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by

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LEXICOSTATISTICAL STUDY OF THE LANGUAGES OF CHOISEUL ISLAND, BRITISH SOLOMON ISLANDS¹

A. CAPELL

1. INTRODUCTION

The island of Choiseul forms one of the western sections of the British Solomon Islands Protectorate. Its area is 1000 square miles. Most of these are located more or less peripherally; the island is rugged and mountainous. The map will locate both the island and the dialect groups within it, as well as the neighbouring groups of the New Georgia languages, and the Mono languages of the Shortland Islands. The Choiseul languages have been chosen for this study for a number of reasons:

(1) they present an obviously related group spoken within clearly defined boundaries;

(2) they are marked off from the other groups in the British Solomon Islands Protectorate by definite lexical and morphological traits, which serve at once to relate them among themselves and to set them off from others. It is noticeable that the Melanesian languages - to which those of Choiseul belong - frequently seem to group themselves in terms of dialects related within one island or group of islands close to each other, so that a geographical sub-grouping is often the logical one on which larger groupings can be built. At the same time there is some evidence, suggested by casual survey, but as yet untested statistically that the Kia and other languages of western Ysabel may also be related to the Choiseul languages, and for this reason Kia is given in the vocabularies that follow.

2. WORD LISTS

The word lists that follow present the evidence on which the conclusions are based. A hundred-word list has been

used, which follows as closely as possible the list standardised by Swadesh, but departing from it in a few words which have been substituted for others that are either unsuitable in themselves or unavailable.

The languages used are also classed as Melanesian, except *Kazúkuru*, which is a non-Melanesian language spoken originally within the area of New Georgia now occupied by Hoava. It is no longer in active use but not yet forgotten, and it is hoped that further information will later be forthcoming as to its structure.² The remaining vocabularies are based on lists compiled by students at the Methodist Goldie College, Banga Island, New Georgia, except for Kia, which was gathered by the present writer.

The only points of spelling that need to be referred to are:

(1) the plosives *b* and *ɖ* are always prenasalised, except in Kia;

(2) *g* is a velar fricative /*ɣ*/ while

(3) stress is very frequently ante-penultimate. Any stress that would cause difficulty in interpretation will be marked by an acute accent as in some of the language names above.

In order that the full evidence on which the conclusions are based may be available, the vocabularies have been given in full. Last in the series is given the original Austro-nesian; the spelling of those words is usually that adopted by Dyen, except that a dot is placed under a retroflex consonant as was done by Dempwolff in his original work. In a few cases it will be noticed that no AN root is given: this means that none has been established for the meanings in question.

SECTION I: DIALECTS OF CHOISEUL

<i>English</i>	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Stems</i>
1. all	duŋae	topuna	saporo	duŋa	döŋa(e)	doŋa	3
2. ashes	kau valaka	lođu kakasa	ŋgula	lujuʔo noho	kau	ruma	4
3. bad	roka	sakata	sa:ta	saʔata	(sa)roka	sökatönana	2
4. bark (n)	köpa gazu	kopotona möki	kapoto	kapata	köpae	küpo	1
5. belly	ma:na	sopona	kuba	sope-	sea-	mamana	4
6. big	pöu	lavata	lavata	laʔabue	püu	tevana	3
7. bird	roroko riri	paleba kauku	pale bavö- bavökö	rorozo	roroko	roroko	2
8. bite	lobe	ka:bale	kabale	kabala	lube	lube	2
9. black	ŋgiso	poŋo	poŋo	kueje	poto	pöto	4
10. blood	madaka	pa:rasa	madaka	madaka	madaka	madaka	2
11. bone	puda	uri	vörö	puda	puda	pöda	2
12. breasts	susu	susu	susu	susu	sosu	susu	1 *AN
13. burn	katu	kamu	voŋgala	kiua	sebe	söbe	5
14. cloud	toba	toba	tatoŋo	toaba	toba	kukubaŋü	3
15. cold	lulumu	lolomu	loeloe	lulumu	lulumu	lulumu	1 NAN
16. come	me	(lá)ma	(lá)ma	me	me	möe	1 *AN
17. die	le	le	li	li	le	le	1 NAN
18. dog	vasi	sika	sökke	be:ki	seki	siki	3
19. drink	gaki bi	ge besi	sua beoü	ziki bio	üke bi	üke bi	2
20. dry	kava	kadala	kođala	kava	kava	kaoko	3
21. ear	talaŋa	ŋgeŋgele	talana	ŋgeŋgele	talaŋa	talaŋa	2
22. earth	lua	pua	ruka	piaha	lua	lua	3
23. eat	gaki	ŋaŋa	ŋaŋa	ziki	üke	üki	2
24. egg	niŋga	niŋga	lunga	niŋga	nöŋga	nöŋga	2
25. eye	mata	mata	mata	mata	mata	mata	1 *AN

<i>English</i>	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Stems</i>
26. fat (n)	vua	bima	sülumana	solo	voa	masa	4
27. feather	sava	sava	sava	vuvuju	sava	sava	2
28. fire	nako kabu	nako	nako	noho	nako	nako kamu	1
29. fish	kuata	iřana	iřana	piata	koete	koete	3
30. flesh	zio	manu	vözigo	tazisara	zio	vio	3
31. fly (vb)	kiri	bauuku	bavökö	riri	reri	riri	3
32. foot	tetepara zikini	pepetara make	pipilara pařgava	titiapara nikini	tetepara nikini	tetepara nikini	4
33. fruit	bölia	ure-na	vöre-na	vure-na	vere-a	ore-na	1
34. give	make	teke	nařgo	tini,pate	köna	kima	5
35. good	nöe	velaka	vilaka	titijoa	sanüi	dikana	5
36. green	tutu	toto	katakata	tutu	tutu	tutu	2
37. hair	vurařa	uřguru-na	ula	vuru-ře	vörařa	önama	3
38. hand	tetepara körisi	pepetara karisi	pipilara luma	kürisi	tetepara kürisi	kürisi	2
39. head	böti	kuzuku	řgořgo	kujuku	pütu	bütu	3
40. hear	vanata	ga:ta	vavařořoro	gata	ase	ate	3
41. heart	puřu	pu:řu	pöřö	puřu	pořo	pöřo	1 NAN
42. I	ra	era	ara	ra	aro	aro	1
43. kill	vuivale	vae:vale	vaeködoa	vivele	vüivale	vüevale	2
44. knee	pupuku zi- kini	tutuřu make	cöřecöř pařgana	pupuku nikini	pöpuku nikini	pupuku nikini	2
45. know	vutini	rove	rovea	vesne	utini	utini	2
46. leaf	vurařa gazu	vekoveko	vařa	vurune ve	vörařa azu	önama azu	3
47. lie down	bikolo	kekele	lořgo	kekele	kele	kole	3
48. liver	mömöni	totone	manava	tutene	kola	mümüni	3
49. long	řava	loda	zaka	řo	řava	řava	3
50. louse	vutu	utu	gücü	vüc	votu	utu	1 *AN

	<i>English</i>	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Stems</i>
51.	male, man	leke	vale:ke	tamanü	sualeike	leke	leke	2
52.	many	taba	töpu	tomo	taba	taba		2
53.	moon	vokene	inaŋga	kuka	ziniŋgo	ökene	okene	3
54.	mountain	supu	kúbolo	tagara	kúbolo	supupüu	aupu	3
55.	mouth	jopa	sange	güjü	jope	jupa	zopa	3
56.	name	ziteŋe, ta- razitoŋo	vitovitoŋo	zaŋa	ziteŋe	tariotŋo	itoŋo	2
57.	neck	kukunu	kokoli	korikori	kukunu	kokunu	kukunu	1 NAN
58.	new	vuruŋga	voru	vürü	varuŋga	varuŋga	vürüŋga	1
59.	night	kuse	kuse	bono	kuse	kose	kose	2
60.	nose	ziŋo	iŋoro	eŋö	ŋiŋiri	zeŋo	iŋo	1 NAN
61.	not	kama	iki	onoko	kesi	köma	kama	4
62.	one	köke	kala	kala	kiki	keke	küki	2
63.	path	zuka	zu:ka	söka	zikanü	zoka	zoka	1 NAN
64.	person	bose	basöe	bosoe	soes	büsi	böse	1 NAN
65.	rain	miŋga	nare	nare	miŋguru	maŋga	möŋga	2
66.	red	mesara	mesara	maŋgale	measara	mesiri	misara	2
67.	root	löŋgötö	labisi	labüoü	röuo	lüŋgoto	lüŋgoto	2
68.	rope	sun	tali	talü	suini	sun	sun	2
69.	sand	karakone	kara koni	kara konü	karakuini	karakone	reavana	2
70.	say	pijo	sine	zana	cini	söna	nomeke	4
71.	see	dodoro	mia	meŋa	duduru	mia	mia	3
72.	seed	pöti	paturu	pacü	puc	pütu	pütu	1
73.	sit	tuŋunu	kolo:ku	töŋöcö	cuŋunu	toŋunu	suki	3
74.	skin	köpa	kapoto	kapoto	kapata	küpo	küpo	1
75.	sleep	pamu	ka:muku	kamoko	kamisa	pamu	pamu	2

	<i>English</i>	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Stems</i>
76.	small	vasiki	suka	kúküsü	porodoŋo	soi	siünade	5
77.	smoke	kanu	kau:ku	püga	konoko	kanu	tua	3
78.	stand	dire	degere	degere	dere	dere	dere	1 NAN
79.	star	sisiriputu	domiri	dúvüsü	sisiriputu	sisiriputu	sisiriputu	3
80.	stone	kokojo	ipaka	ipaka	kokojo	kokojo	kokojo	2
81.	sun	kiku	saŋa	saŋa	dio	ŋada	ŋada	4
82.	swim	ŋgavelo	ba:ru	seŋge	borö	ŋgávelo	aroŋa	4
83.	tail	piputu	kupule	küŋgele	kupele	peputu	kobete	3
84.	that	töni	nae	iatinae	tene	ta	tana	2
85.	this	iati	de	(ia)tene	zete	göti	ie, ite	3
86.	thou	re	aro	ago	gere	re	re	1 *AN
87.	tongue	lome	kalami-na	kalamea	lueleme	luleme	luleme	1 NAN
88.	tooth	kekere	posoŋge-na	pacö	kekere	sobe	kekere	3
89.	tree	gazu	moki	mó:kesö	ve	azu	azu	3
90.	two	kere	rua	ka-rua	kiki	keri	keri	3
91.	walk	zozo	vakavakile	ŋgalo	zo	zo	zo	3
92.	warm, hot	vila	ila	vüraka	zilo	völa	mazaka	3
93.	water	loka	be:si	becü	bic	bi	bi	2
94.	we (incl.)	zita	ita	ita	zita	ita	ita	1 *AN
95.	we (excl.)	rami	remu	ore	keme	rami	rami	1 *AN
96.	what?	ava	ava	ava	ava	öda	ava	2
97.	white	sele	kakasa	kakasa	sele	sele	sele	2
98.	who?	adi	akena	ina	ade	öda	ada	3
99.	woman	ŋgole	ŋgole	oto sapata	ŋgwele laba	ŋgule	böse ŋgole	2
100.	yellow	duru	noba	maŋgele	duru	duru	duru	3

SECTION II: MONO, NEW GEORGIA AND KIA

<i>English</i>	<i>Mono</i>	<i>Hoava</i>	<i>Vangunu</i>	<i>Bareke</i>	<i>Duke</i>	<i>Kazukuru</i>
1. all	osoŋ	doluru	to:ŋanani	toŋaniŋa	doguru	
2. ashes	oahu	eba	eba	rada	oro	ibe
3. bad	paitena	kaleana	siana	siena	hikerena	kalenou
4. bark (n)	ulili	kaha	kakaputu hai	kaputu	turupe gaye	
5. belly	tia	tia	tia	tia	hiyapö	lea
6. big	kanegara	lavatina	lavatana	haina	latana	monanona
7. bird	maraka	nahoko	maunu	makaku	ropet' aka	kinounoru renu
8. bite	?a?ati	gusia	uzu	uzu	rikipo	biratia
9. black	sivisivi	hupa	sinoko	sinoko	ŋgila	himo
10. blood	masini	mazuka	cuka	juka	orunŋu	rinati
11. bone	suma	susuri	zuzuri	zuzuri	humuna	sinori
12. breast	lulu	nunu	susu	susu	susu	suno
13. burn	ave	to	zuku	to	toa	pitapona
14. cloud	tuvetuve	opunŋu	sokoro	sokoro	tobu	hinu
15. cold	moamoa	ibu	manobu	manobu	ibulu	simu
16. come	ena	mae	mai	mai	mayi	emo
17. die	mate	mate	legu	leau	mate	minata
18. dog	auwau	siki	isi	sie	siki	pilipuo
19. drink	oa	napo	bei	bei	beyia	nipo
20. dry	regerege	hala	hala	hala	pidili	
21. ear	taŋna	kukele	taliŋi	taliŋi	taliŋi	ŋinoya
22. earth	pirani	pepeha	kakapisa	pepesa	melaka	vuvunŋo
23. eat	aŋ	ŋaniŋani	raraca	ŋaŋau	ŋanagaya	gitagita
24. egg	erana	vovoto	vovoto	vovoto	vovoto	linoŋo
25. eye	mata	mata	mata	mata	mata	meta

<i>English</i>	<i>Mono</i>	<i>Hoava</i>	<i>Vangunu</i>	<i>Bareke</i>	<i>Duke</i>	<i>Kazukuru</i>
26. fat (n)	hatutu	poga	dea-	dea-	zaŋayi	
27. feather	regese	kalu-	seku-	kalu-	vuvuru	ŋgimutu
28. fire	heli	puga	ikusu	ikusu	ikuhu	hikani
29. fish	iʔana	igana	ihana	igana	igana	mesai
30. flesh	mosu	pasepaso	borabora	borabora	pupusi	sinimai
31. fly (vb)	loho	tapuru	sarava	sarava	aka	ripoti
32. foot	toto	malego	sasape nei	nei	nene	neuno
33. fruit	hua-	vua-	ure-	ure-	noaya-	vutavuta
34. give	tele	valea	poere	sia	naneya	munoa
35. good	rekona	koleo	leana	leana	leana	linea
36. green	malamalae	buma	buma	buma	buma	
37. hair	toʔo	kalu-	seku-	kalu-	vuvuru	ŋginutu
38. hand	ime	reŋgu-	lima-	lima-	hehe	vonili
39. head	patu	batu-	batu-	batu-	batu-	rano
40. hear	nono	umumana	lemono	lemono	lemono	inogo
41. heart	nitu-	bulo	bulo	bulo	bulo	
42. I	(ma)ha	rao	(e)ra	ra	rayi	rauno
43. kill	hamate	vamate	valegi	valeau	vamateya	rinomu tamuta
44. knee	tu:	tumiri malego	tuŋutuŋu nei	tuŋutuŋu nei	tutuŋu ne-	
45. know	ataeŋ	gilalia	uvuzae	uvazakai	gigileya	rimoti
46. leaf	loe	sasaeri	roroko	zazairi	susura	piloi
47. lie down	eo	eko	eko	eko	kole	
48. liver	ate	kola	kola	kola	kola	tobe
49. long	rearapa	gele	hele	hele	godoro	
50. louse	ʔutu	gutu	hutu	hutu	gutu	

<i>English</i>	<i>Mono</i>	<i>Hoava</i>	<i>Vangunu</i>	<i>Bareke</i>	<i>Duke</i>	<i>Kazúkurú</i>
51. male, man	poro haolu	makariva	babaere	babaere	rek' maleya	memoni
52. many	tapaina	soku	zoku	zoku	soku	
53. moon	nanaha	koreke	tarube	paleke	reya	retulu
54. mountain	olo	tongerana	toa	tongere	ingoyana	
55. mouth	uru	ɲuzu	juɲu	ucu	huro	ɲoɲano
56. name	leana	tatase	gilagila	gilagila	isoɲo	zeponi
57. neck	lua	rua	rua	rua	ruya	niɲgou
58. new	haolu	vanguruna	anguruna	hanguruna	koregona	
59. night	voi	rodokiko	boɲi	boɲi	boɲi	muni
60. nose	leu	isu	zui	izu	isu	suɲu
61. not	ati	kipu	kala	dai	dakeyi	
62. one	kala	keke	meka	meka	taseya	nasata
63. path	po'a	soana	guana	guana	ripe	ritani
64. person	tioɲ	nikana	maroani	ikana	tinoni	
65. rain	su'a	rereona	sierane	sierane	soɲe	makuhuni
66. red	masimasini	ziɲara	orava	bula	zimiri	erome
67. root	lamutu	agoro	gaguru	gaguru	rosu	
68. rope	hili	iku	hune	iku	veve	
69. sand	mesala	karikone	keoro	keoro	kar'kone	
70. say	areai	pato	kepoto	sana	ɲoɲovere	zino(u)
71. see	roroi	omea	ome	ome	omomegi	sino
72. seed	nitú	kikolo	patu	keki	kiko	
73. sit	auhotu	tuɲu	rosu	tuolo	totu	hatubuo
74. skin	ulili	kaha	kakaputu	kakaputu	tutupa	
75. sleep	suele	puta	musa	musa	puts	pinou

<i>English</i>	<i>Mono</i>	<i>Hoava</i>	<i>Vangunu</i>	<i>Bareke</i>	<i>Duke</i>	<i>Kazúkurú</i>
76. small	atuai?ina	kisina	kikina	tutuina	hitelena	menilena
77. smoke	tula	vosusu	rovu	rovu	tula	
78. stand	tegese	tiva	tiva	tiva	turu	ruto
79. star	vitovito	kokodala	seru	seru	pipino	
80. stone	?o?olo	magara	calekoro	jalekoro	haratana	pitoni
81. sun	healo	gava	hareko	hareko	sepe	
82. swim	usu	ruasa	tope	pone	ruyasa	
83. tail	auko	bele	siku	siku	pikutu	
84. that	ena?a	sani	zani	ia	sana	
85. this	ea, eaŋ	heni	pia	pi	hoaya	
86. thou	maito	(e)goe	io	(a)ho	goyi	goino
87. tongue	meata	mea-	mea	mea	elebe	lepani
88. tooth	niho	hoŋgi	livo	livo	livo	titio
89. tree	au	ŋgato	ŋgato	ŋgato	gaye	vudono
90. two	elu	ka rua	ka rua	ka rua	kori	runaruna
91. walk	gagana	aso	ene	ene	nibaka	
92. warm, hot	posala	maŋini	reka	luluju	nagovo	ŋinoŋino
93. water	atele	kumu	sule	kavo	kolo	kiloni
94. we (incl.)	maita	zita	ita	hita	gita	ŋgito
95. we (excl.)	ma:mi	gami	ami	hami	gami	gimo
96. what?	ahana	sa	za	na za	sagayi	
97. white	?ana?ana?a	kekoro	heva	heva	keoro	vine
98. who?	ale(?a)	(e)se	zei	(e)ze	segayi	
99. woman	bataha	hininguru	ororeke	ororeke	maŋgota sasau	kazane
100. yellow	temotemoli	veava	meava	meava	meava	

SECTION III: SOUTHERN NEW GEORGIA AND YSABEL, WITH AUSTRONESIAN

<i>English</i>	<i>Roviana</i>	<i>Kusage</i>	<i>Marovo</i>	<i>Kia</i>	<i>*AN</i>
1. all	doduru	doluru	loŋania	haroharo	
2. ashes	eba	eba	eba	kofele	abu, dabuk
3. bad	kaleana	kaleana	aieno	muko	zaqat
4. bark (n)	kapu	kaha	korekore	kafuna	u(m)pak
5. belly	tia	tia	tia	tia	tiyan
6. big	nomana	lavati	ŋgetene	fa	ɣaya, laba
7. bird	kurukuru tapuru		oloko	memeha	manuk
8. bite	garatia	gusia	usua	varigani	kaɣat
9. black	muho	hupa	cinoko	sisibe	qitom
10. blood	ehara	mazuka	juka	busaka	(dd)ayah
11. bone	susuri	susuri	susuri	huma	(t)ulaŋ
12. breast	susu	nunu	navoro	puti	susu
13. burn	toa	to	to	saliŋga	tunu
14. cloud	lei	toba	cakoro	toba	(ɣambuŋ,avan)
15. cold	ibu	ibu	manobu	kapo	diŋin
16. come	pude mae	mae	pata mae	meha	(maɣi), datəŋ
17. die	mate	mate	leŋgu	lami	patay
18. dog	siki	nere	cie	meusu, kuma	asu
19. drink	napo	napo	bei	ketuhu	inu
20. dry	popa	hala	popa	vakaruŋu	kaɣan, mara
21. ear	taliŋa	kukele	taliŋi	taliŋa	taliŋa
22. earth	pepeso	pepeha	puava	kava	tanəh
23. eat	ganigani	`aniŋani	ŋoŋo	mahai	ka(ən), kai
24. egg	vovoto	vovoto	vovoto	kediri	(t)əluɣ
25. eye	mata	mata	mata	hiba	mata

<i>English</i>	<i>Roviana</i>	<i>Kusage</i>	<i>Marovo</i>	<i>Kia</i>	<i>*AN</i>
26. fat (n)	dea	dea	dea	mároho	lémak
27. feather	kalu	kalu	kalu oloko	kalana na memeha	bulu
28. fire	nika	puga	ikusu	totoi	apuy
29. fish	iagana	igana	ihana	namari	ikan
30. flesh	masa	pasopaso	borabora	vilaha	
31. fly (vb)	tapuru	tapuru	carava	sire	lémbay
32. foot	nene	nene	cacape mahele	gahe	kaki
33. fruit	vua	vua	ure	fuana	buwah
34. give	poni	poni	vala(nia)	vani-	bəʔəʔ
35. good	leana	koleo	leana	veha	
36. green	buma	buma	buma	giliona tiana	hizau
37. hair	kalu	kalu	kalu	kala	buhuk
38. hand	lima	rengu	lima	kame	lima
39. head	batu	batu	cavili	pau	qulu
40. hear	avoso	umana	avoso	momohi	dəŋəʔ
41. heart	bulo	korokoŋo	bulo	hihiŋo	zanduŋ
42. I	(a)rau	rao	ra(ka)	ara	sku
43. kill	vamatea	vamatea	valeŋgua	ruzai	pa-matay
44. knee	tuŋutuŋu nene				(tt)uhud
45. know	gilania	gilalia	atenia	avohi	taqu, lala
46. leaf	elelo	sasairi	rokoroko	kamotona	(dɔ) aun
47. lie down	eko	eko	eko	epu	inəp
48. liver	bero	kola	kola	kola	(q?) atay
49. long	gele	gele	hele	sodu	(p)anzaŋ
50. louse	gutu	gutu	hutu	gutu	kutu

<i>English</i>	<i>Roviana</i>	<i>Kusage</i>	<i>Marovo</i>	<i>Kia</i>	<i>*AN</i>
51. male, man	koreo	makariva	babaere	mane	ʔani, ma-ʔani
52. many	soku	soku	soku	tehi	
53. moon	sidara	koreke	paleke	hihile	bulan
54. mountain	tongere	tongerana	tongere	tungele	gunuŋ
55. mouth	ʔuzu	ʔuzu	huju	maŋa	babah
56. name	pozapoza	titasa	kila	babaolo	aran
57. neck	rua	rua	rua	tania	lihiʔ
58. new	vaŋgura	vaŋgura	haŋgurumu	foforuna	baʔeʔu(h)
59. night	boŋi	boŋi	ipu	redu	beŋi
60. nose	isu	isu	isu	nehu	iruŋ
61. not	lopu	kalu	kani	deo	
62. one	keke, ta sa	tasa	maka	kaike(u)	esa
63. path	siraŋa	soana	huana	haŋana	zalan
64. person	tie	nikana	tinoni	tei	tau
65. rain	ruku	ruku	mugata	nare	quzan
66. red	ziŋara	ziŋara	oraua	busaka	iʔah
67. root	dadaga	agogona	dadaha	zagara	(v)akal
68. rope	iku	iku	iku	horo	tali
69. sand	onone	onone	keoro	garaŋa	ənay, pasir
70. say	zama	nake	jama	neke	ucap = talk
71. see	dogoro	omea	omia	finini	kita
72. seed	kiko	kikolo	patu	subuna	bənih, binih
73. sit	habotu	tuŋu	doku	nohe	dukduk
74. skin	kapu	kaha	kore	kafu	kulit
75. sleep	puta	puta	muca	epu ('lie')	tiduʔ

<i>English</i>	<i>Roviana</i>	<i>Kusage</i>	<i>Marovo</i>	<i>Kia</i>	<i>*AN</i>
76. small	hitekena	kikika	kikina	ite	dikit
77. smoke	tunaha	pogele	rovu	piala	gasu(h)
78. stand	туру	тиро	tiva	tetu	diyi
79. star	pinopino	kokodalo	ceru	bakaḡunu	bi(t)uhən
80. stone	patu	zalero	jalekoro	ráhira	batu
81. sun	rimata	gava	ini	taunu	a(n)dau
82. swim	tunuru	tunuru	ponu	sesele	laḡuy
83. tail	pikutu	bele	cikunu	seku	ikuḡ
84. that	isa	sani	ia	iahihi	
85. this	hie	heni	pia	iahi	
86. thou	(a)goi	goe	hoi	ago	kau
87. tongue	mea	mea	mea	lapi	dilaḡ
88. tooth	livo	hoḡgi	livo	hiḡa	ipən
89. tree	huda	ḡgato	hae	heka	kayu
90. two	ka rua	ka ru	ka rua	palu	(dəwha)
91. walk	ene	aso	ene	gagahe	laku
92. warm, hot	maḡini	maḡini	reka	daḡava	panas
93. water	kolo	kuma	idere	kolo	wa(h∅)iy
94. we (incl.)	gita	gita	hita	gita	kita
95. we (excl.)	gami	gami	hami	gai	kami
96. what?	sa	sa	sa	heve	sps
97. white	keoro	kekoro	heva	giho	putih
98. who?	sei	se	sei	hei	sayi
99. woman	vineki	hina	manemaneke	gase	(ba)binay
100. yellow	meava	diko	oha	heko	kumiḡ

3. ANALYSIS OF THE LISTS

Obviously many types of analysis of the above lists are both possible and necessary for a full study of the historical problems presented by these languages. The first is the question of the relationships they have among themselves in terms of lexicostatistics.

(a) *Lexicostatistics*

Preliminary testing of the languages was carried out on the basis of the Swadesh 200-word list as given in Dell Hymes' article "Lexicostatistics So Far" (*Current Anthropology* No.1, January 1960) with the same necessary modifications. This examination yielded the following percentage relationships between the languages of Choiseul themselves, together with Kia:

	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Kia</i>
<i>Babatana</i>	-	31.3	25.5	60.5	74	60.5	17
<i>Varise</i>		-	55.5	54.5	47	44	11
<i>Vagua</i>			-	28	33	41	12
<i>Ririo</i>				-	63	58	9
<i>Sisingga</i>					-	79	15
<i>Kuboro</i>						-	15

The significance of these figures will be discussed below (p.19). With the Mono language of the Shortland Island the relationships are smaller:

	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Kia</i>
<i>Mono</i>	6	12+2?	12+1?	8	12	11	13

The 12 words Mono-Varise are all AN; of the doubtful words one is clearly not AN (*kala*, 'one', shown by both languages), and other pair may or may not be cognate: Mono *aŋ*, Varise *ŋaŋa*, 'eat' (AN **ka(ə)n(i)*). There is apparent cognation between Mono *tégese* and Varise *dégere*, 'stand', which is a common Choiseul NAN root. The Mono-Vagua cognates are almost all the same AN words, together with *kala* 'one' and Mono *bataha*, Vagua (*oto*) *sapata*, 'woman', and the *tegesedegere* pair. The eight correspondences between Mono and Ririo are mostly the same AN words as appear in the preceding languages, but there is Mono *ale*, *ale?a*, Ririo *ade*,

'who' (NAN). The Mono-Sisingga comparison is also 12% but the content of the agreements is considerably different from the previous lists; the words are still almost all AN, but are a different set, including now 'ashes', 'belly', 'ear', 'head' and 'tree' which have not appeared before. At the same time the NAN forms for 'stand' are still present. Much the same remarks apply to the Mono-Kuboro 11 per cent, almost the same series of roots reappearing, with the same differences from the more westerly Choiseul languages.

In New Georgia there is a group of interrelated languages whose relationship to the Choiseul group is shown in the following:

	<i>Babatana</i>	<i>Varise</i>	<i>Vagua</i>	<i>Ririo</i>	<i>Sisingga</i>	<i>Kuboro</i>	<i>Kia</i>
<i>Roviana</i>	11.5	14	15	14.5	13	13	22
<i>Márovo</i>	10	12.5	12.5	10	13	13.5	17
<i>Kusage</i>	11.5	14	11.5	12	11.5	11	18
<i>Hoava</i>	15	18	16	16	19	17	16
<i>Vangunu</i>	18	19	20	15	18	19	14
<i>Bdreke</i>	17	21	23	16	21	19	18
<i>Duke</i>	16	18	16	20	22	21	15

(b) *Non-Austronesian Roots in Choiseul*

Very little examination of substrata in Melanesia has yet been made. Most attention has, not unnaturally, been given to the tracing of AN roots throughout the area, because this seemed likely to yield the most valuable information on the movements of the Austronesian peoples. Some have even minimised the idea of substrata in the region. The present writer, however, showed (Capell, 1943, 168-198) that when the Austronesian content was abstracted from the confusion of languages in south-eastern Papua, there remained definite traces of a few "regional" languages of pre-MN age. He suggested that in some areas the coming of the Austronesians may even have multiplied the linguistic confusion. The same situation, in lesser degree, reveals itself also in Choiseul, where a number of common NAN roots can be found in the various dialects of the island. In the 100-word list used above, there are 17 such common NAN words - nearly 20%. It must be remembered, that although the 100-word list may be truly diagnostic, it is numerically a very small proportion of the vocabulary of any language. Hence a fuller

examination of the vocabularies of the languages would undoubtedly yield a much larger proportion of vocabulary common to all. Furthermore, the question of strata within a vocabulary becomes important in such a situation. There may be agreements on the less common or deep levels. For example: AN *tali, 'rope' (which is represented in Choiseul) becomes usually in Atchin (north-east Malekula) tsali; but there is also tali, a cult term, signifying the rope with which a pig is tied up prior to sacrifice in the Maki rites. This is a deep level agreement, which does not accord with the sound-laws of the language, and such agreements are always likely to occur as more of the vocabularies are examined. The 17 common words then may be far more important than their occurrence in the 100-word list might suggest.

The 17 common NAN roots are:

bark (of tree)	kepa(ta)	path	zuka(nu)
cold	lulumu	person	bose
die	le	rope	sunī
fire	nako	seed	patu(ru)
fruit	vere	skin = bark	
heart	puju	stand	dégere
neck	korikori, kukunu	stone	kokoza
nose	ziŋo(ro)	tongue	lume, kalume
		water	besi

Before further examination of these is made, it will be noticed that some of the words carry a final syllable in some languages which is absent in others. It might be possible to treat this as a syllable originally present but dropped in some languages. In view of the surrounding non-AN languages (Bilua, Bañata, Kazukuru, etc.) and those of Bougainville there is another possibility. In the languages of Bougainville as well as in Bañata, Bilua, Lavukáleve and Savo, there are various systems of noun classification. It seems possible that the "optional" final syllable in the Choiseul words may be an old class-marker. Although no morphological analysis of Kazukuru (New Georgia) has yet been made, similar finals recalling Bañata class markers occur there also. In the Choiseul examples there is recurrence of -ru, -ta and -nu/-nu, as well as -ro. It is possible that these may represent pre-AN noun classifiers,

and so they are best left bracketed as above and not regarded as part of the root.

Do these words occur outside Choiseul? Examination brings out some points of interest. It is highly probable that one of the words is AN: *patu(ru)* 'seed' = AN**batu*, 'stone', but even then there is the suffix, a possible classifier, to take into account. The word would have been an early adoption from the incoming Austronesians - before the original class system of nouns had decayed. It may therefore be left in the list, as an example of "processing" of AN words in Choiseul. The remainder have relatives elsewhere as follows:

bark/skin: *kepa-ta*, represented in Vangunu, Bareke, Hoava, Kusage, Roviana. Root *kapa-ta*.

die: Vangunu, Bareke: Root *legu*.

fire: probably Roviana *nika*.

nose: *Kazukuru suŋu* looks like the root *ziŋo*, but stands isolated. The suffix *-ro* is not explained as yet. Others are AN.

rope: *suni* occurs in Vangunu and probably in Mono *huli*.

stand: *degese* is Mono *tégese*; an AN form *туру* has invaded some of the languages of the area.

stone: *ʔoʔolo* = *kokoŋo*

water: the root *besi*, *bei* occurs in Ysabel, Florida and eastward, and seems to be the only common Choiseul root that does look eastward.

The words for cold, heart, neck, path, person (man) and tongue have no correlatives in the other languages available for examination.

As far as this evidence goes, it would seem that an ancient language common to a large part of Choiseul did exist, and that it had cognates in the vocabularies of the New Georgia languages. The evidence is insufficient to show whether these cognates are genetic or due to contact. There is evidence that all these pre-MN languages had noun-classification, but that is a question which does not belong to the present paper. It will be discussed in another paper on the NAN languages of the area. The question belongs to the field of structure statistics;³ it serves, incidentally,

to draw attention to the limitations of lexicostatistics, which can never give a sure indication of the status of a language because it cannot take into consideration the morphology of that language. The present point of importance is that apart from the AN element the languages not only of Choiseul but also of New Georgia and possibly western Ysabel show a common pre-MN content, and thus there may well have been a language or a set of related languages within the area. Depth study of the vocabularies is needed to establish the truth or falsehood of this suggestion, and that must also wait for a future occasion.

Irrespective of whether a given root is AN or not, the amounts of variation between the different Choiseul dialects are worth comparing. In passing it may be mentioned that the very use of the term "dialect" rather than "language" again presupposes structure statistical examination. The following table shows the number of roots found within the six dialects listed for each word. To illustrate the process involved, when it is stated that four words on the 100-word list show five different stems, it is meant that out of the six languages given for Choiseul, only two have cognate forms for that particular word: 'burn', Sisingga sebe and Kuboro sōbe agree, but the other four languages have different words not related to that root or to each other: Babatana katu, Varise kamu, Vagua vaṅgala, Ririo kiua. Similarly, other words show 4, 3, or 2 stems and others only 1 stem among the six dialects. There are 22 single stems, 32 with 2 stems, 32 with 3 stems, 9 with 4 stems, and 4 with 5 stems. This means that absolute agreement between the six dialects is limited to 22% of the 100 words examined. Of these 15 are NAN, with 7 AN loanwords. The NAN words have been listed above and their cognates elsewhere considered. The assignments of the actual words (in their English forms) are as follows:

(see table overleaf)

<i>Single Stems</i> (22)	<i>2 Stems</i> (32)	<i>3 Stems</i> (32)	<i>4 Stems</i> (9)	<i>5 Stems</i> (4)
bark	bad	all	ashes	burn
breasts (AN)	bird	big	belly	give
cold	bite	cloud	black	good
come (AN)	blood	dog	fat	small
die	bare	dry	foot	
eye (AN)	drink	earth	not	
fire	car	fish	say	
fruit	eat	flesh	sun	
heart	egg	fly	swim	
I (AN)	feather	hair		
louse (AN)	green	bread		
neck	hand	hear		
nose	kill	leaf		
path	knee	lie		
person	know	liver		
seed	male	long		
skin	many	moon		
stand	name	mountain		
thou (AN)	night	mouth		
tongue (AN)	one	see		
we	rain	sit		
	red	smoke		
	root	star		
	rope	tail		
	sand	this		
	sleep	took		
	stone	tree		
	that	two		
	water	walk		
	what	warm		
	woman	who		
	white	yellow		

Within these strata there appear some unusual and unexpected sound changes as between the various languages. In some instances they seem to have affected AN roots also, e.g. 'louse': *AN kutu; Vagua gücü (=γücü), but Ririo vüç, Babatana vutu, Sisingga votu, leading to loss of k in *Varıse*, *Kuğrg utu*. The change is k- > γ- > v- and sometimes z- appears in the series: 'we (incl.)', *AN kita >

ita in Varise, Vagua, Sisingga, Kuboro, but zita in Babatana, Ririo.

If this series is acceptable then Ririo *ve*, 'tree' may belong to AN *kayu*, along with Babatana *γazu*, Sisingga, Kuboro *azu*. The Babatana reflexes of *k-* seem rather irregular. In the pronouns there is an initial *r-* where it would not be expected in the Roviana *rau*, *arau*, 'I', Babatana, Sisingga, Kuboro *rami*, 'we (excl.)', Varise *remu*, as against Ririo *keme* > AN *kami*. There is probably a morphological cause at work here as well as a phonetic cause, but the further investigation of sound change is still needed.

(c) *The AN Content of the Region*

Consideration may now be given to the AN content of the languages. This is for certain reasons not easy to determine with complete accuracy. In the following figures a few doubtful cognates have been omitted, but their inclusion would not greatly alter the picture. The figures show the following percentages of AN vocabulary in the 100-word lists:

<i>Choiseul Group</i>		<i>New Georgia Group</i>	
Bambatana	15	Roviana	33
Varise	15	Marovo	23
Vagua	22	Kusage	26
Ririo	13	Hoava	24
Sisingga	15	Vangunu	25
Kuboro	13	Bareke	24
		Duke	22

Each of these two columns clearly forms a group. *Kia* with 15% seems to link with the Choiseul group. *Mono*, on the other hand, has 31%, but its tradition is quite different from either. Its phonetics are different, and the roots themselves are often different. The following are worth noting by way of contrast with Choiseul. Certain of them find echoes in the New Georgia Group:

bite: *Mono* *ʔaʔati* is AN **kayat*, which does not appear in any other list.

fly: *Mono* *loho*, AN **ləmbay*, is not found elsewhere.

fruit: *Mono* *hua*, AN **buwah*, occurs in *Hoava*, *Kusage* and *Roviana* *hua*, but not in Choiseul, which has a local

NAN root. This root, *vure*, occurs in the New Georgia group in Bareke.

kill: Mono *ha-mate* 'cause die': AN **pa* + *matay*. The prefix **pa-* occurs in various forms in the Choiseul Group but the stem **patay* does not. It is found in New Georgia Group in Roviana, Kusage, Hoava, Duke.

know: Mono *ataeŋ*. This is a verbalisation of the AN **atay* 'liver', treated as the seat of intelligence. It occurs in Marovo *ate-nia*, but not elsewhere. The other root found in New Georgia is AN **kila* 'sign', found in Roviana, Kusage, Hoava and Duke, and not uncommonly eastward as far as Fiji. In the context it is present also as Vangunu and Bareke *gilagila* 'name', Marovo *kila-*. This latter development is purely local.

root: Mono *lamutu* is apparently AN *(*l*)*a*(*m*)*but*, 'be hairy', and is quite unique here.

These facts by themselves make it perfectly certain that the AN element in Mono represents a totally different tradition from that represented in Choiseul. The links with New Georgia are to be regarded as later diffusions from the Bougainville Straits, because phonetically they agree with Mono.

Something more must be said about the phonetic form of the AN element in the Choiseul and New Georgia regions, apart from the words which agree with Mono. In general it is true that AN final consonants are lost in Melanesia. In the central and eastern Solomons this is definitely a fact. In New Georgia such final consonants are very frequently retained. Since in these languages the syllable patterns allowable are V or CV, the CVC type of syllable in AN is not permissible. The difficulty is solved normally in Melanesia by CVC > CV; in New Georgia the pattern is usually CVC > CVCV. A vowel is added which usually harmonises with the vowel preceding the original final consonant. Thus in Roviana:

AN * <i>ma</i> + <i>takut</i>	<i>matagutu</i> 'to fear'
* <i>ənəm</i>	<i>ónomo</i> 'six'
* <i>ikan</i>	<i>igana</i> 'fish'
* <i>bəy-</i> (prefix)	<i>vari-</i> (prefix)
* <i>ma</i> + <i>nipis</i>	<i>manivisi</i> 'thin'
* <i>baŋun</i>	<i>vaŋuni</i> 'awaken'

It should be added that this supporting a final AN consonant does not always take place; some are lost. Probably two AN strata are to be seen here, that in which final consonants were still present when the Austronesians reached the area (or they could not have been supported) is to be presumed as the earlier. In the eastern Solomons this supporting *never* occurs, and the presumption is that the final consonants of the AN stems were already lost when the words reached Florida and points farther east. The above brief list in Florida and Malaita languages appears in the following form:

	<i>Gela</i>	<i>Kwar'ae</i>	<i>Lau</i>	<i>Sa'a</i>
fear	matayu	ma?u	mou	me'u
six	ono	ono	ono	ono
fish	iya	i?a	i?a	i?e
reciprocity	vei-	kwai-		hei-
thin		kando		
awaken		fa?aanda		

In Florida (*Gela*), not only are the two roots for 'thin' and 'awaken' different, but that for 'fear' takes -ni as its transitive suffix: mata-yu-ni, 'fear someone', showing that by the time the word had reached this area its original final consonant had been so far forgotten that a new one could be brought in; otherwise the t would presumably have been thematically restored. The same holds good in Malaita, where *Sa'a* has as its transitive form me?ute?i-.

Thus the Choiseul (and New Georgia) languages show an AN content of a different type from that found farther east. This stratum knows the AN final consonant and therefore on anything other than that of C.E. Fox, would be earlier than the stratum or strata represented in the eastern Solomon Islands. Fox has contended that AN actually began in the Solomon Islands and spread east and west. Phonetic facts of the sort just adduced are quite incompatible with such a theory. It is, for instance, not possible to accept his suggestion that in final consonants, accepted by Dempwolff as elements in a CVCVC-type root, are accretions, unless it is to be said that they developed in the Western Solomons. Further examination would be needed to establish the actual occurrences of the various AN roots in different parts of Oceania. This type of work is being carried out in great

detail by Dyen at Yale, but it is, of course, quite impossible to include it in anything less than a book, and that a fair-sized volume.

This lexicostatistic study of Choiseul, so far as it has gone, shows a clearly defined area with its own peculiarities. It is an area that apparently possessed a fairly uniform NAN language at one time, marked with a characteristic phonetic structure, and a characteristic morphology also would come to light if the study were continued into the field of structure statistics. The phonetic structure is not unlike that of the NAN languages still found in British Solomon Islands Protectorate - Bilua, and Bañata especially, and may point to an underlying unity of language now lost beyond recovery. The lexicostatistic study shows an AN element which is often the same as that found farther east in the Solomon Islands, but preserved in a phonetically much more archaic form, and therefore probably earlier. Choiseul and New Georgia (together with western Ysabel, if the material had been included) were moulded by this earlier type of AN; Mono and the Bougainville Straits show another different AN contact both in content and in the phonetic forms. It would be necessary to extend the study to the MN languages of Bougainville to make the real extent of this archaic stratum clear. At the same time, this contact was not so deep or extensive as the later one which has produced the languages of the Eastern Solomons, where a much higher AN content is to be found. At least something of a seemingly complex history comes to light in this brief survey, which now requires extending to much wider stretches of vocabulary and to the whole grammatical structure of these languages.



NOTES

1. Paper read at the Canberra 1964 Meeting of the Australian and New Zealand Association for the Advancement of Science (ANZAAS).
2. The only material available at present is found in an article published by J.H.L. Waterhouse in *Man* vol.XXXI (1931), No.133, with notes by S.H. Ray.
3. A. Capell, "The techniques of structure statistics", *Oceania*, 33:1-11.

SOUTHEAST AMBRYM VERB INFLECTION AND MORPHOPHONEMICS¹

G. J. PARKER

0. Introduction
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 - 2.3. Non-Systematic Irregularities.

0. INTRODUCTION

Southeast Ambrym is a Melanesian language of the northern New Hebrides spoken by approximately 1500 persons. Most of these speakers reside on Ambrym, in the villages of edu-pəhakul, edupoal, aseï, samueo, pæmmel, ulei, tox, penapo, mat, utas, sahuot, barias, pehosanət, sai, Bethel, moru, taviax (Taviak), and baue.² Another approximately 180 speakers have resided since 1951 in the village of mat (Maat), Efate, six miles northwest of Vila. The principal informants during the period of field work underlying this study were Mr Percy David of the British Police, Vila, and Miss Lehi Lucy of the Presbyterian Mission Hospital, Iri-riki. Both are originally from mat, Ambrym.

Southeast Ambrym has never been studied previously beyond the collection of short vocabulary lists and verb paradigms. Its closest relative is Paama, and it is this language that was used by missionaries on southeastern Ambrym. The language of northern Ambrym, described in an unpublished study by Paton,³ appears to be very distinct, and according

to Capell is more closely related to the languages of Pentecost.⁴ No data are available for the dialect(s) of southwestern Ambrym.

1. INFLECTION

The major syntactically defined verb classes are *transitive*, *intransitive*,⁵ and *equational*. Various subclasses of these are defined below on the basis of restrictions on co-occurrence with affixes and of morphologically determined stem and affix alternations. The *regular verb* stem is one which shows no morphophonemic alternations. With very few exceptions the verb stem is a free form, with the basic allomorph occurring as second person singular imperative and, for certain stem classes, as third person singular Aorist, e.g. *pat*⁶ 'to sleep'; *pat* 'sleep!', *pat* 'he sleeps'.

The analysis presented below must be considered tentative in some respects since it is based on a relatively small corpus. The stems described are drawn from a total lexicon of approximately 750 items.

1.1. Inflectional Categories

Five position classes of prefixes and two of suffixes are described in this section. Although the suffixes occur only as phrase-level constituents, the sets of allomorphs in one class (60) define subclasses of transitive stems. The affix position classes are summarised in Table 1.

1.11. Class 10 Movement includes a single member 11 *ha-* which indicates that the action is realised in some place other than where it is spoken of, or that some distance must be covered prior to the realisation of the action. This prefix occurs optionally, and immediately precedes a prefix of Class 20 (or, in the case of unmarked third person singular, a prefix of Class 40 or 50, or the stem), e.g. *hamupat* 'you (pl.) go sleep', *halatipat* 'they (3 or 4) will go sleep'. *ha-* is identified with the stem *ha Vint* 'to go'.

1.12. Class 20 Actor Reference includes the prefixes: 21 *na-* first person singular, 22 *O-* second person singular, 23 *mi-* third person singular, 24 *rA-* first person non-

singular inclusive, 25 **mA-** first person non-singular exclusive, 26 **mu-** second person non-singular, and 27 **lA-** third person non-singular. These prefixes are mutually exclusive and obligatory. 23 **mi-**, however, occurs only with certain stems and only immediately preceding the stem ± 51 **AORIST**. Three stem classes are defined by the (non-)occurrence of **mi-**: those which always carry **mi-**, those which never carry **mi-**, and those which optionally carry **mi-**. The first two of these classes are of roughly equal size; the third has very few members. These class memberships are not separately listed in this paper, but stems of the class which always carries **mi-** are marked with an asterisk in the listings for other classes (in 1.25., 2.1., 2.2.). Examples of Class 20 prefixes and unmarked third person singular (**P3** sg.) are: **napat** 'I sleep'; **opat** 'you sleep'; **pat** 'he (she, it) sleeps', **misa** 'he is bad', **gil** or **migil** 'he digs'; **rapat** 'we (pl. incl.) sleep'; **mapat** 'we (pl. excl.) sleep'; **mupat** 'you (pl.) sleep'; **lapat** 'they (pl.) sleep'.

1.13. Class 30 Number includes two prefixes 31 **LU-** Dual and 32 **TEL-** Paucal (three or four) which occur only with an immediately preceding non-singular prefix of Class 20. The absence of a Class 30 prefix implies plural (five or more; exemplified in 1.12.), e.g. **rupat** 'we (2, incl.) sleep', **malopat** 'we (2, excl.) are about to sleep'; **mutapat** 'you (3, 4) sleep', **latipat** 'they (3, 4) will sleep'.

1.14. Class 40 Aspect/Tense includes three prefixes 41 **O-** Potential, 42 **tE-** Past, and 43 **I-** Future. 41 **O-** occurs only immediately following a prefix of Class 30 and preceding a stem ± 51 **AORIST**, e.g. **ralopat** 'we (2, incl.) are about to sleep', **mutopat** 'you (3, 4) are about to sleep'. 42 **tE-** and 43 **I-** precede only the negative prefixes 55 and 56, e.g. **natepat** 'I slept', **tepat** 'he slept', **lutepat** 'they (2) slept'; **nipat** 'I'll sleep', **ipat** 'he'll sleep', **ripat** 'we (pl. incl.) will sleep'.

1.15. Class 50 Aorist/Subjunctive/Negative

1.15.1. The (non-)occurrence of 51 **AORIST** defines two stem classes, and the class of stems (all irregular) inflectable for Aorist is in turn divided into three subclasses defined by the allomorphs of 51. The members of these classes are listed in 2.1., e.g. **nabas** 'I hit', **bas** 'he hits', **mubas** 'you (pl.) hit'; **migur** 'he holds'; **del** 'he accompanies'.

1.15.2. All verbs distinguish Subjunctive from Aorist in

P3 sg. by the occurrence of 52 *va-*, e.g. *xi bit vapat* 'he wants to sleep'; *xi misaxaras vahasi* 'he is unable to hit him'. A small class of irregular stems, included within the class inflectable for Aorist, also distinguishes Subjunctive in **P1** sg. with 53 *m-* and in **P2** sg. and all plural persons with 54 *V-*, e.g. *nabit namasi* 'I want to hit him'; *obit ovasi* 'you want to hit him', *rabit ravasi* 'we (pl. incl.) him', *labit lavasi* 'they (pl.) want to hit him'.

Subjunctive forms have been observed only in embedded clauses which function as objects of the verbs *boVOŋ* 'to forget', *hit* 'to want to', *ha* 'to go', *kil* 'to know (how to)', *saxaras* 'to be unable to', and *saxpis* 'to try'.

1.15.3. 55 *naa-* follows the tense prefixes 42 *tE-* and 43 *I-*; 56 *taa-* follows the person and number prefixes of Classes 20 and 30. *naa-* and *taa-* contrast in **P2** sg. and **P3** sg., where 43 *I-* shows a zero allomorph, e.g. *nataapatti* 'I don't sleep', *taapatti* 'he doesn't sleep'; *ninaapatti* 'I won't sleep', *naapatti* 'he won't sleep', *natnaapatti* 'I didn't sleep', *tenaapatti* 'he didn't sleep'.

1.16. Class 60 Object Reference includes three suffixes 61 *-nou* Pl. sg., 62 *-Vx* **P2** sg., and 63 *-NI* **P3** sg., which occur with transitive stems as alternatives to object phrases, e.g. *obasnou* 'you hit me'; *nabasux* 'I hit you'; *basi* 'he hits him' (cf. *bas moletin ax* 'he hits this man'). The members of four transitive subclasses defined by the allomorphs of 62 *-Vx* and 63 *-NI* are listed in **1.25**.

1.17. Class 70 Negation includes one suffix 71 *-ti* which occurs as the final morpheme of a phrase whose verb is inflected with 55 *naa-* or 56 *taa-*. Examples are seen in **1.15.3**.

1.2. Affix Alternations

1.21. 21 *nA-* → *n-* before 43 *I-*; elsewhere → *na-* alternating freely with *næ-*, e.g. *nipat* 'I'll sleep'; *napat*, *næpat* 'I sleep'.

22 *O-* + 43 *I-* → *u-*, except before 55 *naa-*, elsewhere *O-* → *o-*, e.g. *upat* 'you'll sleep'; *opat* 'you sleep'.

24 *rA-* → *r-* before 31 *LU-* (when this in turn is followed by 42 *tE-*, 51 **AORIST**, 56 *taa-*, or the stem) or 43 *I-*; elsewhere → *ra-* alternating freely with *ræ-*, e.g. *rupat* 'we (2,

incl.) sleep', *ripat* 'we (pl. incl.) will sleep'; *rapat*, *rəpat* 'we (pl. incl.) sleep'.

25 *mA-* → *ma-* alternating freely with *mæ-*: *mapat*, *məpat* 'we (pl. excl.) sleep'.

27 *lA-* → *l-* before 31 *LU-* (when this in turn is followed by 42 *tE-*, 51 **AORIST**, 56 *taa-*, or the stem) or 43 *I-*; → *le-* before 56 *taa-* and before a sequence of either 32 *TEL-* or 42 *tE-* with 55 *naa-*; elsewhere → *la-* alternating freely with *læ-*, e.g. *lupat* 'they (2) sleep', *lutnaapat* 'they (2) didn't sleep', *lipat* 'they (pl.) will sleep'; *letaapatti* 'they (pl.) don't sleep', *letnaapatti* 'they (3, 4) won't sleep'; *latapat*, *lətapat* 'they (3, 4) sleep'.

1.22. 31 *LU-* → ∅ after 25 *mA-* and 26 *mu-*, and → *u-* after 24 *rA-* and 27 *lA-*, when followed by 42 *tE-*, 51 **AORIST**, 56 *taa-*, or the stem; → *l-* after all non-singular person prefixes when followed by 41 *O-*, 43 *I-*, or 55 *naa-*, e.g. *mapat* 'we (2, excl.) sleep'; *lutepat* 'they (2) slept'; *mulipat* 'you (2) will sleep'.

32 *TEL-* → *ta-* alternating freely with *t-* before 51 **AORIST** or the stem; → *t-* before 41 *O-* or 43 *I-*; → ∅ before 42 *tE-* or 56 *taa-*, e.g. *ratapat*, *ratpat* 'we (3, 4, incl.) sleep'; *mutipat* 'you (3, 4) will sleep'; *latepat* 'they (3, 4) slept'.

1.23. 41 *O-* → *o-* alternating freely with ∅: *malopat*, *malpat* 'we (2, excl.) are about to sleep'.

42 *tE-* → *te-* word-initially (**P3** sg.); → *te-* alternating freely with *t-* after prefixes of Classes 20 and 30 and immediately before the stem; → *t-* after prefixes of Classes 20 and 30 and before 55 *naa-*, e.g. *tepat* 'he slept'; *natepat*, *natpat* 'I slept'; *natnaapatti* 'I didn't sleep'.

43 *I-* + 22 *O-* → *u-* except before 55 *naa-*; *I-* → ∅ before 55 *naa-* in all persons except **P1** sg., **P1** pl. incl., and **P3** pl., and after 25 *mA-* and 26 *mu-* in affirmative forms; elsewhere → *i-*, e.g. *onaapatti* 'you won't sleep', *mupat* 'you (pl.) will sleep'; *ipat* 'he'll sleep'.

1.24. 51 **AORIST** → *b-*, *g-*, or *d-* depending on stem class. See the examples in 1.15.1., and class membership in 2.1.

54 *v-* → *m-* with one stem *hei* 'to weave'; otherwise → *v-*, e.g. *obit omei* 'you want to weave'; *obit ovasi* 'you want to hit him'.

1.25. 62 -Vx → -ux, -ox, -ax, or -nux, and 63 -NI → -i, -e, -a, or -ni, depending on stem class as follows:

Vtr1, with -ux, -i: has 'hit, kill', hil (or *hil) 'dig', hulut 'peel', *hur 'hold, grasp, pick up, bear (a child)', *husil 'follow', *hustil 'hide in wait for', *kamuet 'find', *karpis 'taste', *kas 'wash', *kes 'call', *laŋves 'look for', *laxat 'watch', *læh 'carry in the hand', lehit 'leave, abandon', *lih 'plant', *liŋ 'put', mal 'uproot', mæmæs 'thank!', muten 'rub!', *nenem 'think, remember', *ŋas 'chew, bite', pelpas 'step on', pispis 'teach, show', porat 'lift', pus 'see', rat 'take out, up, off, away', saxpis 'try', *seson 'hide', *sis 'ask for', talxat 'catch', tas 'peel, skin', tatil 'wait for (person acting)', tavul 'break (long things)', telpas 'tear', *til 'sew', tilen 'spill', tin 'burn', titil 'wait for (thing acting)', *tivin 'push', *tupas 'break (round things), tuxoh 'touch', varxat 'tie', voxxol 'enclose', vul (see tavul), Xalen (*Xalen) 'burn up', Xan (*Xan) 'burn', Xat 'catch (disease acting on person)', xum 'squeeze'.

Vtr2, with -ox, -e: *kakal 'scratch', *kutaxol 'cover', *loŋ 'hear', raŋ 'empty', sar 'tie up, hang up', *sikkuexol 'plug', vaŋ 'conceive', var 'tie', xal 'buy'.

Vtr3, with -ax, -a: *kil 'know', *laŋ 'open (container, book)', tel 'accompany'.

Vtr4, with -nux, -ni: mu 'drink', pos 'sell', *sa 'give', *sei 'insert', *so 'put', Xa 'eat', xoXOles 'exchange'.

1.3. The co-occurrence restrictions and morphophonemic rules described above, as they involve the prefixes of Classes 20 through 50, yield the combinations presented in Table 2. Throughout the table free alternations are represented by (1) /a/ in the case of /a/ ~ /æ/, (2) /o e a/ when these ~ ∅.

Column I shows the minimal prefix combinations which immediately precede the stem, 51 AORIST, or a Subjunctive prefix (53, 54). Column II adds 41 O- Potential. Stems of the class not inflectable for 51, 53, 54 show a specific subjunctive form only in P3 sg. (with 52 va-), and a specific imperative form only for P2 sg. (unmarked). The potential forms occur as obligatory dual and paucal counterparts

of the subjunctive form although, unlike subjunctive forms, the potential also occur in independent clauses. Examples with *pat* 'sleep': *napat* 'I sleep', *opat* 'you sleep', *pat* 'he sleeps', *rupat* 'we (2, incl.) sleep'; *ralopat* 'we (2, incl.) are about to sleep'; *nabit napat* 'I want to sleep', *obit opat* 'you want to sleep', *bit vapat* 'he wants to sleep', *rubit ralopat* 'we (2, incl.) want to sleep'; *pat* 'sleep!', *ralopat* 'let's (we 2 incl.) sleep!'. Stems of the class inflectable for all Class 50 categories distinguish Aorist from Subjunctive in all persons, and distinguish Potential from both Aorist and Subjunctive. They also show specific imperative forms for all plural persons as well as **P2** sg. Examples with *has* 'hit': *nabas* 'I hit', *obas* 'you hit', *bas* 'he hits', *rubas* 'we (2, incl.) hit', *rabas* 'we (pl.) hit'; *ralobas* 'we (2, incl.) are about to hit'; *nabit namas* 'I want to hit', *obit ovas* 'you want to hit', *bit vahas* 'he wants to hit', *rubit ralohas* 'we (2, incl.) want to hit', *rabit ravas* 'we (pl.) want to hit'; *has* 'hit!', *ralohas* 'let's (we 2 incl.) hit!', *rahas* 'let's we (pl.) hit!'.⁷

The remaining columns show the addition of Tense and Negative prefixes.

2. STEM CLASSES

2.1. Stems Inflected for Aorist

The stems which may be inflected for Aorist show one of the initial consonants /v h x t/ in the case form, and this consonant is automatically lost when 51, 53, or 54 is prefixed.⁸

This stem class consists of various subclasses defined by the following criteria:

(1) The three allomorphs of 51 **AORIST** define stem classes.

(2) The subjunctive prefixes 53 and 54 occur only with a subclass of the stems inflectable for Aorist.

(3) 54 V- has the allomorph m- in **P2** sg. with a single stem.

(4) The occurrence of 55 *naa-* or 56 *taa-* determines a stem-initial consonant alternation /h/ → /v/ or /h/ → /x/ with certain stems.

(5) One small stem class shows a basic # /x/ → ∅ in all environments except following 55 *naa-* or 56 *taa-*.

The relationships between the classes thus defined are shown in Table 3, and the stems involved are listed below in terms of the class combination types represented by the rows of the table.

Type 1: vai 'fight', vaŋ 'conceive', vaŋos 'breathe', var 'be blind', var 'tie', varxat 'tie', vas 'launder', vo 'rot', vohon 'close (int.)', vor 'be sweet', voxxol 'enclose', vul 'break (long things)', vulii 'count, read', vuol 'be tired', vurvur 'be ulcerated', vus 'finish', vut 'be dull'.

Type 2: vue 'be dry'.

Type 3: ha 'go (int.)', has 'hit, kill', he 'be', he 'go (tr.)', hei 'want, love', hiles 'turn', hisuu 'meet', hit 'want to; say', hiteni 'say', hol 'dance', hos 'be good', hulut 'peel', hut 'jump', huue 'open (tr.)'.

Type 4: hei 'weave'.

Type 5: huii 'blow'.

Type 6: hil (*hil) 'dig (tr.)',⁹ *hur 'hold, grasp, pick up', *hus 'hide (tr.)', *husil 'follow', *hustil 'hide in wait'.

Type 7: hui 'scrape'.

Type 8: xa 'fly', *xa 'say', xal 'buy', xei and xeihex 'be hard, difficult, strong', xo 'be from', xoni 'be similar to', xoXoles 'exchange', *xul 'swim', xum 'squeeze'.

Type 9: Xa 'eat', Xalen (*Xalen) 'burn up', Xan (*Xan) 'burn', Xat 'catch (disease acting on person)'.

Type 10: ta 'be, continue', tale 'warm oneself', talxat 'catch', tamo 'wait a long time', taŋa 'stay', tas 'skin, peel', tatil 'wait for (person acting)', tavul 'break (long things)', tax 'be here', taxau 'burn (int.)', te 'be in, on, at', tei 'chop', tel 'accompany', telpas 'tear', *tev 'happen', ti 'be, continue', tihii 'slice', *til 'sew (tr.)', tilen 'spill', tilomun 'return', tin 'burn (tr.)', tiomu 'hurry', *tis 'write', titil 'wait for (thing acting)', *tivin 'push', totan 'sit', totax 'stay here', *tupas 'break (round things)', tuxoh 'touch'.

2.2. Vowel Loss in Reduplicated Stems

The irregular verbs of a large class show a free allomorph (basic) with two identical initial CV syllables and a bound allomorph in which the first vowel is lost, e.g.

mæmæsnou 'he thanks me', nammæsi 'I thank him'. In the case of those stems which add 23 mi- in P3 sg. and which do not normally have a human actor, the basic allomorph occurs very rarely (as imperative).

Only two stems are recorded which show the canonical form in question but lack the syllable reduction; these are *kakai 'walk' (cf. *kau 'go to the garden'), and *sisi 'whistle (of the wind)'. A single stem *sital 'penetrate, emerge' shows the reduction in non-identical syllables.

The stems which show the alternation #CVCV... → -CCV... are: *kakal 'scratch', *kakan 'steal', *kakas 'be sweetened', *kakat 'be pepper-hot', *kokon 'smell good', *kokora 'crow', mæmæas 'be green, blue', mæmæl 'be tired', mæmæs 'thank', mæmæse 'be clean', memees 'urinate', memer 'be wet', memerou 'be soft', momotii 'be smooth', mumuli 'be round', mumun 'drink' (apparently synonymous with mu), mumuu 'be dirty', *nenem 'think, remember', papan 'whistle', pipili 'be red' (apparently synonymous with pili), pipin 'suffice, be enough', *rerei 'knock', sasal 'float', seseh 'best (of the heart)', *tetev 'swell, be swollen', *titil 'sew (int.)', *titin 'be hot'.

2.3. Non-Systematic Irregularities

2.31. ha Vint 'to go' and he Vtr 'to go' are unique in that their subjunctive forms occur in independent clauses. ha has a special allomorph -æ in the Aorist. Examples: nabe vila 'I go to Vila', name vila 'I am about to go to Vila'; bæ 'he goes', vaha 'he is about to go'.

2.32. ammei 'to come' shows alternative irregular P3 sg. Aorist forms bemei and mei, and has an allomorph -mmei with person and number prefixes: ammei 'come!', nammei 'I come', immei 'he'll come'.

2.33. taŋa 'to stay' and te 'to be in, on, at' show allomorphs -tiŋa and -ti respectively in all non-singular persons: madi vila 'we (pl. excl.) are in Vila'; ladiŋa 'they (pl.) stay'.

2.34. baVAŋ 'to walk' and boVOŋ 'to forget' show the respective allomorphs: free bavaŋ, bovoŋ; bound -baŋ, -boŋ, e.g. nabaŋ 'I walk', bavaŋ 'he walks', ibaŋ 'he will walk';

eox bovoŋ 'I forget', em taaboŋniti 'you don't forget it'.¹⁰ boVOŋ also shows an irregular subjunctive form voyboŋ.

2.35. xoXoles 'to exchange' is inflected for Aorist (Type 8) and shows an allomorph with reduplication when no Class 20 prefix occurs; thus: nagoles 'I exchange', goxoles 'he exchanges', ixoles 'he will exchange'.

2.36. *sital 'to emerge, penetrate' has a bound allomorph -stal: mistal 'he emerges'.

TABLE 1

10 <i>Movement</i>	20 <i>Actor Reference</i>	30 <i>Number</i>
11 ha-	21 nA- P1 sg.	31 LU- Dual
	22 O- P2 sg.	32 TEL- Paucal
	23 mi- P3 sg.	
	24 rA- P1 non-sg. incl.	
	25 mA- P1 non-sg. excl.	
	26 mu- P2 non-sg.	
	27 lA- P3 non-sg.	
40 <i>Aspect/Tense</i>	50 <i>Aorist/Subjunctive/Negative</i>	
41 O- Potential	51 AORIST	
42 tE- Past	52 va- P3 sg. Subj.	
43 I- Future	53 m- P1 sg. Subj.	
	54 V- P2 sg. and P1-3 non-sg. Subj.	
	55 naa- Past and Future Neg.	
	56 taa- Aorist Neg.	
60 <i>Object Reference</i>	70 <i>Negative</i>	
61 -nou P1 sg.	71 -ti	
62 -Vx P2 sg.		
63 -NI P3 sg.		

TABLE 2

	PRONOUNS	I: ±20±30	II: ±20±30+41	III: ±20±30+42
I	inou	na-		nate-
You	xoux	o-		ote-
He	xi	mi- (or un- marked)		te-
We incl.				
2	ralu	ru-	ralo-	rute-
3, 4	ratel	rata-	rato-	rate-
pl.	xir	ra-		rate-
We excl.				
2	xamel	ma-	malo-	mate-
3, 4	xametel	mata-	mato-	mate-
pl.	xamem	ma-		mate-
You				
2	xamil	mu-	mulo-	mute-
3, 4	xamitel	muta-	muto-	mute-
pl.	xamim	mu-		mute-
They				
2	xalu	lu-	lalo-	lute-
3, 4	xatel	lata-	lato-	late-
pl.	xir	la-		late-
		IV: ±20±30+43	V: ±20±30+56	VI: ±20±30+42+55
I	ni-		nataa-	natnaa-
You	u-		otaa-	otnaa-
He	i-		taa-	tenaa-
We incl.				
2	rali-		rutaa-	rutnaa-
3, 4	rati-		rataa-	ratnaa-
pl.	ri-		rataa-	ratnaa-
We excl.				
2	mali-		mataa-	matnaa-
3, 4	mati-		mataa-	matnaa-
pl.	ma-		mataa-	matnaa-

Continued overleaf.

TABLE 2 - continued from p.37

	IV: ±20±30+43	V: ±20±30+56	VI: ±20±30+42+55
You			
2	muli-	mutaa-	mutnaa-
3, 4	muti-	mutaa-	mutnaa-
pl.	mu-	mutaa-	mutnaa-
They			
2	lali-	lutaa-	lutnaa-
3, 4	lati-	letaa-	letnaa-
pl.	li-	letaa-	letnaa-
	VII: ±20±30+43+55		
I	ninaa-	You	
Yqu	onaa-	2	mulnaa-
He	naa-	3, 4	mutnaa-
We incl.		pl.	munaa-
2	ralnaa-		
3, 4	ratnaa-	They	
pl.	rinaa-	2	lalnaa-
We excl.		3, 4	letnaa-
2	malnaa-	pl.	linaa-
3, 4	matnaa-		
pl.	manaa-		

TABLE 3

	AORIST	BASIC #C	NEGATIVE	SUBJUNCTIVE (53, 54)
1	b-	v	(v)	
2	b-	v	(v)	m- v-
3	b-	h	v	m- v-
4	b-	h	v	m- v-, ~m- in P2 sg.
5	b-	h	(h)	m- v-
6	g-	h	(h)	m- v-
7	g-	h	x	m- v-
8	g-	x	(x)	
9	g-	∅	x	m- v-
10	d-	t	(t)	

NOTES

1. The field work on which this study is based was carried out in June and July 1967, and was supported in part by a University of Hawaii Individual Research Grant.

The segmental phonemes of Southeast Ambrym are: voiceless stops /p t k/, voiced (prenasalised) stops /b d g/, spirants /v s x h/, nasals /m n ŋ/, lateral /l/, tap or trill /r/; vowels /i e æ u o a/. /v/ is bilabial or bilabio-dental, with voiceless allophones in word-final position. It alternates freely with /p/ word-finally. /x/ is a post-velar spirant or a uvular trill; voiced allophones are far more frequent than voiceless ones in syllable-initial position, but only voiceless allophones occur syllable-finally. /x/ alternates freely with /k/ word-finally. The high vowels /i u/ have both syllabic and non-syllabic allophones. /u/ is non-syllabic [w]: (1) when (a) word-initial or immediately preceded by a labial, velar, or laryngeal consonant, and (b) immediately followed by /e/ or /i/; and (2) when immediately preceded by a back vowel /u o a/. /i/ is non-syllabic [y] when immediately preceded by any vowel. Geminate vowel clusters are phonetically long.

2. This information is from personal communication with Mr Robert Tonkinson. Village names are written phonemically, with the exception of the underlined forms.

3. W.F. Paton, *Language and Life of Ambrym*, University of Sydney dissertation, 1956; South Pacific Commission Microfilm 79. I have not been able to consult this work.

4. A. Capell, *A Linguistic Survey of the South-Western Pacific*, Nouméa, 1962, pp.214-215. SE Ambrym speakers claim to understand nothing of the northern language, and can use only Pidgin in contact situations. A sketch of a North Ambrym dialect is included in S.H. Ray, *A Comparative Study of the Melanesian Island Languages*, Cambridge, 1926, pp.333-

347, and a comparison of this data with my own clearly supports the contention that SE Ambrym and North Ambrym should be considered separate languages rather than dialects of a single language.

5. There is an intransitive subclass of *stative* stems which are never inflected. For the purpose of this paper, "verb" is used in a sense that excludes the stative class.

6. All examples are in phonemic transcription. "k" and "p" are never written word-finally, though /k p/ do occur there as free alternants of /x v/ respectively.

7. The obvious complementation between potential and subjunctive forms, as well as the semantic similarity involved, suggests an alternative analysis in which 41, 52, 53, 54 are combined as allomorphs of a single morpheme. The data is inconclusive as regards this question, though the informants accepted "subjunctive" forms (52, 53, 54) in independent clauses only for the stems *ha Vint* 'to go' and *he Vtr* 'to go' (see 2.31.). It should also be noted here that forms showing both 41 and 51 are very few in the data, and must be checked.

8. Stems not inflectable for Aorist show initial /b k l m n ŋ p r s t/. Initial /b t/ are rare: *buriŋ* 'to be thick'; *tæoŋ* 'to listen', *tamea* 'to wake up'. A unique stem with an initial vowel is *ammei* 'to come' (2.32.).

9. The transitive-intransitive distinction correlates with the presence-absence of 51 in the pairs: (1) **til Vtr* 'sew', **titil Vint* 'sew'; (2) *tin Vtr* 'burn', **titin Vint* 'be hot'; (3) *hil* (**hil*) *Vtr* 'dig', *kil* (**kil*) *Vint* 'dig'. Thus: *dini* 'he burns it', *mittin* 'it is hot'; *(mi)gili* 'he digs it', *(mi)kil* 'he digs'.

10. *bovoŋ* belongs to a small class of stems which occur only with the dependent noun *e* as subject; thus no Class 20 and 30 prefixes may occur in the verb.

CORRIGENDA

At the time this article was written it was not known that a second summer of field work would be possible. The continued research has revealed several serious errors in the original analysis, and the following corrections must be made.

Page 29, line 4ff. The occurrence of 23 mi- is phonologically determined as follows: it never precedes labial consonants, is optional before /d/ and /g/, and is obligatory before all other consonants.

Page 29, sect. 1.14ff. The suspicion expressed in note 7 (see page 33) turned out to be justified. Prefixes 41, 52, 53, 54 must be combined into a single morpheme, Subjunctive, represented by a zero allomorph in P1 sg., P2 sg., and all plural persons of regular verbs and of irregular verbs of types 1, 8, and 10. Class 40 is then relabelled as simply "Tense".

Page 29, sect. 1.15. A new class 50 prefix, na- 'might', has been found. Co-occurring prefixes of other classes have the same shapes as before naa- in Table 2 VII; thus nina-, ona-, na-, ralna-, ratna-, rina-, ...

Page 31, last paragraph. The P2 sg. Subjunctive of hei 'weave' is ovei, not omei; thus criterion (3) of sect. 2.1. must be deleted, as well as irregular verb type 4 of Table 3.

Page 32, sect. 1.25. In addition to the allomorphs listed, 62 -Vx has the allomorph -x with stems with final /æ/, and 63 -NI has a zero allomorph with stems ending in /æ/ or /i/.

Page 33, sect. 2.1., line 2. For "case" read "base".

Page 35, first complete paragraph. The stems glossed as 'walk', and 'whistle (of the wind)' have been rephonemized as kaakau and siisi respectively. Valid examples of the

phenomenon in question are: *mæmæi* 'yawn', *leleni* 'have a premonition of', *tata* 'cut repeatedly'.

Page 37, Table 2. In pronoun column, for *xamel*, *xametel*, *xamem*, respectively, read *xaməl*, *xamətəl*, *xaməm*. The P3 plural pronoun should read *xil*, not *xir*. In column IV the We excl. pl. form should read *mu-*, not *ma-*. A second P2 plural pronoun, *xami*, has been found, which contrasts with *xamim* in that the latter refers to a group of definite size. This contrast is not reflected in the verb prefixes.

A PATTERN OF MORPHOPHONEMIC ALTERNATION IN NGUNA, NEW HEBRIDES¹

A. J. SCHÜTZ

In a 1927 publication,² Dempwolff discussed the morphophonemic alternation of certain initial consonants in the dialects of Epi, stating that these were the only dialects in which the alternation was still an active process. His unawareness of a very similar process in Nguna and some closely related languages³ can be traced to some curious omissions in S.H. Ray's grammatical sketches of Nguna.

Ray's first work on Nguna appeared in 1887, the year he began his study of Melanesian languages.⁴ In it he noted that "the letter changes so common in Sesake and Faté [Efate] occur also in Nguna. k changes to g[ŋ], p to v, q [a bilabial implosive, later written as p̃] to w, r to t, ..." ⁵. Since Ray's data were restricted to a translation of Matthew and Mark, it is unlikely that he had enough information to produce a paradigm showing clearly the pattern of the alternation. This might also explain a similar omission in his work on Epi (Baki dialect), which appeared in 1889. It wasn't until 1893 that the alternation was more fully described. Again for the Baki dialect, "modification of initial consonant" was noted as one of the markers for tense. In a verb paradigm listed, forms with mb- were used in the "indefinite" tense; those with v- for future tense.⁶ Through chance, the alternation does not show in the Efate (which dialect is not stated) paradigm; if forms without the future particle wo had been elicited, the alternate consonants would have been used, and later Dempwolff would have been able to see that this phenomenon was not limited to Epi. In spite of the abundance of material in Nguna that was made available in the intervening years, and the notes and corrections provided by the field missionaries Milne and Michelesen, in 1926, Ray still found it

possible to say of the Ngunu consonant alternation, "The changes appear to have no grammatical signification."⁷ It wasn't until over twenty years later that someone wrote a description of the environments for the two classes of consonants. The Reverend Graham Miller listed the pairs in the following order:⁸

<i>Primary</i>	<i>Secondary</i>
p	v
ḡ	w
g	k
t	r

He gave the environments for the secondary forms:

1. Directly after any of three morphemes: ḡa, used for imperative, conditional, and incomplete action; ga, non-past and subjunctive; and pe, conditional.
2. As the first consonant of any adjective form.
3. As the first consonant of the base in reduplicated forms.
4. In passive constructions.

For the material it covers, this description is adequate. But the listing of environments is not exhaustive; there are other cases in which the so-called secondary form is used.

It finally becomes apparent that the description would be simplified by using the other form for the base. The newly-designated secondary form now occurs under the following conditions:

1. Directly after all of the set of pronoun-verbal markers.

<i>Base</i>	<i>Secondary form</i>
vano	e pano 'he goes'
warua	eu ḡarua 'they're big'
kani	a ganikani 'I eat'
rogo	ku togo 'you hear'

2. Within this construction, any tense or aspect marker can be inserted between the verbal marker and the verb,

except those three morphemes listed above - *ḡa*, *ga* and *pe*, which require the base form.

ḡa vano 'go (imperative)'
a ga vano 'I'm going'
e pe vano 'if he goes'

So far this seems like a problem merely in economy of description. But when viewed in the light of some other phenomena in the Austronesian languages of Oceania, it provides information that may ultimately help clarify one of the more puzzling problems of the comparative linguistics of this area.

There are many Proto-Austronesian etyma for which the cognate forms in some cases reflect in initial position a simple Proto-Austronesian obstruent, while in others they reflect a cluster of that obstruent preceded by its homorganic nasal. Sometimes this results in doublets in the same language, such as Fijian *rua* 'two' and *Ṛua* 'twins'. This phenomenon is unexplained, but is clearly of considerable interest to the reconstruction of the history of the languages involved, and may be of particular interest to problems of subgrouping.

It has been hypothesised, for example in Dyen's 1949 and Grace's 1959 works, that the simple obstruent and the nasal cluster derive from different members of some sort of paradigm that existed at an earlier period of history. However, no systematic distinctions in either meaning or function between forms of the two types have been noted in the better-studied languages of Oceania. Nguna is unusual in that the pattern of morphophonemic alternation just described is an example of a system of paradigmatic relations of the general sort hypothesised. That is, the set of consonants occurring as the base form can be considered as the reflex of the simple obstruent, and the set occurring in the other positions as the reflex of the nasal cluster.

As for the phonetic shapes of the present reflexes, in the course of development, the sets of consonants in some languages have been considerably reduced. This has often taken the form of loss of nasalisation in the complex set, and spirantisation of the non-nasalised set, so that no segmentation is possible. This has happened to an extent in

Nguna, but some of the related languages still show pairs like *t - nd* and *v - mb*.⁹

Although the shape of this hypothetical morpheme is difficult to determine, its function may be better guessed at from the Nguna data than from previous information. Its primary function seems to have been verbal, possibly marking some grammatical function exclusive of the general nature of the exceptions mentioned before: imperative, incomplete, subjunctive, non-past, and conditional.

A clearer knowledge of these alternations in Nguna has simplified one complexity in the comparison of the consonant systems of Nguna and Fijian. It first appeared that Nguna initial /p/ corresponds to both /v/ and /b/ in Fijian. For example:

<i>Nguna</i>	<i>Fijian</i>
pano	vano 'go'
piisa	vica 'how many'
peepe	bebe 'butterfly'
pati	bati 'tooth'

But by using /v/ as the base form for those Nguna words that do permit alternation, the correspondence is restated as /v/ to /v/. This also seems to hold for those words that do not permit an alternation: Nguna *vonu* and Fijian *vonu* 'turtle'. Nguna initial /p/ with no alternation corresponds to Fijian /b/, as in the examples above.

However, the medial occurrences of the nasal clusters have never been explained satisfactorily. This problem exists in Nguna, with a seemingly unique complication. The members of each pair, alternating in initial position, are in partial complementary phonological distribution medially. For example, for the pair /p,v/, the former often occurs after doubled vowels:

loopu	'bamboo'
noopa	'cabbage'
laapa	'many'

/v/ usually occurs in other positions:

nanova	'yesterday'
nasava	'what'

An even more complex problem is presented by the major allophones of /t/, [t] and [d]. Although the members of this pair contrast in closely-related Tongoa and have been written separately since the orthography was established, there are no examples of contrast in Nguna. Even though the lines have been blurred by the influence of the writing system, there is a pattern of complementary phonological distribution and free variation that accounts for all instances of [t] and [d] except those that fit the morpho-phonemic pattern described above. Obviously, this poses some theoretical problems for those who hesitate to describe allophonic variation by using morphological criteria.

NOTES

1. An earlier version of this paper was read at the winter, 1966, meeting of the Linguistic Society of America. The field research in the summer of 1966 was supported by a grant from the University of Hawaii Research Council; that in the following summer by a grant from the National Science Foundation.

The historical part of the paper is based on suggestions from George W. Grace.

2. Capell 1962:217. I have not seen the original article.
3. Some more distantly related languages have a much more complicated system of morphophonemic alternation. See Gary J. Parker's discussion of Ambrym.
4. Ray 1926:vii.
5. Ray 1897:409.
6. Ray 1889:104.
7. Ray 1926:196.
8. Miller 1948 (?). No pagination.
9. Tongoa has retained the prenasalised consonants.

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THE PHONETIC NATURE OF FIJIAN CONSONANT CORRESPONDENCES

A. J. SCHÜTZ

0. INTRODUCTION

This article was suggested by a discussion in Paul L. Garvin's Language Data Processing Seminar, held at Indiana University in 1964.¹ The writer had begun to devise a programme for computer recognition of cognates among Fijian dialects. But the large number of borrowings, usually unrecognisable from phonemic shape alone but demonstrable from limited historical records, led to the replacing of "cognate" by "phonetically similar form".² The method of viewing the data then, was changed from diachronic to synchronic; and for the time being, the genetic hypothesis was laid aside.

The purpose of this method of comparison is to determine the degree of relationship (relative similarity of forms) by comparison and measurement. Its ultimate utility might be similar to that of a contrastive analysis of two unrelated languages: to provide a basis for second-dialect teaching material, or for the measurement of degree of mutual intelligibility.

1. COMPARISON

For the computer project, it was found that a modified distinctive feature approach revealed certain phonetic patterns among the correspondences. All the contrasts within the consonant systems can be accounted for by listing the following components. It should be noticed that although *position* and *manner* are obligatory, *co-feature* is an optional category: none, one, or both of the co-features may be present.

<i>Position</i>	<i>Manner</i>	<i>Co- feature</i>
labial	stop	nasalisation
dental	spirant	labialisation
alveolar	nasal	
velar	trill	
glottal	lateral	
	glide	

It is possible to use the overall pattern of consonants for the various dialects as a base that will allow a description of the correspondences in terms of differences among the components.

p		t	k	k ^w	?
m _b		^m d	ŋg	ŋg ^w	
		s	x	ɛ ^w	h
β	ð				
m		n	ŋ	ŋ ^w	
		r			
		ⁿ r			
		l			
w		y			

The types of correspondences that exist, excluding those exemplified by [t] : [t]³ are:

1. Position

- a. alveolar:glottal [t]:[ʔ], [s]:[h]
 b. velar:glottal [k]:[ʔ]

2. Manner

- a. stop:spirant [p]:[β], [k]:[x]

3. Co- feature

- a. non-nasaliſed:nasaliſed [r] [ⁿr], [t]:[ⁿd], [k]:[ŋg]
 b. non-labialiſed:labialiſed
 [ŋg]:[ŋg^w], [k]:[k^w], [x]:[x^w], [ŋ]:[ŋ^w]

Shifts involving labialisation, applying only to the velar position, are the only kind operating on all the members of a component group. Thus, there are no systems with labialisation of only one velar consonant. But each system with a set of labialised velars has a contrasting set of non-labialised velars.

The non-nasalised - nasalised correspondence for stops operates either at one position (alveolar) or two (alveolar and velar), but never at three. There are sporadic examples of [^mb]:[p], but not extensive enough to seem significant.⁴

Except for the occasional [p]:[β] correspondence, the only stop:spirant correspondence is at the velar position. A [t]:spirant correspondence is at the velar position. A [t]:spirant shift is unlikely since both the dental and alveolar positions in the spirant manner are filled.

NOTES

1. The project, "A Program for the Determination of Lexical Similarity", was part of the Linguistic Institute's Language Data Processing Seminar. A project report, by the present writer and Jerome Wenker, appears in *Computation in Linguistics: A Case Book*, edited by Paul L. Garvin and Bernard Spolsky, Indiana University Press, 1966.

2. C.F. Hockett's comments on this type of problem: "In the case of dialects of a single language, the sorting out of cognates from loans or accidental resemblances is exceedingly difficult. And when we remember that a group of related dialects need by no means be descendants of an earlier more homogeneous form of speech, we see that the logical basis for the contrast between cognates and loans is lacking..." *A Course in Modern Linguistics*, Macmillan, 1958, pp.486,7.

3. For the sake of consistency, square brackets have been used throughout.

4. The programme, however, did recognise this pair as "phonetically similar", since the relationship between the members is the same as that between [d] and [t]. "Significant" here is based on the writer's impressions. Nowhere could he find statistical criteria for determining which sound correspondences are regular and which are irregular.