



---

Reconstructing Proto-Oceanic Stress

Author(s): John Lynch

Source: *Oceanic Linguistics*, Vol. 39, No. 1 (Jun., 2000), pp. 53-82

Published by: University of Hawai'i Press

Stable URL: <http://www.jstor.org/stable/3623217>

Accessed: 30/09/2009 15:22

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=uhp>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We work with the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).



University of Hawai'i Press is collaborating with JSTOR to digitize, preserve and extend access to *Oceanic Linguistics*.

<http://www.jstor.org>

# Reconstructing Proto-Oceanic Stress

John Lynch

UNIVERSITY OF THE SOUTH PACIFIC

Proto-Oceanic (POC) probably did not have a vowel length contrast. Little work has been done on stress in POC, “but phonologically conservative languages generally agree in displaying primary stress on the penultimate syllable and secondary stress on every second syllable preceding the penultimate, and this was probably the POC pattern” (Ross 1998:18), a view held by most Oceanists. Recent research within Oceanic, however, suggests that patterns of regular penultimate-syllable stress are not as widespread throughout the family as was initially thought, and that certain interstage protolanguages need to be reconstructed with something other than regular penultimate-syllable stress and something other than the pattern exhibited by their daughter languages. By investigating stress patterns in a wide range of Oceanic languages, I show (i) that POC stress was probably assigned on the basis of moraic rather than syllabic trochees, with word-final closed syllables being treated as “heavy” and thus receiving primary stress, and (ii) that other modern patterns developed quite independently in a number of languages.

**1. INTRODUCTION.** Gallons of ink have been expended on reconstructing the phonemic system of Proto-Oceanic (POC) and tracing the development of that system from Proto-Austronesian (PAN), on whose phonemic system even more gallons have been used. But hardly a drop has there been on the accent or stress system of POC. Indeed, Ross (1998:18) states that “POC stress ... remains uninvestigated.”

This paper represents a preliminary investigation into the POC stress assignment regime and developments in some of its daughter languages. I will show that the fact that many Oceanic languages exhibit a penultimate-syllable stress system is not due to inheritance from a similar POC system, but rather to changes from an original system in which final closed syllables received primary stress. I will also try to explain how the different stress systems found in Oceanic languages may have developed from this proto-system.

- 
1. An earlier version of this paper was presented at the International Conference on Historical Linguistics XIV in Vancouver in August 1999. It is a pleasure to thank John Brownie, Ross Clark, Terry Crowley, Robert Early, Leslie Fast, Ray Harlow, Sue Jenkins, Ulrike Mosel, Eileen Nganga, and an anonymous reviewer for comments, for supplying data, or for answering specific queries. I have profited especially from numerous discussions on this topic with Bill Palmer and, via email, with Bob Blust, Ken Rehg, and Malcolm Ross, to whom I am most grateful. Needless to say, I alone am responsible for errors and misinterpretations.

**2. BACKGROUND.** Here I briefly outline the internal subgrouping of the Oceanic subgroup that I assume for this paper, and also summarize what has been said about Proto-Austronesian and Proto-Oceanic stress/accent.<sup>2</sup>

**2.1 OCEANIC SUBGROUPING.** The internal subgrouping of Oceanic is still under investigation. It is possible that there are as few as three first-order subgroups (see Lynch, Ross, and Crowley forthcoming):

1. Admiralties, a relatively small grouping of about thirty languages spoken on the island of Manus and adjacent offshore islands in the Admiralty Archipelago (Papua New Guinea). There are two subgroups:
  - (a) Western Admiralty, with just four languages (one now extinct).
  - (b) Eastern Admiralty, comprising the remaining languages.
2. Western Oceanic, about 200 languages in all, belonging to a number of subgroups located on the New Guinea mainland, New Britain, New Ireland, Bougainville, and the western part of Solomon Islands. Its first-order subgroups are:
  - (a) Sarmi/Jayapura, whose member languages are spoken in northeast Irian Jaya near the border with Papua New Guinea. (This subgroup may in fact turn out to be a member of the North New Guinea subgroup.)
  - (b) North New Guinea, located mainly along the north coast of Papua New Guinea and neighboring offshore islands.
  - (c) Papuan Tip, in the east and south of mainland Papua New Guinea and offshore islands.
  - (d) Meso-Melanesian, in New Britain, New Ireland, Bougainville, and the western Solomons.
3. Central-Eastern Oceanic. This is the least well defined of the subgroups, and it may in fact turn out that one or more of the five groups listed below is actually a first-order subgroup of Oceanic. The current view is that this subgroup has about 220 languages in all, covering the remainder of the Oceanic territory in the central and eastern Pacific, as follows:
  - (a) Southeast Solomons.
  - (b) Utupua-Vanikoro, located on the islands of Utupua and Vanikoro in the far southeast of Solomon Islands.
  - (c) Southern Oceanic, comprising the languages of Vanuatu and New Caledonia.
  - (d) Central Pacific, consisting of the languages of Fiji, Rotuma, and Polynesia (including Polynesian Outliers spoken in Melanesia and Micronesia).
  - (e) Micronesian.

---

2. The term "accent" is generally taken to include a number of simultaneous components, including stress, length, and pitch. While a few treatments of Oceanic languages include a fairly full discussion of accent in this more complete sense, most deal only with the placement of stress. Thus, while I will from time to time refer to the stress/accent system, I will perforce be dealing mainly with stress.

In addition, one or both of the Yapese language (Yap, Micronesia) and the St. Matthias family of two languages (near New Ireland) may prove to be first-order subgroups of Oceanic, or may instead group with the Admiralties family.

**2.2 PROTO-AUSTRONESIAN STRESS/ACCENT.** Before embarking on the reconstruction of Proto-Oceanic stress assignment, it is appropriate to look at studies of stress/accent in POC's ultimate ancestor, Proto-Austronesian. The most recent treatments of PAN stress or accent of which I am aware are Zorc (1978, 1993), Ross (1992:47-54), Wolff (1993), and Blust (1997). These deal mainly with contrastive word-stress in the Philippine and Formosan languages and with whether conclusions drawn from the reconstruction of stress in those subgroups can be applied to Proto-Austronesian.

Proto-Philippines (PPH) probably had contrastive accent. Zorc (1978:71) says of Philippine languages that "vowel length (or shortness) is clearly the most predominant feature [of accent] at the word level. Stress is usually predictable depending on the length or shortness of the penult vowel." He thus reconstructs PPH as having had contrastive accent, as follows: (i) some words are paroxytones, with a long penultimate vowel and with stress occurring on that vowel; (ii) others are oxytones, with a short penultimate vowel and with stress on the final syllable. This contrast is reflected in pairs like Bikol /'ba:ga/ 'embers' vs. /ba'ga/ 'truly', Cebuano /'tu:bu/ 'pipe, tube' vs. /tu'bu/ 'sugarcane', or Ifugao /'qa:kup/ 'scoop with hands' vs. /qa'kup/ 'stone wall' (1978:71). Indeed, Zorc (1978:73) notes that "an impressive number of cognate forms are found in a sufficiently large number of genetically-diverse Philippine languages to ascribe vowel-length or its absence on the penult to Proto-Philippine." He maintains this position in his later paper, listing in order of importance length, pitch, and stress as the features of Philippine accent (Zorc 1993:18).

Ross (1992) attempted to link the accent patterns of PPH with those of the Formosan languages, and to generalize from there to a Proto-Austronesian pattern: "Although there is no Formosan language [that] corresponds in a completely systematic manner with the oxytone/paroxytone contrast of PPH, there are indicators in Formosan languages that such a contrast *is* reconstructable for PAN and is fragmentarily reflected in these languages." Ross then presents evidence from the Budai dialect of the Formosan language Rukai that he believes backs up this view. A comparison between Budai and PPH shows that "Budai oxytones generally correspond with PPH oxytones and, conversely, that PPH paroxytones correspond only with Budai paroxytones" (Ross 1992:51); and he concludes that "the oxytones of Budai are apparently the last remnants of PAN contrastive stress" (1992:50).

While Wolff concurs with Zorc that "the contrast [in Philippine languages] consists of vowel length in most cases, and stress is predictable in terms of the length," he also (like Ross) generalizes this to the highest level: the Philippines "is the only area in which PAN root stress or length is currently still retained in attested languages" (1993:1).

Blust, however, disputes this view. Presenting counter evidence to Ross's claims (the details of which need not concern us here), he says (1997:402) that: "Ross's theory that Budai Rukai preserves PAN oxytonality on CVCVC stems, as inferred from PPH, yields a correct prediction in about 57% (20/35) of the cases, and an incorrect prediction in about 43%. It thus does not offer a serious alternative to independent development as an explanation for the agreements noted between Budai Rukai and Proto-Philippines." And he adds in a footnote (1997:402–403): "The slight margin in favor of a positive correlation between accent placement in [Budai Rukai] and PPH can be attributed to the greater proportion of oxytones in *both* languages. Whatever the ultimate explanation of dominant oxytonality turns out to be, it is clear that this fact alone would skew the cross-linguistic correlations toward greater positive results, whether or not there was a historical connection between the accentual systems compared." Ross (pers. comm.) now tends to agree with Blust's criticisms.

Where does this leave us with a characterization of PAN stress/accent? There appears to be no generally held view on this. In noting the diversity of accentual systems among Austronesian languages, Zorc (1993:22) says that it would be "prudent to assume that PAN had a complex accentual system [that] gave birth to the diversity found throughout the modern family." This is not very specific—though he does suggest that "projecting most of the accent patterns establishable for PPH to PAN leaves fewer residual problems" (1993:23). Thus it may be that PAN had a Philippine-type system, or it may be that it had some other system: it is unclear at this stage of research.

In attempting to reconstruct the stress regime of one of PAN's daughter languages, therefore, we have no "original" system to which we can refer, or from which we can postulate change or development. Thus the hypothesis that I outline in this paper is of necessity a bottom-up one only, with no top-down input.

**2.3 PROTO-OCEANIC STRESS/ACCENT.** Until about twenty years or so ago, it was assumed that POC regularly lost the final consonants of PAN roots (or else supported them with echo-vowels). However, in the last two decades, as more and more research has been done on Melanesian languages, it has become clear that POC regularly retained PAN final consonants. "POC words were made up of (C)V syllables, with the option of a word-final consonant. These word-final consonants are lost in the majority of Oceanic languages, but are retained in a scattering of Western Oceanic languages, in Mussau, and in some cases in South[ern] Vanuatu and New Caledonian languages. ... POC vowel sequences have, to my knowledge, never been systematically investigated, but they seem not to have been particularly common. A check of several geographically and genetically well distributed languages that are otherwise phonologically conservative reveals a consistency that probably reflects the POC pattern, namely that each vowel in a sequence is the nucleus of a separate syllable. Although some Oceanic languages contrast long vowels with short or contrast a sequence of two identical vowels with a single

vowel, this kind of contrast is not reconstructed for POC, where only sequences of unlike vowels were permitted” (Ross 1998:17).

After making the comment that POC stress “remains uninvestigated,” Ross (1998:18) went on to say that “phonologically conservative [Oceanic] languages generally agree in displaying primary stress on the penultimate syllable and secondary stress on every second syllable preceding the penultimate, and this was probably the basic POC pattern” (Ross 1998:18). I will refer to this as the “Received View”, which seems to be that POC stress assignment was based on right-aligned syllabic trochees, with CVC syllables being treated as “light” and primary stress assigned to the final foot.<sup>3</sup> I should note, however, that this hypothesis appears to be based on inspection rather than on the application of the comparative method.

If, therefore, we take the Received View of Proto-Oceanic stress as articulated by Ross and tacitly accepted by other Oceanists, and apply it to the structure of POC words as described above, then it seems clear that that view is that POC assigned stress on the basis of right-aligned *syllabic* trochees, with stress assigned to the penultimate syllable irrespective of the internal structure of syllables in the word. That is, POC had word types like those in (1), and the Received View would assign stress as indicated there:<sup>4</sup>

(1) Proto-Oceanic: Received View

FINAL OPEN SYLLABLES

...'(C)V.CV	*'təŋa	'basket, bag'
...'(C)V.V	*pa'nua	'inhabited area or territory, etc.'
	*ma'tau	'axe'
...(C)V.'V.CV	*ki'ajo	'outrigger boom'
	*pa'us-i	'weave, plait'

FINAL CLOSED SYLLABLES

...'(C)V.CVC	*'kiRam	'axe'
...(C)V.'V.CVC	*ma'osak	'ready to be eaten'
...'(C)V.VC	*pa'lau(r)	'go to sea'

I will argue later in this paper that this view is incorrect, and that the second group of words in (1), which have a final *closed* syllable, were in fact stressed on that final syllable.

- 
3. A trochee is a foot with initial prominence; syllabic stress “means that the foot template counts syllables, ignoring their internal structure” (Hayes 1995:63), while moraic stress counts moras, and thus distinguishes heavy and light syllables on the basis of their internal structure (Hayes 1995:69).
  4. I exclude the small number of words with medial consonant clusters, because these generally seem to involve productive or fossilized reduplication. POC reconstructions here and elsewhere in this paper are from various chapters in Ross, Pawley, and Osmond (1998), as are their reflexes in at least some languages.

Note that no monomorphemic etyma of the shape (C)VVCVV or (C)VVCVVC are given in (1). I have not been able to find any such forms in the literature. VV sequences, as Ross noted, are fairly rare in any case in POC, and it may be that there was a restriction prohibiting two or more VV sequences in a monomorphemic word.

**3. PROTO-OCEANIC STRESS REGIMES: A BRIEF SURVEY.** Before beginning a brief survey of stress in Oceanic languages, I must first of all point out that the available data can only be described as patchy. That is, for many Oceanic languages there is no published description, and for many others what is available is a fairly brief sketch. In addition, published data vary widely as to how much attention is paid to stress: some descriptions give a quite detailed coverage, some give a very brief outline, and some make no mention of stress at all (often saying that it is a “difficult” subject and will be left to “later research”—which does not always eventuate). Many of these sketches discuss primary stress but make no mention at all of the position of secondary stress; in addition, there may be differences in the rules assigning word-level stress/accent and phrase-level stress/accent in particular languages. I will generally ignore secondary stress throughout this paper, and will deal almost exclusively with word-level stress.

One has also to be a little concerned as to the accuracy of some of these published descriptions of stress assignment, particularly in cases where the description is relatively brief. Bickmore (1995), for example, draws attention to three descriptions of Tahitian by reputable linguists, all of which vary slightly in their accounts of stress, and proposes a fourth that is different again. I should point out here that these are not differences in terms of theoretical approaches: these are differences in terms of the *facts* of Tahitian stress. (And Tahitian is one of the better-described Oceanic languages!)

In this section, I try to briefly outline the stress assignment systems that are found in Oceanic languages, according to both the type of system involved and the subgroup affiliation of various languages.<sup>5</sup> The survey excludes very uncommon patterns, like regular antepenultimate stress in the Polynesian Outlier Ifira-Mele (Clark TOL), or languages like Takia (North New Guinea) where, although primary stress occurs by default on final syllable, it occurs on a nonfinal syllable if the vowel of that syllable is lower than the vowel(s) in syllable(s) following it (Ross TOL). I discuss the reconstruction of stress in two interstage languages in section 4 and in Proto-Oceanic itself in section 5.

**3.1 REGULAR PENULTIMATE-SYLLABLE STRESS.** There are a number of Oceanic languages that exhibit the same stress pattern as that described in the Received View: primary stress falls on the penultimate syllable. I ignore in this section languages that have regular penultimate stress but that do not allow codas or long vowels (because these cast no light on the hypothesis I will be advancing later in this paper), and deal only with languages that allow final closed syllables and in which stress is penultimate irrespective of whether the final syllable is open or closed.

5. Many of the languages mentioned in this section are the subjects of grammatical sketches in Lynch, Ross, and Crowley's forthcoming volume *The Oceanic languages*, and references to these are simply given with the name of the author followed by the abbreviation TOL. Note also that, although some of these sketches are based on original research, others are abstractions of some other scholar's research—in the latter case, both the TOL sketch and the original reference(s) are given.

This system is apparently found in Kuruti of the Admiralties (Bob Blust, pers. comm.). It is fairly rare in Western Oceanic, though it is exhibited in Tobati (Donohue TOL) of the Sarmi/Jayapura family, and also in Sudest (Anderson and Ross TOL) of the Papuan Tip linkage. It is, however, widespread in the Southern Oceanic linkage of the Central–Eastern Oceanic family, apparently being found in such languages as Mwotlap (Crowley TOL), Raga (Walsh 1966, Crowley TOL), Port Sandwich (Charpentier 1979, Crowley TOL), Vinmavis (Crowley TOL), Southeast Ambrym (Parker 1968, Crowley TOL), and Lamel (Early TOL), as well as all Southern Vanuatu languages.<sup>6</sup>

Let us take Sye (Erromangan) of Southern Vanuatu as typical of languages of this type (Crowley 1998:17). In Sye, the only permitted underlying vowel sequences are nonhigh vowel + high vowel, which Crowley treats as diphthongs. Primary stress is assigned to the penultimate syllable, whether or not that syllable is open or closed and whether or not it contains a diphthong. The examples in (2) illustrate this.<sup>7</sup>

## (2) Sye

...CV#	um <sup>1</sup> pelvi	‘whale’
	sesi <sup>1</sup> ma <sup>1</sup> nsi	‘index finger’
	yapemna <sup>1</sup> ruvo	‘if I had sung’
...CVG#	<sup>1</sup> nompwau	‘cloud’
	te <sup>1</sup> vayau	‘k.o. mat’
	o <sup>1</sup> renvau	‘cottonwood, <i>Hibiscus tiliaceus</i> ’
...CVC#	<sup>1</sup> nipmpenr	‘k.o. plant’
	na <sup>1</sup> lintoy	‘lobster’
	<sup>1</sup> itais	‘grandfather’

Vinmavis (Terry Crowley TOL, pers. comm.) presents a similar situation. Stress falls on the penultimate syllable, whether the final syllable is open or closed.

## (3) Vinmavis

...CV#		...CVC#	
ma <sup>1</sup> toro	‘old man’	<sup>1</sup> tuwan	‘some’
<sup>1</sup> nsuru	‘seven’	<sup>1</sup> sefax	‘one’
isete <sup>1</sup> risi	‘he didn’t cut’	ni <sup>1</sup> mpilah	‘coconut shell’
nempate <sup>1</sup> teli	‘axe’	noron <sup>1</sup> kulel	‘I can ...’

Vowel clusters, which are extremely rare in this language, are treated as two syllables:

## (4) Vinmavis

tu. <sup>1</sup> xe.i	‘long ago’
no. <sup>1</sup> xo.it	‘octopus’
naf. <sup>1</sup> hko.um	‘Tanna fruit dove’

6. I will show in section 4, however, that Proto–Southern Vanuatu had a different stress-assignment system from that of its daughter languages.

7. In the left-hand column in (2) below, VG = vowel + glide (from underlying /i/ or /u/).



**3.2 STRESS ON HEAVY FINAL FOOT.** There is a large number of Oceanic languages in which feet are formed at the right margin of the word, and where primary stress is trochaic and falls on the final syllable if it is “heavy,” but on the penultimate syllable if the final syllable is “light.” (C)V syllables are light, while (C)VC, (C)VV, and (C)V: syllables are heavy.<sup>8</sup> In discussing languages that fit this pattern, it will be useful to distinguish those that allow final closed syllables from those that do not.

**3.2.1 Languages allowing final closed syllables.** A wide range of languages allow final syllables to be either open or closed, and assign primary stress to the final syllable if it is heavy, otherwise to the penult. In the Western Oceanic linkage, we find this system in languages like Arop-Lokep (D’Jernes TOL) and Manam (Lichtenberk 1983) of the North New Guinea linkage;<sup>9</sup> Gapapaiwa (McGuckin TOL) of the Papuan Tip linkage; and Banoni (Lincoln 1976, Lynch and Ross TOL) of the Meso-Melanesian linkage. Among Central–Eastern Oceanic languages, we find this system mainly in languages of the Southern Oceanic linkage—for example, Tamambo (Jauncey 1997, TOL), and Proto–Southern Vanuatu (see 4.1).

I will illustrate this kind of language with data from Tamambo and Arop-Lokep. Tamambo syllables consist of a single vowel nucleus only; thus any VV cluster is treated as forming two syllables. Although “the vast majority of syllables in the language are open syllables of CV structure,” a syllable may be closed with a nasal (Jauncey 1997:32). Stress occurs on the final syllable if it is closed, otherwise on the penultimate syllable (Jauncey 1997:33–35). Thus:

(5) Tamambo				
mala'lum	'soft'	BUT	'sobe	'follow'
ka'mam	'we (exc.)'		ba'oti	'walk about'
ai'en	'here'		xi'nau	'something'
a'rua	'two'		avona'tuna	'his daughters'

In Arop-Lokep, “primary stress occurs on the penultimate syllable of most polysyllabic words.... In disyllabic words, certain heavy syllables (CVC and CVV) attract stress, so that the heavy syllable receives the stress rather than the penultimate” (D’Jernes TOL).<sup>10</sup> So, for example:

8. As I mentioned in 2.3, POc apparently did not have a vowel-length contrast. Oceanic languages that do have this contrast have developed it in some post-POc stage by a variety of mechanisms.

9. In Manam (Lichtenberk 1983:50ff), stress appears to be antepenultimate if the penultimate vowel is immediately preceded by another vowel; thus /mala'boŋ/ ‘flying-fox’, /si'ŋaba/ ‘bush’, but /moasi/ ‘song’, /naita/ ‘who?’.

10. It is not absolutely clear from D’Jernes’s sketch grammar (a) what she means by the phrase “certain heavy syllables” and (b) what the structure of the Arop-Lokep syllable is—i.e., whether a syllable may contain a VV cluster/diphthong. She does say, however, that “vowel sequences occur only in open syllables and across syllable breaks,” which suggests that some vowel clusters may form a single syllable peak, while others may form two syllables.

- (6) Arop-Lokep  
 da'dada 'illegitimate child' BUT ma'tuk 'coconut'  
 ga'unu 'dog' ka'pok 'my stomach'  
 mu'lu 'again' be'lei 'what?'

**3.2.2 Languages with only final open syllables.** Languages in this category have only open syllables, and assign primary stress to the penultimate syllable if the final vowel is short, or to the final syllable if its vowel is long or if it contains a vowel cluster.

The extant languages of the Western Admiralty family, Seimat, Wuvulu, and Aua (Blust 1996), fall into this category. Blust says of Wuvulu and Aua that primary stress in fact falls optionally on the initial or the penultimate syllable of tri-syllabic bases, but on the penult in others (Blust 1996:16). Surface final-syllable stress derives from an underlying penultimate geminate vowel cluster: for example, /kufu/ [gúfu] 'island' vs. /kufu-u/ [gufú] 'my kinsman'.

This pattern is also common among Western Oceanic languages—for example, Labu (Siegel 1984) of the North New Guinea linkage; Balawaia Sinagoro (Kolia 1975) and Tawala (Ezard 1997) of the Papuan Tip linkage; and Bali-Vitu (Ross TOL) and Sisiqa (Ross TOL) of the Meso-Melanesian linkage. Some Tawala examples (Ezard 1997:44) will illustrate this type of stress-assignment pattern. In Tawala, stress is on the penultimate vowel except if that vowel is the second vowel in a vowel cluster and is higher than the preceding vowel, in which case stress falls on the first vowel of the cluster.

- (7) Tawala  
 'bada 'man' meya'gai 'village'  
 te'wela 'child' 'kaoha 'joy'  
 kedu'luma 'woman'

This system is prototypical of the Central-Eastern Oceanic subgroup. It is reconstructed for Proto-Micronesian (Rehg 1993, and see 4.2) and probably can be reconstructed for Proto-Polynesian (Ross Clark, pers. comm.) and for Proto-Central Pacific, because Fijian languages (Geraghty TOL, Schütz 1985) also have such a system.<sup>11</sup> It is probably also reconstructible for Proto-Southeast Solomons, being found in languages like Gela (Crowley TOL), Arosi (Capell 1971, Lynch and Horoi TOL), and Longgu (Hill 1992, TOL). Buma (Tryon TOL) of the Utupua-Vanikoro family also has a system like this, though it is rare in the Southern Oceanic linkage, most of whose members either allow final closed syllables or have other stress patterns.

I will use Tahitian (Bickmore 1995) to illustrate the pattern in these languages. In words without vowel clusters, primary stress falls on the penult if the final vowel is short, but on the final syllable if it is long.

11. In a more recent study of Fijian accent, Schütz (1999) notes that Fijian has to be treated as having both bimoraic and trimoraic feet. This hypothesis may well have implications for the analysis of stress/accents in other Oceanic languages, but at this stage of research it is beyond the scope of this paper.

- (8) Tahitian
- |           |             |     |               |                |
|-----------|-------------|-----|---------------|----------------|
| 'mana     | 'power'     | BUT | ma'ro:        | 'dry'          |
| 'ma:ha    | 'satisfied' |     | para'ri:      | 'be shattered' |
| pu'rotu   | 'pretty'    |     | ta:ni:ni:'to: | 'be dizzy'     |
| fa'ra:ni  | 'French'    |     |               |                |
| tara'vana | 'crazy'     |     |               |                |

If a word ends in a VV sequence, then the first vowel of that sequence is stressed.

- (9) Tahitian
- |        |         |  |        |          |
|--------|---------|--|--------|----------|
| ho'roi | 'wash'  |  | ma'tie | 'green'  |
| pa'rau | 'speak' |  | me'tua | 'parent' |

If a VV sequence occurs elsewhere than word-finally, it is treated as a single syllable if the first vowel is more sonorous than the second, but otherwise as two syllables.<sup>12</sup> Thus:

- (10) Tahitian
- |           |                  |     |        |          |
|-----------|------------------|-----|--------|----------|
| 'ʔaeto    | 'eagle'          | BUT | ti'are | 'flower' |
| fa'raoa   | 'bread'          |     | mo'ana | 'ocean'  |
| ho:'poiʔa | 'responsibility' |     | ʔi'ore | 'rat'    |

**3.3 STRESS ON FINAL SYLLABLE.** In this section, I look at cases where primary stress is assigned to the final syllable irrespective of the nature of that syllable. Stress occurs without exception on the final syllable in at least one Admiralties language—Pak (Bob Blust, pers. comm.)—and in Western Oceanic languages like Kairiru (Wivell 1981, Ross TOL) and Jabêm (Dempwolff 1939, Ross TOL), both members of the North New Guinea linkage, and also Siar (Ross TOL), which is a member of the Meso-Melanesian linkage. Final stress is somewhat rarer in Central–Eastern Oceanic, but does occur in Sakao in northern Vanuatu (Guy 1974, Crowley TOL), as well as in Pohnpeian (Ponapean) and Marshallese among Micronesian languages (Rehg 1993). Some examples from Pohnpeian (Rehg 1993:29) with final open and closed syllables will illustrate this type.

- (11) Pohnpeian
- |             |                |  |               |           |
|-------------|----------------|--|---------------|-----------|
| mwe'nge     | 'eat'          |  | ara'mas       | 'person'  |
| ape're      | 'his shoulder' |  | menipi'nip    | 'thin'    |
| imwiseka'la | 'finished'     |  | dipwekele'kel | 'stumble' |

Kairiru is another language with final syllable stress. In Kairiru, VV sequences are rare except in word-final syllables, where they are treated as single syllables. Thus:

- (12) Kairiru
- |         |                   |  |          |                   |
|---------|-------------------|--|----------|-------------------|
| alsa'ri | 'she washed them' |  | wo'ñau   | 'dog'             |
| u'ru    | 'two'             |  | wusa'tai | 'how many?'       |
| qa'fɛŋ  | 'basket'          |  | tu'yieq  | 'we (incl. dual)' |
| a'tol   | 'egg'             |  | num'buon | 'yesterday'       |

12. The situation is a little more complex than this: see Bickmore (1995:413ff.). As far as sonority is concerned, *a* is more sonorous than *e* and *o*, which themselves are more sonorous than *i* and *u*.

**3.4 INITIAL STRESS.** A small number of Oceanic languages have word-initial stress. This occurs in a number of Meso-Melanesian languages, like Tungag (Lesley Fast, pers. comm.), Tängga (Bell 1977), and Taiof (Ross TOL). Within Central-Eastern Oceanic, word-initial stress is common only in the languages of New Caledonia (Southern Oceanic linkage)—for example, Iaaï (Ozanne-Rivierre 1976, Lynch TOL), Nyelâyu (Ozanne-Rivierre 1998), Xârâcùù (Moyse-Faurie 1995, Lynch TOL), Ajië (La Fontinelle 1976), and Tîrî (Osumi 1995)—and can probably be reconstructed for Proto-New Caledonian. Some Nyelâyu examples (Ozanne-Rivierre 1998:30) will illustrate this pattern:

(13) Nyelâyu			
'dau	'island'	'b <sup>w</sup> alagom	'marine eel'
'mālî	'bird'	'b <sup>w</sup> a:ole:	'eagle'
'da:lap	' <i>Erythrina</i> sp.'		

**3.5 HEAVY-OR-PERIPHERAL STRESS.** There are a number of languages of different subgroups that assign primary stress to a heavy syllable (i.e., CV: or CVV) if there is one, and to either the initial or final syllable if there is not. I will refer to this system as “heavy-or-peripheral,” with two subtypes as illustrated below.

**3.5.1 Heavy-or-initial.** In this subtype, stress occurs on a heavy syllable; if there is no heavy syllable, it occurs word-initially. Tigak (Jenkins 1998), a Western Oceanic language, has a system like this. Although Tigak allows closed syllables, codas play no role in assigning weight to syllables. Stress falls on a syllable containing a long vowel or a vowel cluster, otherwise on the initial syllable.<sup>13</sup>

(14) Tigak				
ta'pa:k	'leprosy'	BUT	'kutat	'prawn'
ku'ru:l	'complete'		'tîvu	'grandparent, grandchild'
sa'kai	'one'		'ulimuj	'whale'
ga'veak	'no'		'tapujan	'awake'
'pouak	'two'			
'baumlea	'big-man'			

Initial stress also occurs as the default pattern in the North New Guinea language Mangap-Mbula (Bugenhagen 1995), though only when all syllables are of the shape CV(C); in cases where the word contains one or more long vowels or vowel clusters, primary stress is assigned to the first of these. For example (Bugenhagen 1995:76ff.):

13. Beaumont (1979) says that Tigak has regular initial stress, but Jenkins's (1998) analysis suggests that this is an over-simplification. The situation in Tigak is a little more complex than presented here, with prefixation and reduplication providing some variation. I will ignore this here, however. The case of *baumlea* in (14) suggests that stress falls on the first heavy syllable if there is more than one in the word.

## (15) Mangap-Mbula

'abal	'mountain'	BUT	an'bo:bo	'I call'
'molo	'long'		ku'mbu:nu	'his/her leg'
'posopsop	'you are finishing'		iko'kou	'it is white'
'nakabasi	'axe'		anga'rau	'I approach'

**3.5.2 Heavy-or-final.** Yapese presents an interesting case. It has only closed final syllables in nonborrowed lexical morphemes, and it also has a phonemic vowel length contrast. Jensen (1977:92–94) says of stress in Yapese that it is generally on the final syllable. However, there are two cases where stress is penultimate: (i) when the penult is long and the vowel of the final syllable is short; and, quite strangely, (ii) where the final syllable is open and contains a long vowel—exclusively in borrowed words. (A word with a closed final syllable that has a long vowel has final stress.) Examples:<sup>14</sup>

## (16) Yapese

(i) ... V:CV(C)#	'sa:lap	'expert'
	'l'o:böt	'tangle'
(ii) ... V:#	'de:ŋki:	'electricity'
	'ba:te:	'kapok'
DEFAULT:	tɪ'biy	'to lift'
	ro'gon	'its way'
	m'ag'pa:ʔ	'wedding'
	mar'we:l	'work'
	da:'ŋa:y	'no, not'

If we ignore case (ii), which seems to apply only to loanwords, then we have in Yapese a situation that on the surface at least is similar to Proto-Philippines: final stress, unless the penult is long and the ultima is short, in which case, penultimate stress—contrast /'sa:lap/ 'expert' with /da:'ŋa:y/ 'no, not' in (16) above. Unlike Proto-Philippines, however, length is phonemic in Yapese—the short/long contrast can occur in any syllable, not just the penult. I discuss this further in section 5.

**3.6 THE ADMIRALTY LANGUAGES AND MUSSAU.** The languages of the Western Admiralties assign primary stress on the basis of right-aligned moraic trochees (see 3.2.2). The Eastern Admiralties and Mussau, however, present a more confusing picture.

**3.6.1 The Eastern Admiralties.** As far as the Eastern Admiralties are concerned, we do not have a great deal of information, and what there is is a little confusing. The only full-fledged published grammar of an Eastern Admiralties language is one of Loniu. In that language, “stress does not appear to be a lexically differential feature.... It is either penultimate or final, but varies or shifts according

14. The apostrophe after a consonant indicates contrastive glottalization: e.g., glottalized /m'/ contrasts with simple /m/.

to the structure of the phrase or clause in which the word appears. No rules have as yet been discovered for the determination of stress placement. ... Syllable structure does not seem to determine stress placement" (Hamel 1994:23). So there are cases of both penultimate and final stress on both disyllables and trisyllables, irrespective of whether the final syllable is open or closed (Hamel 1994:24):

(17) Loniu	PENULTIMATE STRESS	FINAL STRESS
(C)V.CV	'ahi 'step on'	e'ku 'pile up'
(C)V.CVC	'čahow 'appear'	pi'hin 'woman'
(C)V.CV.CV	ma'ŋawe 'clear'	tama'na 'dance'
(C)V.CV.CVC	ma'pitan 'raw'	cele'wan 'many'

There are also a dozen or so words with a lengthened stressed penult—like /ma:sih/ 'all', /pi:ʔen/ 'white', and /i:nen/ 'small'—though vowel length is apparently not a common feature in this language.

The only other Eastern Admiralty language for which we have a reasonable description is Kele (Ross TOL). There is some question as to how stress works in Kele, part of the problem being the quality of the transcriptions in the major sources Ross relies on (Smythe 1958a, 1958b). The most common patterns are final stress, except in cases where the penultimate vowel is long, in which case it is stressed:

(18) Kele				
(C)V.'CV(C)	pi'hin	'woman'	te'he	'fill'
(C)VC.'CV(C)	ar'wan	'blue'	pus'kon	'dry'
'(C)V:CV(C)	'pi:ron	'heavy'	'ka:nuw	'main rafter'

There are a few cases of '(C)VC.CVC, but these are probably compounds with stress on the first element; thus /'den-ŋoy/ 'snot = feces-nose'.

It is unclear from Ross's sketch—and this is in part due to the transcription quality of the data—whether length is predictable (occurring on the unpredictably stressed penultimate vowel), or whether stress is predictable but length is not. Ross leans to the latter interpretation, and I tend to agree. However, the quality of the data are such that we can probably not base any argument on Kele.<sup>15</sup>

Bob Blust (pers. comm.), who has carried out linguistic survey work in the Admiralty Islands, informs me that he is not aware of any Admiralties language with phonemic stress. He also comments that, while for some Eastern Admiralty languages (like Pak) he recorded regular final stress, and for others (like Kuruti) regular penultimate stress, and for yet others (like Bipi) he recorded what appeared to be variable final or penultimate stress. His vocabulary of Lou includes a brief discussion of stress (Blust 1998a:57): "In citation forms, primary stress generally was recorded on the final syllable peak. However, in a number of cases I also recorded penultimate stress. It is possible that the former is an emphatic pattern, characteristic of forms offered in isolation, while the latter is more typical of forms in sentence context, but this remains speculative."

15. However, one cannot help observing the close similarity between the Kele system as described here and that of Proto-Philippines described earlier.

John Brownie (pers. comm.) contradicts Blust in suggesting that stress in Kuruti is on the final rather than the penultimate syllable. He also provides the following additional data: (i) Khehek (Levei-Ndrehet): stress falls on a long vowel (presumably there may be no more than one in a word), otherwise on the final syllable unless any preceding syllable has a lower vowel, in which case stress falls on that vowel. (ii) Lele: stress is “unpredictable on a purely phonological basis.” (iii) Lindrou (Nyindrou): stress falls on the initial syllable; if a root has prefixes, stress falls on the first syllable of the root. It is clear from all of this that further research is needed to clarify the stress-assignment rules in the Admiralty languages.

**3.6.2 Mussau.** Two sources on Mussau (Blust 1984, Ross TOL) present slightly different information, which may represent different dialects. Blust (1984:173) says that “in the great majority of cases primary stress was recorded on the penultimate vocoid,” and he gives examples such as those in (19). He notes, however, pairs like those in (20) and concludes that stress is assigned to the penultimate mora.

- (19) Mussau  
       ['rame]                'chew'  
       [ta'liŋa]            'ear'  
       [ramuramu'tipa]    'tongue'

- (20) Mussau  
       ['bao]    'carry pick-a-back'                ['mao]    'heal'  
       [ba'o:]    'rain'                                ['ma:o]    'boil, abscess'

Ross, however, says that although stress occurs on the penultimate vowel in the majority of words, it is antepenultimate in others. “When the history of these words [with antepenultimate stress] is examined, it turns out that they ended in a consonant in POC and ... that an echo vowel has been added, repeating the vowel before the erstwhile final consonant.” For example:

- |      |         |           |            |
|------|---------|-----------|------------|
| (21) | POC     | MUSSAU    |            |
|      | *padran | 'aranna   | 'pandanus' |
|      | *panas  | 'anasa    | 'hot'      |
|      | *kauR   | 'kauru    | 'bamboo'   |
|      | *onom   | ga-'onomo | 'six'      |
|      | *pulan  | 'ulena    | 'moon'     |
|      | *ranum  | 'rarumu   | 'liquid'   |

Again, further research is probably needed here to establish what the stress pattern actually is.

**3.7 SUMMARY.** This brief survey has shown quite a diversity of stress-assignment regimes within the Oceanic subgroup. Although the commonest patterns seem to be right-aligned trochees, whether moraic or syllabic, other patterns occur with some frequency. In addition, it is clear that this diversity extends to lower-order subgroups of Oceanic. For example, within the Western Oceanic linkage we find languages with final stress, languages with stress on the penultimate syllable, languages with stress on

the penultimate mora, languages with initial stress, and languages with heavy-or-peripheral stress. We cannot, therefore, merely go on the basis of frequency and reconstruct for Proto-Oceanic the commonest system. First, it is not clear what the commonest system is, because the data are relatively sparse. And second, there is no *a priori* reason why the commonest system should be the original one.

I therefore propose to proceed as follows. In section 4 I will investigate in some detail two lower-order protolanguages where stress has been reconstructed, and where the reconstructed stress assignment system is different from that of at least some of the daughter languages. In section 5 I will suggest that primary stress in Proto-Oceanic was assigned to the final syllable if it was closed (otherwise to the penultimate syllable), and in section 6 will suggest hypotheses as to how other systems might have developed.

**4. TWO CASE STUDIES.** Before moving to Proto-Oceanic itself, I want to look at two lower-level protolanguages—Proto-Southern Vanuatu (PSV) and Proto-Micronesian (PMC). These are of interest because the stress regime that must be reconstructed is not the same system that operates in (all or some of) the modern languages.

**4.1 PROTO-SOUTHERN VANUATU.** As I noted at the beginning of this paper, it has generally been assumed that Proto-Oceanic had regular penultimate-syllable stress. I must admit to having shared this assumption until recently. What caused me to question it, and to begin a detailed examination of stress in Oceanic languages, was the investigation of vowel deletion in the languages of Southern Vanuatu and the reconstruction for Proto-Southern Vanuatu of a stress assignment system based on the nature of the final syllable of the word, despite the fact that the modern languages all assign primary stress to the penultimate (underlying) syllable.<sup>16</sup>

The languages I am concerned with here are spoken on the islands of Erromango, Tanna, and Aneityum in the south of Vanuatu. In all of these modern languages, primary stress occurs regularly on the penultimate syllable. However, it is final in the languages of Tanna and Aneityum if that syllable contains a surface long vowel (orthographically and underlyingly a geminate cluster), though not if it contains a rising or falling diphthong. In particular—and this is relevant to the later discussion—whether the final syllable is open or closed has no effect on the placement of stress. Examples from Sye were given in (2) above. Below are similar examples from Lenakel, one of the Tanna languages, and Anejoŋm̄, the only language of Aneityum.

---

16. The Southern Vanuatu languages are a family within the Southern Oceanic linkage of Central-Eastern Oceanic.



## (22) Penultimate stress

	LENAKEL		ANEJOŨ	
...CV#	kə'laka	'k.o. yam'	'opra	'long'
	nar'pisu	'mourning'	in'yeθo	'rat'
...CVG#	'nakau	'rib'	'eytai	'see'
	ol'keikei	'want'	a'yalou	'to lever'
...CVC#	'netək	'sorcery'	'ayray	'crawl'
	ar'kanpus	'to shade'	in'yowoj	'hook'
...CVV#	m'ea'm'ea	'ant'	ne'roa	'gardenia'
	sə'toa	'store'	naθ'rao	'blowhole'

## (23) Final stress

	LENAKEL		ANEJOŨ	
...CV:#	[rare —solely in interjections?]		ihn'ii	'finish'
			jek'naa	'these'
...CV:C#	kə'paas	'axe'	an'liin	'inside it'
	nau'niin	'end'	θuuk'θuuk	'squeak'

The Southern Vanuatu languages are notable for both accretions to and deletions from POC roots. Accretions include an initial vowel (probably originally \*a) added to most verbs, and an initial *n*(V), sometimes *in* in AnejoŨ, from the POC common article \*na added to most nonhuman nouns. POC vowels in absolute word-final position are deleted, as are certain POC medial vowels that will be discussed below; the medial vowel deletion rule applied historically before final vowel deletion. Some Lenakel and AnejoŨ examples will illustrate this. POC forms are given with the additional nominal or verbal accretion.

(24) POC	LENAKEL	ANEJOŨ	
*na li'ma-ña	'nelmən	'nijman	'his hand'
*na taliŋa-gu	-'telŋok	in'tijŋak	'my ear'
*a to'ka	'arək	'ateγ	'stay'
*a pa'usi	'owh	'ahoθ	'plait' <sup>17</sup>

Under the assumption that at least words with final short open syllables had penultimate syllable stress in Proto–Southern Vanuatu—which they do in all modern Southern Vanuatu languages and which has been posited for POC—the deleted medial vowel in these words is the original antepenultimate vowel, which would have been in the syllable preceding the primary stress—indeed, in an unstressed syllable between a secondary- and a primary-stressed one. So the derivation of the first example in (24) above would have been as follows, with primary stress marked at all stages.<sup>18</sup>

17. AnejoŨ *h* derives from \*p; Lenakel *w* may derive either from \*p or \*u.

18. Pre-Proto–Southern Vanuatu forms consist of Proto-Oceanic roots with the accreted vowel (in verbs) or article (in nouns) as discussed above. The Pre-Deletion rules that raise \*a before \*Ci and that palatalize \*l in AnejoŨ before \*i must be ordered before the vowel deletion rules, because the \*i that conditions both of these changes is subsequently deleted.

(25)		LENAKEL	ANEJOŃ
	PRE-PROTO-SOUTHERN VANUATU	*na li'ma-ña	*na li'ma-ña
	PRE-DELETION RULES	neli'mana	niji'mana
	MEDIAL PRETONIC V DELETION	nel'mana	nij'mana
	FINAL V DELETION	'nelman	'nijman
	OTHER RULES	'nelmən	—

However, there is a second set of forms in which the vowel of the *penultimate* syllable of the POC root is deleted. All of these cases involve POC roots that ended in final consonants. Now if this penultimate vowel was stressed, there is little phonetic motivation for its deletion. If, however, the *final closed syllable* was stressed, then the penultimate vowel was both unstressed and pretonic—the same features that precipitated vowel deletion in cases like (24) and (25). Some examples follow, with the proposed final stress marked. I include in (26) data from Sye as well as from Lenakel and AnejoŃ.<sup>19</sup>

(26)	POC	SYE	LENAKEL	ANEJOŃ
	*a ma'taq	'emte	'amra	'raw'
	*a bu'lut	'amplet	a'p'uit	'stick to'
	*a ti'kon		'askən	'walk with crutch'
	*a ka'ris			'ayreθ
	*a li'kos	'elki		'ajye-i
	*na ta'wan			'netva
	*na la'waq			'nilva
	*na ku'rat	'noyrat		'spider(web)'
	*na pa'raq	'nevre		'k.o. tree, <i>Morinda</i> sp.'
				'sprouting coconut'

The derivation of the forms for 'raw' above is illustrated in (27).

(27)		SYE	LENAKEL
	PRE-PROTO-SOUTHERN VANUATU	*a ma'taq	*a ma'taq
	PRE-DELETION RULES	ema'taq	ama'raq
	MEDIAL PRETONIC V DELETION	em'taq	am'raq
	FINAL V DELETION	—	—
	OTHER RULES	'emte	'amra

On the basis of these data, it appears necessary to reconstruct Proto-Southern Vanuatu as having had final stress if the final syllable was closed, and penultimate stress if the final syllable was open. That is, stress was assigned on the basis of right-aligned *moraic*, not syllabic, trochees, with final VC forming two moras.

If this is correct, we need then to describe how the modern system developed—this modern system being one in which stress can be viewed either as being assigned on the basis of syllabic trochees, or else as being moraic with the final consonant either being weightless or extrametrical. Below I examine different

19. Blanks in the data in (26) indicate either that there is no cognate form, or that the language concerned has irregularly lost the final VC in this item and thus that other rules apply. Note also that POC \*q is regularly lost, but by a rule that applied *after* the Final Vowel Deletion rule; i.e., final \*V > Ø, but final \*Vq > V.

types of syllable structure in PSV, and their expected and actual outcomes in modern languages (using Anejoṃ as a representative). I use the symbol Q to represent a word-final consonant that was lost only *after* the final vowel loss rule had ceased to operate, and that thus protected a preceding vowel from deletion.<sup>20</sup> The different types are as follows (examples are given in table 1):

- (a) verbs whose roots ended in vowels and that take the transitive suffix *-i*,
- (b) roots with final open syllables,
- (c) roots with final closed syllables (but not closed by Q),
- (d) verbs whose roots ended in a consonant and that take the transitive suffix *-i*, and
- (e) roots ending in Q.

TABLE 1. DERIVATION OF STRESS TYPES IN S. VANUATU

	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E
PRE-PROTO-S. VANUATU	*a ki'ta-i	*a ka'raka	*a la'b*at	*a pu'nuq-i	*na la'waq
PRE-DELETION RULES	eki'ta-i	aka'raka	ala'b*as	apu'nuq-i	nela'waq
MEDIAL VOWEL DELETION	ek'ta-i	ak'raka	al'b*as	ap'nuq-i	nel'waq
FINAL VOWEL DELETION	—	ak'rak	—	—	—
Q-DELETION	—	—	—	ap'nu-i	nel'wa
POST-DELETION RULES	'eyta-i	ay'ray	al'p*as	ih'ni-i	'nilva
ACTUAL FORM	'eytai	'ayray	'alp*as	ih'nii	'nilva
	'stick to'	'crawl'	'big'	'finish'	'spider(web)'

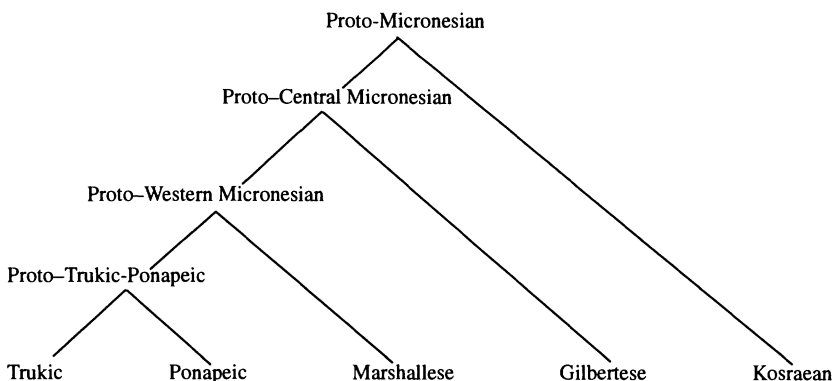
The Post-Deletion rules include a rule that shifts stress to the penultimate syllable when a word no longer ends in a consonant—that is, this rule maintains the ...'CVC(C)V# pattern.

With two of these five types of words, (b) and (c), the set of rules as ordered above would have produced an incorrect output in terms of stress placement. These are forms that retain the POC final consonant. The proportion of these forms is quite small, and it is likely that, under analogy with the predominant pattern of penultimate syllable stress, these forms too underwent a stress shift rule moving primary stress onto the penultimate syllable.

**4.2 PROTO-MICRONESIAN.** In an insightful paper, Ken Rehg (1993) reconstructs the stress and pitch system of Proto-Micronesian. The situation he deals with there is different from the one I have just discussed, in the sense that different Micronesian languages have different stress-assignment regimes. I summarize his argument below (ignoring for the purposes of this paper his analysis of pitch). The subgrouping of Micronesian given in figure 1 follows Rehg (1993:27).<sup>21</sup>

20. This consonant was most frequently \*q; however, there are cases of final \*R and \*k, and occasionally other consonants, that also fit into this category.

FIGURE 1. MICRONESIAN SUBGROUPING



Rehg surveys stress-assignment in terminal prosodic contours in a number of modern Micronesian languages. In some of these languages, either the descriptions are such that one is unable to discern the assignment rules (e.g., Ulithian), or else those describing these languages have stated that stress appears to be assigned relatively evenly across a word or phrase (e.g., Woleaian or Kosraean). Table 2 shows, in slightly different format, the results of his survey (1993:35) of surface representations of stress in a number of Micronesian languages that distinguish stress.<sup>22</sup>

Now, although Proto-Micronesian had only open syllables, the Micronesian languages listed above have all undergone some kind of lenition of final PMC vowels—devoicing, shortening of long vowels, or loss. Table 3 is a representation of “probable earlier patterns of stress” that have been reconstructed “by (1) removing the effects of final vowel lenition and (2) imposing patterns of stress ... on the resulting forms” (Rehg 1993:36).

On the basis of this, Rehg reconstructs Proto-Micronesian stress as based on moraic trochees: that is, primary stress fell on the penultimate syllable if the final vowel was short, and on the final syllable if its vowel was long. Only Pulo Annian does not fit this pattern, and he feels that its “exceptionality ... may simply be an artifact of the problems associated with analyzing pitch and stress in this language” (Rehg 1993:36) discussed earlier in his paper.

21. The status of Nauruan—whether a descendant or a sister-language of Proto-Micronesian—is still under investigation, but is not relevant to this discussion.

22. Pulo Annian and Puluwat are Trukic languages, Pohnpeian is a Ponapeic language. Following Rehg, S<sub>0</sub> = any number of segments (including zero), V̥ = short voiceless vowel, V = short voiced vowel, VV = long vowel, (V) = vowel subject to deletion under certain conditions, G = glide, and ] = end of terminal prosodic contour.

**TABLE 2. STRESS IN MICRONESIAN LANGUAGES**

	PMC FINAL SHORT VOWEL	PMC FINAL LONG VOWEL
PULO ANNIAN	S <sub>0</sub> <sup>1</sup> VCVCV <sub>0</sub> ]	S <sub>0</sub> <sup>1</sup> VCVV <sub>0</sub> ]
PULUWAT	?	S <sub>0</sub> V <sup>1</sup> CV]
POHNPEIAN	S <sub>0</sub> V <sup>1</sup> CVC]	S <sub>0</sub> V <sup>1</sup> CV]
MARSHALLESE	S <sub>0</sub> V <sup>1</sup> CVC]	S <sub>0</sub> V <sup>1</sup> CV]
GILBERTESE	S <sub>0</sub> V <sup>1</sup> CVC(V)]	S <sub>0</sub> V <sup>1</sup> CV(V)]

**TABLE 3. RECONSTRUCTED STRESS PATTERNS**

	PMC FINAL SHORT VOWEL	PMC FINAL LONG VOWEL
PULO ANNIAN	S <sub>0</sub> <sup>1</sup> VCVCV]	S <sub>0</sub> <sup>1</sup> VCVV]
PULUWAT	?	S <sub>0</sub> V <sup>1</sup> CVV]
POHNPEIAN	S <sub>0</sub> V <sup>1</sup> CVCV]	S <sub>0</sub> V <sup>1</sup> CVV]
MARSHALLESE	S <sub>0</sub> V <sup>1</sup> CVCV]	S <sub>0</sub> V <sup>1</sup> CV(G)V]
GILBERTESE	S <sub>0</sub> V <sup>1</sup> CVCV]	S <sub>0</sub> V <sup>1</sup> CVV]

**5. PROTO-OCEANIC STRESS.** This discussion of Proto–Southern Vanuatu and Proto-Micronesian stress is of relevance to the broader topic of Proto-Oceanic stress in a number of ways. First, it shows that modern languages may not reflect the ancestral system, as a result of either changes in syllable or word structure or changes in the actual stress-assignment system itself, or both. Second, it appears to suggest a system based on moraic trochees as having at least some antiquity, and from which different systems have developed. In this section I will advance the hypothesis that POC assigned stress on the basis of moraic rather than syllabic trochees, with a consonantal coda counting as heavy.

I mentioned in 2.3 that the Received View of Proto-Oceanic stress is that primary stress was in all cases assigned to the penultimate syllable. Rehg's (1993) reconstruction of Proto-Micronesian as having stress assigned on the basis of right-aligned moraic trochees, with primary stress on the rightmost foot, was discussed in 4.2. The Proto-Polynesian (PPN) and Proto-Central Pacific (PCP) systems were probably similar. But there has been little other work in reconstructing stress in Oceanic interstage protolanguages. And indeed languages like PMC, PCP and PPN may not be particularly helpful in the reconstruction of POC stress, because they have made one crucial change: they have lost all word-final consonants in absolute word-final position.

The reason I say that these languages may not be particularly helpful is that they are potentially ambiguous as to whether the trochaic stress regime is syllabic or moraic. It is possible to treat vowel clusters and long vowels as consisting of either one or two underlying syllables, as discussion in earlier sections of this paper has shown. Thus the surface stress patterns on the left in (28) below have two possible interpretations:

(28) SURFACE	SYLLABIC TROCHEES	MORAIC TROCHEES
'CVCV	'CV.CV	'CV.CV
CV'CVV	CV.'CV.V	CV.'CVV
CV'CV:	CV.'CV.V	CV.'CV:

There is also a problem with those languages that have retained POC final consonants but that support them with a paragogic vowel (often referred to as an “echo-vowel” in the Oceanic literature). The Bali dialect of Bali-Vitu (Ross TOL) is a case in point. In Bali, primary stress is assigned to the penultimate syllable. In words reflecting POC vowel-final etyma, it is not possible to decide whether we are dealing with syllabic or moraic trochees:

(29) POC	BALI	
*keli	'yeli	'dig'
*pasok-i	va'zoyi	'plant tuber'
*pisi	'vizi	'bind up'
*paqoRu	va'yoru	'new'

Where the POC etymon was consonant-final, Bali has added an echo-vowel, and stress also falls on the penultimate syllable:

(30) POC	BALI	
*Rumaq	ru'maka	'house'
*boRok	bo'roko	'pig'
*jalan	da'laŋa	'path'
*maosak	ma'zaka	'ready to be eaten'
*maquirip	mayu'ripi	'be alive'

Bali is now clearly a syllabic-stress language. It is possible that, in pre-Bali, the forms in (30) were originally stressed on the penultimate syllable (\*'rumak, \*'borok, etc.), and that this stress simply shifted one syllable to the right when the echo-vowel was added, to preserve the pattern of regular penultimate-syllable stress. It is, however, equally possible that in pre-Bali words like those in (30) were stressed on the final syllable (\*ru'mak, \*bo'rok, etc.), and that stress remained on this syllable—now the penultimate syllable and the penultimate mora—when the echo-vowel was added. Because of this ambiguity, languages of this type do not tell us very much about POC stress.

It therefore seems safest to investigate first those languages that are conservative in terms of their word structure—that is, those that regularly retain POC word-final consonants without supporting vowels. I will refer to such languages as “phonotactically conservative languages” (noting that in other respects—even in other phonotactic respects—they may not be conservative). The hypothesis I will advance here is as follows:

- (a) POC vowel sequences in which the first vowel was higher than the second counted as two syllables;
- (b) POC vowel sequences in which the first vowel was lower than the second were single-syllable diphthongs;
- (c) POC had a stress regime based on moraic trochees, in which diphthongs and closed syllables were heavy.

That is, I would propose that, instead of the stress assignments given in (1) above, the system was actually as follows:

(31) Proto-Oceanic: This Hypothesis

FINAL OPEN SYLLABLES

...(C)V.CV	*'taŋa	'basket, bag'
...(C)V.'CV.V	*pa'nua	'inhabited area or territory, etc.'
...(C)V.'CVV	*ma'tau	'axe'
...(C)V.'V.CV	*ki'ajo	'outrigger boom'
...(C)VV.CV	*'paus-i	'weave, plait'

FINAL CLOSED SYLLABLES

...(C)V.'CVC	*ki'Ram	'axe'
...(C)VV.'CVC	*mao'sak	'ready to be eaten'
...(C)V.'CVVC	*pa'lau(r)	'go to sea'

Phonotactically conservative languages generally seem to have this system. Proto-Southern Vanuatu, discussed in some detail in 4.1, is one. While the languages of Erromango tend to retain final stops but lose final nasals, and while Anejiom seems to retain only POC \*t with any regularity, the languages of Tanna seem to regularly retain all POC final consonants. Note in this context that even \*q was retained for some time after the operation of the vowel-deletion rules. Final vowels are lost in absolute final position. However, a vowel preceding word-final \*q was not lost, suggesting that \*q was retained until after the final vowel loss rule ceased to operate. Compare the following examples from Kwamera (Tanna).

(32) POC	Kwamera		POC	Kwamera
*rua	ka/ru	'two'	BUT	*tanoq təna 'earth'
*mate	mas	'die'		*mataq a/mera 'raw'
*kutu	ur	'louse'		*tubuq ru pu 'swell up'

As established in 4.1, Proto-Southern Vanuatu stressed the penultimate mora of a word.

I quoted Ross (1998:17) earlier as saying that POC word-final consonants are retained in a "scattering of Western Oceanic languages [and] in Mussau," as well as in Southern Vanuatu. A number of these languages support this consonant with an echo-vowel, however, and are excluded from discussion in this section. Among those that retain that consonant without vocalic support are the North New Guinea linkage language Arop-Lokep as well as Tolai, Tigak, and Tungag of the Meso-Melanesian linkage.

Tolai is perhaps the best example of this "scattering" of Western Oceanic languages.<sup>23</sup> It retains POC final consonants, and also usually retains final vowels (though there are some cases of final vowel loss), as shown in (33).

23. Despite its prominence both demographically and in the linguistic literature, there is surprisingly little in the way of published material on Tolai phonology. I am indebted to Eileen Nga-nga, a native speaker of Tolai, for some of the information in this section.

(33)	POC	TOLAI
	RETAINED FINAL C	
	*bayat 'a fence'	bait 'enclose with a fence'
	*kiRam	riam 'axe' (metathesis)
	*tapal	taval 'substance used for blackening teeth'
	*kaur	kaur 'bamboo'
	*garamut	garamut 'slitgong'
	*madrar	madar 'ripe'
	RETAINED FINAL V	
	*(b,b <sup>w</sup> )ilo	bilō 'coconut shell cup'
	*koto	koto 'obsidian'
	*bara	ta/bara 'armlet'
	*quma	uma 'garden'
	*ku(p,p <sup>w</sup> )ena	ubene 'fish-net'
	LOST FINAL V	
	*pale	pal 'house'
	*piri	pir 'plait'
	*malo	mal ' <i>Broussonetia papyrifera</i> , loincloth'
	*tunu	tun 'roast'
	*suka 'make fire with fire plow'	uk 'bore through'

Tolai has a stress system based on moraic trochees:

(34)	TOLAI
	da'vai 'tree'
	bo'roi 'pig'
	di'at 'them'
	ta'kun 'accuse'
	ma'lana 'morning'
	i'bika ' <i>Abelmoschus manihot</i> , edible greens'
	bi'tona 'his/her navel'

There is rather less information available on Arop-Lokep, which, as I showed in 3.2.1, also assigns stress on the basis of moraic trochees. It does appear to retain some final consonants (POc \*kauR > *kaur* 'bamboo, flute', Proto-Western Oceanic \*qa[r,R]iŋ > *ailiŋ* > 'obsidian, razor'), though in one case at least (POc \*kaun > *gaunu* 'dog') with a supporting echo-vowel. POc final vowels seem to be fairly regularly lost (\*rua > *ru* 'two', \*tolu > *tol* 'three', \*tina-gu > *tina-k* 'my mother').

Tungag has apparently developed as a language with initial stress, and has thus made a significant change. Tigak, however, along with languages like Mangap-Mbula and Yapese, were described as heavy-or-peripheral languages, and these two in my view confirm the thesis that POc had the stress system I am proposing here. The reasoning is as follows.

Let us assume that languages like Tigak inherited the system I propose. As in a number of Oceanic languages (those of Southern Vanuatu, for example), final consonants later became unmarked for weight, so that words with simple final syllables would have been stressed on the penult. Words with complex final syllables—CV:(C) or CVV(C)—however, would have been stressed on that syllable.



Now, I noted in footnote 3 that POC probably did not have words with two complex syllables. Given that heavy syllables attracted stress, it may well be that a heavy syllable anywhere in the word attracted stress—that is, that syllable weight became more important than syllable order in the assignment of stress in languages like Tigak, Mangap-Mbula, Yapese, and New Zealand Māori.

On the basis of stress assignment in these phonotactically conservative languages from different subgroups, I propose that POC had a system based on right-aligned moraic trochees with primary stress assigned to the rightmost foot. I assume also that languages like those discussed in 3.2 that have right-aligned moraic trochees probably continue this original system.

**6. DEVELOPMENT OF OTHER SYSTEMS.** In this section, I briefly explain how other stress assignment systems may have developed.

**6.1 DEVELOPMENT OF PENULTIMATE SYLLABLE STRESS.** The development of regular penultimate syllable stress from the proposed POC system is not particularly problematic, especially in cases of languages that allow only open final syllables (i.e., those that have lost POC final consonants or support them with echo-vowels). Basically, where stress was previously assigned on the basis of feet consisting of two moras, it is now assigned on the basis of feet consisting of two syllables, irrespective of weight. As noted in section 3, some languages treat any vowel cluster as two syllables, others treat at least some vowel clusters as constituting a single syllable.

Kokota (Palmer TOL), a Meso-Melanesian language of Santa Isabel (Solomon Islands), is actually in the process of undergoing this change, and it is instructive to examine this in a little detail: “The regular stress assignment regime involves feet parsed from left to right, so stress is counted from the left margin of the root. Stress is trochaic, meaning that the first and every second subsequent syllable/mora is stressed. (The final syllable/mora in words with an odd number of syllables/moras is not stressed, however, because the final odd syllable/mora is not assigned to any foot.) Primary stress is assigned to the rightmost stressed syllable/mora” (Palmer TOL). Thus:

- (35) Kokota
- |         |          |             |            |
|---------|----------|-------------|------------|
| 'kame   | 'hand'   | dihu'nare   | 'be rough' |
| 'makasi | 'bonito' | para'hagala | 'giant'    |

There is evidence, however, of age variation, especially in words with one or more heavy syllables: older speakers tend to assign stress on the basis of moraic trochees, younger speakers on the basis of syllabic trochees. For example:

- (36) Kokota
- |          |          |             |
|----------|----------|-------------|
| OLDER    | YOUNGER  |             |
| ka'lae   | 'kalaē   | 'reef'      |
| naya'rai | 'nayarai | 'banyan'    |
| bae'hai  | 'baehai  | 'k.o. tree' |

However, there are also languages with regular penultimate syllable stress that do have final consonants, usually as the result of the loss of POC word-final vowels. Note the following from Mwotlap of Northern Vanuatu (Crowley TOL), which, like the Southern Vanuatu languages, shows partial accretion of the POC article \*na:

(37)	POC	MWOTLAP	
	*na patu	'ne-vet	'stone'
	*na tam <sup>w</sup> aqane	'na-tm <sup>w</sup> an	'man'
	*kamami	'kemem	'we (EXCL. PL)'
	*na kasupe	'na-γhow	'rat'
	*tolu	've/tel	'three'

These forms have the same stress pattern as words ending in open syllables:

(38)	POC	MWOTLAP	
	*kamiu	'kimi	'you (PL)'
	*rua	'vo/yo	'two'
	*sai	'i/he	'who?'
	*pai, *pia	'a/ve	'where?'

The explanation given in 4.1 that accounts for the reassignment of stress in the Southern Vanuatu languages may explain similar developments in languages like Mwotlap.

**6.2 DEVELOPMENT OF REGULAR FINAL STRESS.** The stress systems in languages with regular final-syllable stress may have developed differently in different languages. In 4.2 I noted that, while Proto-Micronesian stressed the penultimate mora, Micronesian languages like Pohnpeian and Marshallese have stress on the final syllable. This suggests that, after vowel lenition had operated, Pohnpeian and Marshallese simply left the stress where it was:

(39)	PMC	*S <sub>0</sub> V'CVCV	*S <sub>0</sub> V'CVV
	POHNPEIAN/MARSHALLESE	S <sub>0</sub> V'CVC	S <sub>0</sub> V'CV

A slightly different scenario is presented by Western Oceanic languages like Siar and Jabêm. These languages also have stress on the final syllable irrespective of its weight, and have lost POC word-final vowels. The vast majority of Siar words are consonant-final (Ross TOL), and these words could be analyzed either as being stressed on a heavy final syllable (moraic) or as retaining the original stress on what was the penultimate syllable. Similarly, the few words with final vowels (which are stressed) admit of the same explanation. Thus:

(40)	POC	SIAR	
	*ku'Rita	u'rit	'octopus'
	*qali'ŋa-ŋia	el'ŋen	'his voice'
	*tolu	i'tol	'three'
	*pa'pine	fa'in	'woman'
	*'rua	i'/ru	'two'

Jabêm (Ross 1988:132ff, 1993) is different from Siar in that final open syllables are much more frequent. Some POC final consonants are retained, but many are lost; and final vowels are also generally lost. Word-final consonants (whether as a result of retention or of vowel loss) undergo mergers (nonlabial voiced stops and nasals as  $\eta$ , nonlabial voiceless stops and fricatives as  $\text{ʔ}$ , which was then often lost). One result of all of these changes is a high proportion of monosyllabic reflexes of polysyllabic etyma, like those in (41).<sup>24</sup>

(41)	POC	JABÊM	
	*qe'nop	èʔ	'lie down'
	*ku'luR	ùʔ	'breadfruit'
	*ki'Ram	kí	'axe'
	*'kani	èŋ	'eat'

Where a reflex is polysyllabic, stress is always on the final syllable, whether open or closed:

(42)	POC	JABÊM	
	*le'jan	le'sèŋ	'nit'
	*ku'Rita	ku'líʔ	'octopus'
	*tapu'Riq	dà'ùʔ	'triton, conch shell'
	*ra'bia	la'bì	'sago'
	*ta'lise	ta'li	'k.o. tree, <i>Terminalia catappa</i> '

What appears to have happened in languages like Jabêm is this: (a) words that retained final consonants simply retained stress on the final syllable—e.g., \*le'jan > le'sèŋ; (b) words that lost final vowels or final syllables left the stress on the syllable on which it originally occurred—e.g., \*ku'Rita > ku'líʔ, \*ra'bia > la'bì, \*ta'lise > ta'li; (c) words in which the original stressed syllable was completely lost may have first lost the final consonant (shifting stress to the penult), then lost the final syllable, now conforming with pattern (b)—e.g., \*tapu'Riq > \*\*ta'puRi > dà'ùʔ.

**6.3 DEVELOPMENT OF INITIAL STRESS.** Word-initial stress is a feature of New Caledonian languages, whose closest relatives are the languages of the Southern Vanuatu family, where stress-assignment shifted from the penultimate mora to the penultimate syllable (4.1).

In most New Caledonian languages, there has been considerable erosion from the right, with the result that the majority of roots consist of only one or two syllables. If stress was assigned on the basis of syllabic trochees, primary stress would thus be on the initial syllable in nearly all words. It is quite possible that this was reinterpreted as initial- rather than penultimate-syllable stress, and generalized to the few roots that have more than two syllables.

**6.4 VOWEL LENGTH AND POC STRESS/ACCENT.** Schütz (1999:148) states the view that “the intricate relationship between vowel length and accent has

24. Jabêm has also developed tone, marked here by accents (´ = high, ` = low).

long been a stumbling block for the analysis of Fijian and Polynesian prosody,” and indeed the brief survey of PAN stress/accent in 2.2 would tend to confirm this as being a recurring problem area in Austronesian. But the problem has a number of dimensions, which I will refer to only briefly here and which, despite my gentle admonishment in section 3, I will leave to “later research.”

If Ross is correct in his assumption that POC did not distinguish vowel length, then this problem is not a specifically POC one in terms of reconstructing the POC stress system. However, if length was a major component of the PAN accent system, as outlined in 2.2, and if it was also a major component of the accent systems of some Oceanic interstage protolanguages, then an investigation of length and its relation to stress needs to be undertaken.

So, for example, one needs to be able to account for developments of the types illustrated by Yapese and Mangap-Mbula above. These two languages could be treated as partial mirror-images: Yapese has default stress on the final syllable unless a nonfinal syllable contains the only long vowel in the word, in which case it is stressed; while Mangap-Mbula has default stress on the initial syllable unless a noninitial syllable contains a long vowel, in which case the first (only one?) of these is stressed.<sup>25</sup> What appears to have happened in both these cases (and others similar to them), as I mentioned in section 5, is that vowel length has come to be a dominant feature of the accent system. The “rules” assigning stress in languages like these might be phrased as follows: (a) languages like Mangap-Mbula: assign stress to the leftmost syllable containing a long vowel; if there is none, assign stress to the first syllable; (b) languages like Yapese: assign stress to the rightmost syllable containing a long vowel; if there is none, assign stress to the last syllable. Note that rule (b) correctly assigns stress to Yapese words with two long vowels like /da:ˈŋa:y/ ‘no, not’, with one long vowel (compare /ˈsa:lap/ ‘expert’ with /mˈagˈpa:ʔ/ ‘wedding’), and with no long vowels like /roˈgon/ ‘its way’.

The problem alluded to by Schütz may probably be a lower-level one, restricted to certain subgroups (Central Pacific being one). However, I do not want to dismiss it out of hand. There are “intricate relationships” between length and stress—though perhaps of different kinds—in the languages I have just been talking about (Yapese and Mangap-Mbula), in the Admiralties, and in certain parts of the western Austronesian area. This relationship is one that requires much more detailed investigation.

**7. CONCLUSION.** As more information on the languages of Melanesia has become available, the original view that POC had a system whereby primary stress was assigned to the penultimate syllable of all words has had to be revised. Positing a POC system whereby stress is assigned to the penultimate mora not only accounts for the wide distribution of this system among modern languages in vir-

---

25. Kele may be of a type similar to Yapese, though we need more reliable data.

tually all major subgroups of Oceanic, but at the same time allows us to account in a natural way for the development of other stress regimes.

Given this, it would appear that languages of different subgroups that have changed to, say, final- or penultimate-syllable or heavy-or-peripheral stress have made these changes independently. Most of these changes, as we have seen, would have been motivated by some other phonotactic change in the language—loss or lenition of final vowels, or loss of final consonants—though these changes did not *necessarily* lead to changes in the stress-assignment system, or to the same changes. Jabêm and Pohnpeian, for example, lose final vowels and have final syllable stress; Southern Vanuatu languages lose final vowels and have penultimate syllable stress; while Arop-Lokep loses (at least some) final vowels but retains stress on the penultimate mora.

One major remaining problem concerns the Eastern Admiralty languages. The published descriptions of stress assignment in Loniu and Kele are not intuitively satisfying, and there are virtually no published *detailed* descriptions of the remaining languages of this subgroup. The discussion in 3.6 shows apparent variability within this family, and further research is needed on this topic. It is of particular importance because the Admiralty family is one of the three first-order branches of POc—or, if we are to follow Blust (1998b), one of only two first-order branches—and it would therefore be more than useful to know what the Proto-Admiralty stress regime was. In view of this, I feel that the proposal I am putting forward here—while I believe it to be correct—must remain tentative until such time as we have better data on stress in these languages.

## REFERENCES

- Beaumont, C. H. 1979. *The Tigak language of New Ireland*. Series B-58. Canberra: Pacific Linguistics.
- Bell, F. L. S. 1977. *Tangga-English English-Tangga dictionary*. Oceania Linguistic Monograph No. 21. Sydney: University of Sydney.
- Bickmore, Lee S. 1995. Refining and formalizing the Tahitian stress placement algorithm. *Oceanic Linguistics* 34:410–442.
- Blust, Robert. 1984. A Mussau vocabulary with phonological notes. Series A-69, 159–208. Canberra: Pacific Linguistics.
- . 1996. The linguistic position of the Western Islands, Papua New Guinea. In *Oceanic studies: Proceedings of the First International Conference on Oceanic Linguistics*, ed. by John Lynch and Fa'afo Pat, 1–46. Series C-133. Canberra: Pacific Linguistics.
- . 1997. Rukai stress revisited. *Oceanic Linguistics* 36:398–403.
- . 1998a. A Lou vocabulary, with phonological notes. Series A-92:35–99. Canberra: Pacific Linguistics.
- . 1998b. A note on higher-order subgroups in Oceanic. *Oceanic Linguistics* 37:182–188.
- Bugenhagen, Robert D. 1995. *A grammar of Mangap-Mbula: An Austronesian language of Papua New Guinea*. Series C-101. Canberra: Pacific Linguistics.
- Capell, Arthur. 1971. *Arosi grammar*. Series B-20. Canberra: Pacific Linguistics.

- Charpentier, Jean-Michel. 1979. *La langue de Port-Sandwich (Nouvelles-Hébrides). Langues et Civilisations à Tradition Orale* 34. Paris: SELAF.
- Crowley, Terry. 1998. *An Erromangan (Sye) grammar*. Oceanic Linguistics Special Publication No. 27. Honolulu: University of Hawai'i Press.
- Dempwolff, Otto. 1939. *Grammatik der Jabêm-Sprache auf Neu Guinea*. Hamburg: Friederichsen, de Gruyter.
- Ezard, Bryan. 1997. *A grammar of Tawala, an Austronesian language of the Milne Bay area, Papua New Guinea*. Series C-137. Canberra: Pacific Linguistics.
- Guy, J. B. M. 1974. *A grammar of the northern dialect of Sakao*. Series B-33. Canberra: Pacific Linguistics.
- Hamel, Patricia J. 1994. *A grammar and lexicon of Loniu, Papua New Guinea*. Series C-103. Canberra: Pacific Linguistics.
- Hayes, Bruce. 1995. *Metrical stress theory: Principles and case studies*. Chicago: University of Chicago Press.
- Hill, Deborah. 1992. Longgu grammar. Ph. D. dissertation, Australian National University.
- Jauncey, Dorothy. 1997. *A grammar of Tamambo, the language of western Malo, Vanuatu*. Ph.D. dissertation, Australian National University.
- Jenkins, Sue. 1998. Aspects of Island Tigak phonology. Ms.
- Jensen, John Thayer. 1977. *Yapese reference grammar*. Honolulu: University of Hawai'i Press.
- Kolia, John. 1975. A Balawaia grammar sketch and vocabulary. In *Studies in languages of central and south-east Papua*, ed. by T. E. Dutton, 107–226. Series C-29. Canberra: Pacific Linguistics.
- La Fontinelle, Jacqueline de. 1976. *La langue de Houailou, Nouvelle-Calédonie: description phonologique et description syntaxique*. Paris: SELAF.
- Lichtenberk, Frantisek. 1983. *A grammar of Manam*. Oceanic Linguistics Special Publication No. 18. Honolulu: University of Hawai'i Press.
- Lincoln, Peter C. 1976. Describing Banoni, an Austronesian language of southeast Bougainville. Ph.D. dissertation, University of Hawai'i.
- Lynch, John. Forthcoming. *A grammar of Anejoñ*. Canberra: Pacific Linguistics.
- Lynch, John, Malcolm Ross, and Terry Crowley. Forthcoming. *The Oceanic languages*. London: Curzon Press.
- Moyse-Faurie, Claire. 1995. *Le xârâcùù: langue de Thio-Canala (Nouvelle-Calédonie) — Éléments de syntaxe*. SELAF: *Langues et Cultures du Pacifique* 10. Paris: Peeters.
- Osumi, Midori. 1995. *Tinrin grammar*. Oceanic Linguistics Special Publication No. 25. Honolulu: University of Hawai'i Press.
- Ozanne-Rivierre, Françoise. 1976. *Le iaai: langue mélanésienne d'Ouvéa (Nouvelle-Calédonie)*. *Langues et Civilisations à Tradition Orale* 20. Paris: SELAF.
- . 1998. *Le nyelâyu de Balade (Nouvelle-Calédonie)*. Paris: Peeters.
- Parker, G. J. 1968. Southeast Ambrym phonology. *Oceanic Linguistics* 7:81–91.
- Rehg, Kenneth L. 1993. Proto-Micronesian prosody. In *Tonality in Austronesian languages*, ed. by Jerold A. Edmondson and Kenneth J. Gregerson, 25–46. *Oceanic Linguistics* Special Publication No. 24. Honolulu: University of Hawai'i Press.
- Ross, Malcolm [D.]. 1988. *Proto-Oceanic and the Austronesian languages of western Melanesia*. Series C-98. Canberra: Pacific Linguistics.
- . 1992. The sound of Proto-Austronesian: an outsider's view of the Formosan evidence. *Oceanic Linguistics* 31:23–64.
- . 1993. Tonogenesis in the North Huon Gulf chain. In *Tonality in Austronesian languages*, ed. by Jerold A. Edmondson and Kenneth J. Gregerson, 133–153. *Oceanic Linguistics* Special Publications 24. Honolulu: University of Hawai'i Press.

- . 1998. Proto-Oceanic phonology and morphology. In *The lexicon of Proto-Oceanic*, vol. 1, *Material culture*, ed. by Malcolm Ross, Andrew Pawley, and Meredith Osmond, 15–35. Series C-152. Canberra: Pacific Linguistics.
- Ross, Malcolm, Andrew Pawley, and Meredith Osmond. 1998. *The lexicon of Proto-Oceanic*, vol. 1: *Material culture*. Series C-152. Canberra: Pacific Linguistics.
- Schütz, Albert J. 1985. *The Fijian language*. Honolulu: University of Hawai'i Press.
- . 1999. Fijian accent. *Oceanic Linguistics* 38:139–151.
- Siegel, Jeff. 1984. *Introduction to the Labu language*. Series A-69:83–157. Canberra: Pacific Linguistics.
- Smythe, W. E. 1958a. Admiralty Island linguistics. Part 4: Gele' grammar. Typescript.
- . 1958b. Admiralty Island linguistics. Part 7: Gele' vocabulary. Typescript.
- Walsh, D. S. 1966. The phonology and phrase structure of Raxa. M.A. thesis, University of Auckland.
- Wivell, Richard, 1981. Kairiru grammar. M.A. Thesis, University of Auckland.
- Wolff, John U. 1993. Proto-Austronesian stress. In *Tonality in Austronesian languages*, ed. by Jerold A. Edmondson and Kenneth J. Gregerson, 1–15. Oceanic Linguistics Special Publication No. 24. Honolulu: University of Hawai'i Press.
- Zorc, R. David, 1978. Proto-Philippine word accent: Innovation or Proto-Hesperonesian retention? *Second International Conference on Austronesian Linguistics: Proceedings*, ed. by S. A. Wurm and Lois Carrington, 67–119. Series C-61. Canberra: Pacific Linguistics.
- . 1993. Overview of Austronesian and Philippine accent patterns. *Tonality in Austronesian languages*, ed. by Jerold A. Edmondson and Kenneth J. Gregerson, 17–24. Oceanic Linguistics Special Publication No. 24. Honolulu: University of Hawai'i Press.

Emalus Campus  
University of the South Pacific  
PMB 072  
Port Vila  
VANUATU  
lynch\_j@vanuatu.usp.ac.fj