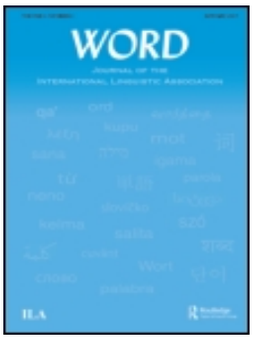

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Marshallese Phonemics: Labialization or Palatalization?

Both labialization and palatalization have been reported for the Marshallese[1] consonant system; first one, then the other, then both. This paper attempts to examine whether there is in fact a three-way contrast among flatted, plain, and sharped consonants—to use the acoustic terms—and if not, to determine which of the two distinctive features is operating.

Marshallese consonants may be considered within a matrix of twelve vowels, comprising three series of four each: front (unrounded), back unrounded, and back rounded:

i	ɨ	u
ɪ	ɘ	ʊ
e	ə	o
ɛ	a	ɔ

The four within each series are distinguished by parallel degrees of height and/or tenseness. They have no significant distributional limitations, there are numerous diphthongal combinations, and all occur geminated.

Those who worked on the Protestant translation[2] of the Bible were of

[1] This paper is based on fieldwork done while the author was an employee of the Department of Education of the Trust Territory of the Pacific Islands, 1953–1959. An orthography based on the analysis here presented was used for numerous vernacular publications of the Department from 1955 through 1959; more recent publications follow the traditional orthography (for details of which see Note 2 below).

[2] *New Testament: ak Kalimur Ekäl an ar Iroij im Dri Lomor Jisös Kraist*, New York, American Bible Society, 1885. Portions of the above and of the Old Testament were printed earlier in Honolulu (Mark, 1863; The Gospels and Acts, 1865 and 1875; Mark and John, 1873; Genesis, 1878) and in New York (Genesis, Jonah, Psalms, Romans, Corinthians, Galatians, Ephesians, and Philippians, 1881). Later New York printings include revised editions in 1895, 1899 (including a revised Psalms), 1914 (including the Old Testament books mentioned above, revised, and Isaiah), and 1931. The 1914 edition was entitled *Mötön Kalimur eo mokta kab Kalimur Ekäl; Jeje ko re Kwojarjar* (*Marshall Island Scriptures*) and was reprinted in 1933, 1939, 1945, 1950, 1955, 1956, 1959, and 1960. According to records of the American Bible Society 5000 copies of the *New Testament and Psalms* and 9200 copies of the *Marshall Island Scriptures* have been

English, Hawaiian, and Marshallese linguistic background. In the direction of labialization they recorded a good number of words with *bw-*, *mw-*, and *kw-* before unrounded vowels. In their schools these were treated as clusters. They did attempt to distinguish what later became known as the palatalized *r* by the unit *dr*, although with quite a bit of inconsistency. The symbols *d* and *g* were sometimes interchanged for *t* and *k*, respectively (Marshallese has no voicing, fortis-lenis, or aspiration contrast), but *p* was assigned the attribute of "lightness" (as opposed to heaviness) and used with consistency especially in final position for non-labialized bilabial stops.

Fr. Erdland[3] presented much the same interpretation for labialized *b*, *m*, and *k*, and also *l* and *r* before vowels, except that they are treated as clusters with *u* before an unrounded vowel. Palatalized *l* struck his German ears as clear; he marked with a diacritic those darker and more "peculiar," although only a few examples are distinguished, and some of them wrongly. He cites one pair showing palatalized vs. non-palatalized *n*, but describes and writes the distinction as doubling.

A. L. Kroeber[4] based his work with the Marshallese crew members of a German schooner in port in San Francisco in 1911 on the work of Erdland. Of interest to us here are his observations on the allophones of the stops: aspirated and with intermediate voicing initially, voiced fricatives medially, and voiceless unreleased finally. His sample included labialized, pala-

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published since 1914. A parallel Marshallese-English edition of the New Testament only was published in 1948. Other Protestant Mission publications included an A–B–C book (*Buk in A*, Honolulu, 1863), a geography text (*Buk in Jeokrapi*, New York, 1864), an arithmetic book (*Buk in Bwinbwin*, Kusaie, 1935), and a hymn book (*Buk in Al kab Tun ko ñön ro Dri Ailiñ in Marshall*, Boston, 1944). (The author wishes to acknowledge assistance from the Navy Dictionary (see Note 5 below) and the American Bible Society in compiling this bibliographical information.) These together with some Roman Catholic mission publications (see Note 3 below) constitute the bulk of all materials published in Marshallese up until 1955 and have been instrumental in shaping what we term in this paper the traditional orthography. In addition to the consonant symbols shown for it in Table 1, and the five Roman vowel letters, the traditional orthography also uses *a* and *o* modified by diacritics.

[3] August Erdland, *Wörterbuch und Grammatik der Marshall-Sprache nebst ethnographischen Erläuterungen und kurzen Sprachübungen* (Berlin, 1906), pp. 195–200. Earlier publications of the Roman Catholic Mission such as the *Katekismus erik a Buk in Kemelele an Jesus Krist* (Jakobus López de Rego Adm. Apost., no date) follow Fr. Erdland's orthography in that *u* is used following consonants to indicate labialization; later ones such as a mimeographed Marshallese-English dictionary issued in 1953 follow the traditional use of *w*.

[4] "Phonetics of the Micronesian Language of the Marshall Islands," *American Anthropologist* XIII (1911), pp. 380–393.

talized, and plain; the above generalizations apply to all stops without qualification. What he termed the affricate *j* was found to agree exactly with the stops in its essential features.

The situation was relatively uncomplicated then until after World War II when Denzel Carr and Samuel H. Elbert, working on the language in connection with a U.S. Navy project,[5] were impressed by the palatalized quality of one *l*, one *r*, one *b*, and one *m*, and on this basis set up what Carr[6] termed a hypothetical rearrangement of the phonemes into two complete series, the one non-palatalized, the other palatalized. The phoneme *j* could easily be interpreted as a palatalized *t* (which, in fact, correctly characterizes its final allophone, as Kroeber noted earlier), but no examples of palatalized *n* or *k* were found or authenticated, and those few examples cited for palatalized *ŋ* have not held up under further testing in the field.

Labialization was felt to be non-phonemic, in the case of *p* and *m* a carry-over of their lip-rounding to the following vowel, in the case of *k* "the result of the rounding influence of a preceding or a following rounded vowel." When this *w* after-quality of *p* and *m* is not omissible, Carr recommended treating it as a member of the *u*-phoneme. Elbert modified this analysis in a sheet he published together with Leonard Mason's map of Arno Atoll[7] (which used Elbert's proposed orthography) in which he assigned full phonemic status to *bw*, *kw*, and *mw* in addition to *b*, *b'*, *k*, *m*, and *m'*. Charles F. Hockett based the references to Marshallese in his *Manual of Phonology* on Carr, except that he dropped most of the question marks and presented Marshallese as having two parallel subsystems, the one palatalized, the other not.

It is significant to note that in all the sources mentioned up to this point,

[5] *Marshallese-English and English-Marshallese Dictionary*. 14th Naval District, District Intelligence Office, Marshall-Gilberts Area, 1945, 2 vols. Setting the trend for most postwar researches in Marshallese phonology to follow, the comments on the sounds (pp. v–xv and xxvii) emphasize the need for spelling reform; entries are made in the traditional orthography and followed by a "phonetic respelling" which favors diacritics to digraphs, using the postposed apostrophe for palatalization of *b*, *m*, *n*, *l*, and *r*. Since some entries use the combinations *bw*, *mw*, and even (one each) *lw* and *n̄w* without the same combinations appearing in the inventory in the introduction, such are evidently considered clusters rather than digraphs.

[6] "Notes on Marshallese Consonant Phonemes," *Language* XXI (1945), pp. 267–270.

[7] "Marshallese Phonemes and Orthography (A tentative proposal)." Both this sheet and Mason's map to which it is attached are dated December, 1950, and later appeared (the map in reduced form) in Leonard Mason, "Anthropology-Geography Study of Arno Atoll, Marshall Islands," *Atoll Research Bulletin* (The Pacific Science Board, National Research Council, Washington, 1952), pp. 20–21.

the only valid examples of labialized bilabials and velars have been before *un*rounded (usually front) vowels, while the only valid examples of palatalized bilabials and velars are before back (usually rounded) vowels.

Alfred G. Smith,[8] who acknowledges help from Elbert, brought labialization back into the picture alongside of palatalization, and explored distributions a little more fully, but did not recognize the complementary distribution operating, or its implications. E. A. Nida[9] did not list any labialized phonemes in his inventory but through examples did recognize the phenomenon as clusters with *w*. Elbert, Smith, and Nida all cited good examples of the palatalized dental nasal which Carr suspected.

An exhaustive study of the distribution of bilabial obstruents and nasals shows that only two of the three varieties—labialized, plain, and palatalized—are actually in contrast in any one environment; to state it differently, of the two phonemes operating, one—an unrounded one—sounds plain to English ears before unrounded (especially front) vowels, but palatalized before back (especially rounded) vowels, while the other phoneme—a

Bilabials	*Phonemically Plain*			*Labialized*		
Obstruents	pɛ	'hand, arm'	(1)	bɛ	'fishpole'	(2)
	pepe	'decide'	(1)	bebe	'tuna'	(2)
	ippa	'with me'	(3)	baba	'papa'	(1–2)
	pokpok	'cough'	(3)	bokbok	'sandy'	(1)
	jaap	'red snapper'	(3)	jaab	'no!'	(1–2)
	ʊp	'*Barringtonia asiatica*'	(3)	ʊb	'chest'	(1–2)
Nasals	mɛ	'breadfruit'	(1)	m°ɛm°ɛ	'food'	(2)
	mɪ	'fish weir'	(1)	m°ɪ	'fall'	(2)
	maaŋ	'pandanus leaf'	(3)	m°aak	'dollar'	(1–2)
	mo	'forbidden'	(3)	m°o	'man's name'	(1)
	am	'our (excl.)'	(3)	am°	'your (sg.)'	(1–2)
	im	'and'	(1–3)	ɪm°	'house'	(1–2)

[8] *Wahween Jibehhleh Kajin Marshall* (*Guide to Marshallese Spelling*), Office of the High Commissioner, Trust Territory of the Pacific Islands, 1951. Proposed an orthography which used digraphs where Roman symbols did not suffice. In addition to the consonant symbols shown in Table 1, Smith suggested the following for vowels: *i, e, eh, ah*; *uh, ih, oh, a; u, uv, o, av*. The vowel or the last symbol of the digraph was repeated to show vowel length: *ii, ee, ehh, ahh; uhh, ihh, ohh, aa; uu, uvv, oo, avv*. Thus /|a|e/ 'see' became /dladleh/, /bidʊdʊ/ 'soft, easy' became /bidruvdruv/, and /jibeele/ 'spell' assumed its shape in the title of the volume. Resulting shapes of words departed so far from customary ones that the orthography was not acceptable to Marshallese educators, and the booklets were not distributed.

[9] "Report on Orthographic Problems in Marshallese," November, 1952, given limited circulation in typescript. Recognizes that neither Elbert's nor Smith's suggestions for spelling reform have been accepted and attempts a compromise using diacritics for vowels, and some diacritics, some digraphs for consonants. (See Table.)

rounded one—sounds plain before rounded vowels, but labialized before unrounded ones. In the examples that follow, numbers serve to indicate how the sounds in question impress the ears of English speakers: (1) plain, (2) labialized, (3) palatalized.

The velar obstruents and nasals exhibit a different distribution. Their only position of contrast is before an unrounded vowel. Note that this turns out to be the position of maximal consonantal contrast in the language. Here they occur both plain and labialized. Elsewhere—that is, before rounded vowels, or finally after any vowel—they do not contrast, and the allophones which do occur are rounded if either the preceding or following vowel is. Perhaps the best way to describe this would be to say that for velar consonants the labialization contrast is neutralized everywhere except before unrounded vowels. Again in these examples the numbers refer to how the sounds in question impress English ears. (It should be pointed out that the labialized velar nasal is extremely rare; the example cited is the only one yet found.)

Velars	*Phonemically Plain*			*Labialized*		
Obstruents	ke	'question particle'	(1)	k°e	'you (sg.)'	(2)
	kal	'loincloth'	(1)	k°al	'wash'	(2)
	ɪk	'fish'	(1)	k°ɪɪt	'octopus'	(2)
	ʊk	'net'	(1–2)			
	kon	'you (imperative)'	(2)			
	kuku	'ride piggyback'	(2)			
Nasals	ŋe	'if'	(1)	aeŋ°ɛŋ°ɛ	'clamor'	(2)
	ŋɛɛt	'when?'	(1)			
	aŋ	'wind'	(1)			
	oŋ	'homesick'	(1–2)			
	ŋoŋ	'name of islet'	(2)			

This accounts for all consonants except the apicals and the laterals. Palatalized varieties have been attested for *t*, *n*, *l*, and *r*, but with the exception of possible evidence from Erdland for laterals, nothing labialized.

Apicals	*Dental*		*Palatal(ized?)*	
Obstruents	tata	'very'	jaja	'carry on hip'
	to	'deep-sea pass'	jojo	'flying fish'
	ɛt	'name'	ɛj	'thatch'
	it	'make fire'	ij	'I (progressive)'
Nasals	ne	'leg, foot'	ɲe	'that (near you)'
	nam°	'secondary lagoon'	ɲam°	'mosquito'
	en	'let him'	eɲ	'that (distant)'

At this point it would seem tempting to go back to the bilabials and velars and reinterpret everything we termed labialized as plain, and everything

plain as palatalized. This would pave the way for two completely parallel sub-systems according to the hypothesis of Carr and Hockett.

However, an exhaustive study of the corpus reveals labialized liquids which contrast with the plain and with the palatalized ones in precisely the same limited environment of the velar contrast: before unrounded vowels.

Liquids	*Front*	*Back*	*(Back) Labialized*
Laterals	ļe 'ma'am'	le 'sir'	l°ɪ 'pond'
	ļaŋ 'sky'	laŋ 'storm'	l°iiti 'drink noisily'
	aļ 'sing'	al 'sun'	
Retroflex	di 'bone'	ri- 'people of'	mɛjr°irɨk 'islet name'
	dɛn 'water'	ren 'they should'	r°ebəjə 'hands in pockets'
	dak 'duck'	rak 'south'	
	ad 'our (incl.)'	ar 'lagoon beach'	ļɪjr°ɪ 'land tract name'
	od 'coral'	or 'gill'	

Some of these examples of labialized *l* and *r* were in fact recorded by Erdland as the liquid followed by *u*. There are no examples of labialized *t* or *n*.

Thus we have two alternatives. We can say that Marshallese utilizes both the distinctive features of flatting and sharping, the former in the bilabials and velars, the latter in the apicals, and both in the liquids:

Flat:	b	m°	k°–	ŋ°–			l°–	r°–
Plain:	p	m	k	ŋ	t	n	l	r
Sharp:					j	ɲ	ļ	d

Or we can say that the truly distinctive feature of the palatalized dentals and liquids is not their tonality but their relative compactness—in articulatory terms that they constitute a fourth point of articulation:

	Labials	*Dentals*	*Palatals*	*Velars*
Obstruents	p	t	j	k
	b			k°–
Nasals	m	n	ɲ	ŋ
	m°			ŋ°–
Liquids		ļ		l
				l°–
		d		r
				r°–

(Such an arrangement points up the fact that among the labialized phonemes, *b* and *m*° pattern quite differently from *k*°-, *ŋ*°-, *l*°-, and *r*°-.)

TABLE. SUMMARY OF PHONEMIC ANALYSES GIVEN OR IMPLIED BY SOURCES. (Parentheses indicate clusters, or distinctions made only sporadically or inconsistently)

Source	*Labials*	*Velars*	*Apicals*	*Liquids*
Broad Phonetic Transcription	b° b b′ m° m m′	k° k k′ ŋ° ŋ ŋ′	t j n ɲ	l° l l′ r° r r′
Traditional Orthography	(bw-) b (-p) (mw-) m	(kw-) k ñ	t j(s) n	l r (dr)
Erdland	(bu-) b (mu-) m	(ku-) k ñ	t(d) j n (nn)	(lu-) ļ l (ru-) r r′
Carr	p p′ m m′	k (k′?) ŋ (ŋ′)	t t′ n (n′?)	l l′ r r′
Navy Dictionary	(bw-) b b′ (mw-) m m′	(kw-) k (ñw-) ñ	t j n (n′)	(lw-) l l′ r r′
Hockett	p pʸ m mʸ	k kʸ ŋ ŋʸ	t tʸ n nʸ	l lʸ r rʸ
Elbert (1950)	bw- b b′ mw- m m′	kw- k ñ	t j n n′	l l′ r r′
Smith	bw- b by m my	kw- k ng	t j n ny	l dl r dr
Nida	b by m my	(kw-) k ng	t j n ɲ	l ļ r dr
Bender	b p m° m	k°- k ŋ°- ŋ	t j n ɲ	l°- l ļ r°- r d

The author leans towards the latter interpretation, which has the virtue of extending to the consonant system the one secondary tonality feature already operating in the vowel system: rounding, or flatting. It also posits that the truly distinctive feature is the one occurring with allophones at the point of maximal contrast.

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