L%  
 jē bā b́é d́ó átí mē̂  
 3PL CONJ:DS gather at sack in  
 and they will gather [them] in a sack,

á bō tó-Ṽ L%  
 á bó ↓twè:  
 CONJ:SS CONJ pound-3SG  
 and pound them.

M- jē<sup>H</sup> tó-Ṽ vò L H% M- jē<sup>H</sup> nā́ fú-Ṽ L%  
 jē twé: vò°: jē nā́ fwí:  
 3PL pound-3SG COMPL TOP 3PL FUT winnow-3SG  
 When they've finished pounding them, they will winnow them,

á bō dǒ-Ṽ M- dǒ-kpō<sup>Hω</sup> mē̃ L%  
 á bó dwè: dǒ-kpò mē̂  
 CONJ:SS CONJ put-3SG stomach-pouch in  
 and put them in a sack.

## Appendix F: Locations of audio files

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The audio files which accompany this study are located at the following sites. This table gives the location of audio files referred to in all chapters except chapter 7, which deals with phonetic implementation. (Those audio files are listed further in this appendix.)

<b>Zippered file related to:</b>	<b>URL</b>
Alternate reduplication	<a href="https://drive.google.com/open?id=1vhq94YfLA9BtPkDog3D58v2lanqHp93U">https://drive.google.com/open?id=1vhq94YfLA9BtPkDog3D58v2lanqHp93U</a>
Associative construction	<a href="https://drive.google.com/open?id=1sWYrpvJXdq1O8DxYY05ynoql49S-Q6RR">https://drive.google.com/open?id=1sWYrpvJXdq1O8DxYY05ynoql49S-Q6RR</a>
Auxiliaries	<a href="https://drive.google.com/open?id=1jRcLhyU95g2dhpGC6PYg93wO2XgCvP1E">https://drive.google.com/open?id=1jRcLhyU95g2dhpGC6PYg93wO2XgCvP1E</a>
Borrowed words	<a href="https://drive.google.com/open?id=1k5e5UA29N9_T27pTOEgbmxDXdLuCeEUy">https://drive.google.com/open?id=1k5e5UA29N9_T27pTOEgbmxDXdLuCeEUy</a>
Clause connectives	<a href="https://drive.google.com/open?id=1vCT-wa3OtnacyLfBK0-CdNay00_K6uo">https://drive.google.com/open?id=1vCT-wa3OtnacyLfBK0-CdNay00_K6uo</a>
Clause frames	<a href="https://drive.google.com/open?id=11_hAvJveshfLpQDFaxhNdrEgXA37SA7y">https://drive.google.com/open?id=11_hAvJveshfLpQDFaxhNdrEgXA37SA7y</a>
Connective plus jussive	<a href="https://drive.google.com/open?id=16hw050WCEEul9tdDEye rJKhCifmC6_-F">https://drive.google.com/open?id=16hw050WCEEul9tdDEye rJKhCifmC6_-F</a>
Effect of emotion	<a href="https://drive.google.com/open?id=1r1pdhrza8IIN6RvisfW0E4Z59F5QqmuD">https://drive.google.com/open?id=1r1pdhrza8IIN6RvisfW0E4Z59F5QqmuD</a>
Exceptional tone patterns	<a href="https://drive.google.com/open?id=1oy-iVVc-ecFYkEcd3pitYtJzjqvj0Ud">https://drive.google.com/open?id=1oy-iVVc-ecFYkEcd3pitYtJzjqvj0Ud</a>
Final fall tests	<a href="https://drive.google.com/open?id=1EmtyActo9ayfGN90HlhtEpQsTLQo87-Y">https://drive.google.com/open?id=1EmtyActo9ayfGN90HlhtEpQsTLQo87-Y</a>
Focus markers	<a href="https://drive.google.com/open?id=1SGlytjM83sk9ygTdjB2tMYQQ02NCI0x">https://drive.google.com/open?id=1SGlytjM83sk9ygTdjB2tMYQQ02NCI0x</a>
Ideophones	<a href="https://drive.google.com/open?id=1UmEUJ7cKtV5EhAz64QpXPKZeSjJcOKJC">https://drive.google.com/open?id=1UmEUJ7cKtV5EhAz64QpXPKZeSjJcOKJC</a>
Left boundary	<a href="https://drive.google.com/open?id=1MORckJXc7J911yRV5L Fm4fV7mvuFjJar">https://drive.google.com/open?id=1MORckJXc7J911yRV5L Fm4fV7mvuFjJar</a>

Low spread tests	<a href="https://drive.google.com/open?id=1NIANCCrOhlbEkHSPyEvn0nwYmyPTQx8F">https://drive.google.com/open?id=1NIANCCrOhlbEkHSPyEvn0nwYmyPTQx8F</a>
Multi-clause utterances	<a href="https://drive.google.com/open?id=1t4iZCyPILxIepKXN1fQ1RCgkDaW_iSwO">https://drive.google.com/open?id=1t4iZCyPILxIepKXN1fQ1RCgkDaW_iSwO</a>
Negation	<a href="https://drive.google.com/open?id=1AGWvnXCtXsPX8EuLA gjidLlVu7UnemkW">https://drive.google.com/open?id=1AGWvnXCtXsPX8EuLA gjidLlVu7UnemkW</a>
Noun phrases	<a href="https://drive.google.com/open?id=1efM_N1AFgLvolxzP5qMhZL5iPrYaZHao">https://drive.google.com/open?id=1efM_N1AFgLvolxzP5qMhZL5iPrYaZHao</a>
NP boundary tests	<a href="https://drive.google.com/open?id=1j0R1M4eIavI-u_efWsfRCkpV227J6oZg">https://drive.google.com/open?id=1j0R1M4eIavI-u_efWsfRCkpV227J6oZg</a>
Numbers	<a href="https://drive.google.com/open?id=1cs8dsYGKGU8JItAyyq9cq7yafWY4vxzPI">https://drive.google.com/open?id=1cs8dsYGKGU8JItAyyq9cq7yafWY4vxzPI</a>
Other clauses	<a href="https://drive.google.com/open?id=1B0ndj34Rkoeujh8NSrh8R_8_gHATqMBO">https://drive.google.com/open?id=1B0ndj34Rkoeujh8NSrh8R_8_gHATqMBO</a>
Other nouns	<a href="https://drive.google.com/open?id=1-UpNONf043Yop6zv-f0uHlsYFy628HG1">https://drive.google.com/open?id=1-UpNONf043Yop6zv-f0uHlsYFy628HG1</a>
Other verbs	<a href="https://drive.google.com/open?id=1Xn3qdIoobLDhmF7RDZmJ39WcLhEt5vjt">https://drive.google.com/open?id=1Xn3qdIoobLDhmF7RDZmJ39WcLhEt5vjt</a>
Polymorphic nouns	<a href="https://drive.google.com/open?id=1LC-xwQhbaeSWo_zPOW1fpyAvMdg8XxhG">https://drive.google.com/open?id=1LC-xwQhbaeSWo_zPOW1fpyAvMdg8XxhG</a>
Possessive pronouns	<a href="https://drive.google.com/open?id=19MTVziZe-NKKfXygnvOuwpx2pW73kHJ">https://drive.google.com/open?id=19MTVziZe-NKKfXygnvOuwpx2pW73kHJ</a>
Postpositions	<a href="https://drive.google.com/open?id=1v5LSA_1910pi1IFCQ07ecIQzBx-SpGo7">https://drive.google.com/open?id=1v5LSA_1910pi1IFCQ07ecIQzBx-SpGo7</a>
Preposition na	<a href="https://drive.google.com/open?id=13veH2TyOfUS0xJ0y8iQ0qBPyCkZwIkxY">https://drive.google.com/open?id=13veH2TyOfUS0xJ0y8iQ0qBPyCkZwIkxY</a>
Prepositions	<a href="https://drive.google.com/open?id=1AxNRtIkOQ_wSbw83dDZO_1D0lwRUnEmc">https://drive.google.com/open?id=1AxNRtIkOQ_wSbw83dDZO_1D0lwRUnEmc</a>
Presentatives	<a href="https://drive.google.com/open?id=1DJ_dxsILIE6k9Cm6NrOH82J0lyhAID8N">https://drive.google.com/open?id=1DJ_dxsILIE6k9Cm6NrOH82J0lyhAID8N</a>
Pronouns	<a href="https://drive.google.com/open?id=1J7IrrOL54erMX9btQIhisi_FELE9hLC">https://drive.google.com/open?id=1J7IrrOL54erMX9btQIhisi_FELE9hLC</a>
Questions	<a href="https://drive.google.com/open?id=1YfN0k-SlivLXvDxTmLK3v7Unwybi2o9C">https://drive.google.com/open?id=1YfN0k-SlivLXvDxTmLK3v7Unwybi2o9C</a>
Register tests	<a href="https://drive.google.com/open?id=1nA_Z9DcHIQV9nGXGmoYfz-f2gB_FVSMj">https://drive.google.com/open?id=1nA_Z9DcHIQV9nGXGmoYfz-f2gB_FVSMj</a>
Right H boundary	<a href="https://drive.google.com/open?id=1XFgTkCrAZ_CTDzTn8SL_ulcrf_YsMLr">https://drive.google.com/open?id=1XFgTkCrAZ_CTDzTn8SL_ulcrf_YsMLr</a>



Serial verbs	<a href="https://drive.google.com/open?id=1LAzn7vAcoQ5XTakfz17nioyjZsVhzAvc">https://drive.google.com/open?id=1LAzn7vAcoQ5XTakfz17nioyjZsVhzAvc</a>
Subordinating morpheme	<a href="https://drive.google.com/open?id=1UtHvbSXbIHZzFVRzmZ1DL_aUm3WEmV2k">https://drive.google.com/open?id=1UtHvbSXbIHZzFVRzmZ1DL_aUm3WEmV2k</a>
Texts	<a href="https://drive.google.com/open?id=1OLDp4U5snDEMB1XbSvZKiq-YHvivjvaS">https://drive.google.com/open?id=1OLDp4U5snDEMB1XbSvZKiq-YHvivjvaS</a>
VCV nouns	<a href="https://drive.google.com/open?id=1muj7g8mvBq33Fyq5c2-4XkEdiNPXs8xB">https://drive.google.com/open?id=1muj7g8mvBq33Fyq5c2-4XkEdiNPXs8xB</a>
Verb plus pronoun	<a href="https://drive.google.com/open?id=1090PyvMeXZNBsfykGk9ZBVeKCRzPYviS">https://drive.google.com/open?id=1090PyvMeXZNBsfykGk9ZBVeKCRzPYviS</a>
Verb reduplication	<a href="https://drive.google.com/open?id=1nS9RAGSEm8Ql-dUGbNBI76jdtHvdSSpP">https://drive.google.com/open?id=1nS9RAGSEm8Ql-dUGbNBI76jdtHvdSSpP</a>
Verbs	<a href="https://drive.google.com/open?id=1Lsu0ipaXPX8yb7DGoF7dH57S73NoSpBQ">https://drive.google.com/open?id=1Lsu0ipaXPX8yb7DGoF7dH57S73NoSpBQ</a>
Ynquestions	<a href="https://drive.google.com/open?id=1H-RKnk0ba-77_6D-INfIEaGvfotjFlvZ">https://drive.google.com/open?id=1H-RKnk0ba-77_6D-INfIEaGvfotjFlvZ</a>
Abbreviations, speaker bio, permissions, date and time	<a href="https://drive.google.com/open?id=1zljxMrVa5XhY8okiStHsdgXUDxdEojqY">https://drive.google.com/open?id=1zljxMrVa5XhY8okiStHsdgXUDxdEojqY</a>

Below are the locations of the audio files which support the findings described in chapter 7, which deals specifically with phonetic implementation.

<b>Zippered file related to:</b>	<b>URL</b>
Downstep	<a href="https://drive.google.com/open?id=1Il_jzULj4t1gujRGxtT7OkrFc_0vazFB">https://drive.google.com/open?id=1Il_jzULj4t1gujRGxtT7OkrFc_0vazFB</a>
Non-Hs between Hs	<a href="https://drive.google.com/open?id=19443iToWLYBuUgbbhr1ES5qDcQaNzoKfr">https://drive.google.com/open?id=19443iToWLYBuUgbbhr1ES5qDcQaNzoKfr</a>
One tone	<a href="https://drive.google.com/open?id=1NNs-KZnIpen4ix5OjRECeKNRVPjq2B2o">https://drive.google.com/open?id=1NNs-KZnIpen4ix5OjRECeKNRVPjq2B2o</a>
VCV nouns	<a href="https://drive.google.com/open?id=1lqDmGsM9RRJsl-0SlqwhGA-twiYXQ8-8">https://drive.google.com/open?id=1lqDmGsM9RRJsl-0SlqwhGA-twiYXQ8-8</a>
Permissions	<a href="https://drive.google.com/open?id=1qUAS_IejRtIPoR3zCNY2qNVwb9ch8Ddq">https://drive.google.com/open?id=1qUAS_IejRtIPoR3zCNY2qNVwb9ch8Ddq</a>

