Unexpected Final Vowel Retention in Malakula

Abstract: Almost all of the thirty or so languages of Malakula in Central Vanuatu show a rule deleting word-final Proto-Oceanic vowels, suggesting that wholesale final vowel deletion might be reconstructible to Proto-Malakula. Two sets of languages, however, show vowel deletion only in certain phonological contexts (and those contexts are different), and retain final vowels in other contexts: a group of four languages in the north, and the Ninde language in the southwest. This paper describes vowel deletion in these languages, and shows that the process of wholesale final vowel deletion, far from being an early rule in Malakula, must have occurred well after Proto-Malakula broke up into various descendant groups or languages, and that it probably occurred on at least seven different independent occasions.

Keywords: phonological change, Oceanic languages

1 Introduction

The thirty or so languages spoken on the island of Malakula belong to the Central Vanuatu subgroup of Southern Oceanic (Clark 2009; see map 1). At first glance, it appears that one feature shared by all of these languages is the loss of Proto-Oceanic (POc) root-final vowels when they occurred in absolute word-final position. This loss of a vowel also occurred when a following word-final consonant was lost (though some languages lost final consonants far more frequently than others). Thus *-V > Ø, *-VC > either -VC or -Ø are very common developments, suggesting a very early phonological innovation in the Malakula subgroup. Some illustrative examples are given in (1) from four languages spoken in different parts of Malakula and belonging to different lower-order subgroups of the Malakula linkage: Vënen Taut in the northwest, Neve’ei in the central west, Port Sandwich in the southeast, and Uripiv in the northeast. (Forms retaining final consonants are bolded.)

1 I am grateful to two anonymous reviewers whose comments on an earlier draft of this paper substantially improved it. I take responsibility, however, for all remaining errors and misinterpretations.
2 I do not discuss root-final vowel clusters in this paper, because other changes (like *ai > e or *au > o) have come into play. In referring to “absolute word-final position”, I exclude vowel-final roots that normally take suffixes (like inalienable nouns, which take possessive pronominal suffixes), since the root-final vowel is almost never word-final.
3 The term “linkage”, following Ross (1988:9–11), refers to a set of languages and dialects descended from a dialect network, with each innovation affecting a different subset of dialects, as opposed to a “family” or “subgroup”, which refers to a set of languages and dialects descended from a single language defined by a set of coterminous innovations.
4 Apicolabials (or linguolabials) are marked with a following apostrophe: thus b’, m’, etc. POc *s is regularly lost in Vënen Taut, as is *t before a front vowel: see reflexes of *mate, *tasik, *salan, and *malaso in (1). POc *l and *r are lost in certain environments in Port Sandwich (Lynch 2008): see reflexes of *quraŋ and *salan. Unmarked protoforms are POc, while forms marked with a preceding e or a are from the lower-level protolanguages Proto-Eastern Oceanic or Proto-North-Central Vanuatu, respectively (Ross, Pawley, and Osmond 1998, 2003, 2008, 2011, to appear; Clark 2009). Clark’s reconstructions are partially retranscribed to conform with regular Proto-Oceanic orthography: thus I write his *g as *ŋ, his *q as *g, and his *? as *q, though I retain his *v (< POc *p) and *z (< POc *t)).
### Table 1: Comparison of loanwords across Vanuatu languages

<table>
<thead>
<tr>
<th>*-V &gt; Ø</th>
<th>V'ënem Taut</th>
<th>Neve'ei</th>
<th>Pt Sandwich</th>
<th>Uripiv</th>
</tr>
</thead>
<tbody>
<tr>
<td>*mate 'die'</td>
<td>m'a</td>
<td>mah</td>
<td>mac</td>
<td>e-mij</td>
</tr>
<tr>
<td>*m'ata 'snake'</td>
<td>na/mat</td>
<td>ne/m'at</td>
<td>na/mar</td>
<td>nu/m'et</td>
</tr>
<tr>
<td>*kutu 'louse'</td>
<td>na/xat</td>
<td>na/tat</td>
<td>na/xur</td>
<td>na/ut</td>
</tr>
<tr>
<td>*bonj 'night'</td>
<td>na/p'an 'day'</td>
<td>na/bunj 'day'</td>
<td>na/bonj</td>
<td>na/bonj 'day'</td>
</tr>
<tr>
<td>*malaso 'cold'</td>
<td>m'ala</td>
<td>melaʔah</td>
<td>mexas</td>
<td>melas</td>
</tr>
</tbody>
</table>

### Map 1: Vanuatu

Map 1: Vanuatu.

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5 Putative Proto-Malakula seems to have changed *malaso to *malakaso.
There are a few exceptions to this generalisation in nearly all languages, but these seem to be very few in number, and also completely sporadic, and are likely the result of the rule ceasing to operate before it had affected every lexical item. There are two cases, however, where exceptions are much more principled, in which vowel deletion fails to operate in certain phonological environments: (i) the languages of the north coast, and (ii) the Ninde language in the southwest. Interestingly, the rules of final vowel loss are different in each of these cases. This calls into question the nature of the change in Malakula (and perhaps elsewhere in Vanuatu), and suggests that, rather than being an early phonological development, it was in fact a late change that happened many times, in many individual languages, and not just once in the ancestor of a large group of languages.

I will outline the north coast situation only briefly in section 2, since it has been discussed in print elsewhere (Lynch 2011), and then give a more detailed treatment of the Ninde situation in section 3. Following that, I will show that the loss of final vowels has been a process that, far from occurring at an early stage in the development of Malakula languages, has instead occurred on numerous separate occasions.

Before proceeding, a note on the phonology of Proto-Oceanic and Proto-North-Central Vanuatu (PNCV) is in order. Proto-Oceanic is reconstructed as having the five vowels *i, *e, *a, *o, and *u, and the consonants in table 1. The phonemes in the first column (*p, *w, *b, and *m) are generally referred to as labiovelars; they were quite possibly doubly articulated—[k͡p], [g͡b], [ŋ͡m]—and their reflexes often show rounding or velarisation. Voiced obstruents were probably prenasalised; *q was a postvelar stop (often lost or reflected as a glottal stop in many daughter languages); *c and *j were palatal obstruents and *ñ a palatal nasal; *r was an alveolar trill and *dr its prenasalised counterpart: while *R may have been a uvular trill. In PNCV, *c and *s merged as *s; *R was often lost under conditions that cannot be described (François 2011), but when retained it merged with *r; and *p and *p seem to have lenited to PNCV *v and *v, respectively.

Table 1: Proto-Oceanic consonants.

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>t</th>
<th>c</th>
<th>k</th>
<th>k'</th>
<th>q</th>
</tr>
</thead>
<tbody>
<tr>
<td>*p</td>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td>k'</td>
<td>q</td>
</tr>
<tr>
<td>*b</td>
<td>b</td>
<td>d</td>
<td>j</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*m</td>
<td>m</td>
<td>n</td>
<td>ñ</td>
<td>ē</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*r</td>
<td>r</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>l</td>
<td>w</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The canonical syllable structure in POc and PNCV was (C)V(C). However, medial consonant clusters were not permitted, and thus the commonest word structures are CVCVC and CVCV (disyllables being more frequent than any other kind of word). Only certain consonants were permitted to occur word-finally: the voiceless obstruents /p t c s k q/, the nasals /m n ñ/, and the liquids/rhotics /r R l/. POc had a common article *na or *a, and in many of the languages I will be dealing with this has fused with the root—as, for example, in the forms for ‘snake’ in (1).

The locations of all Malakula languages are shown in map 2 (where language names in italics are those that have undergone the apicolabial shift—see 5.2.2 below).

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6 This discussion largely follows Lynch, Ross, and Crowley (2002) and Clark (2009). For *k', see Ross (2011). The notation *(xy) means that both *x and *y can be reconstructed: thus the PNCV form *sa(bv)uri 'disperse, scatter', for example, means that there is support for both *saburi and *savuri.
Four languages spoken along the north coast of Malakula—Nese (around 20 speakers), Vovo (500 speakers), Botovro (over 400 speakers), and Vao (perhaps 2,000 speakers)—retain POc final vowels in certain environments. Because the situation was described in some detail in Lynch (2005, 2011), I will only briefly summarise it here, and will illustrate the relevant changes only in Nese (though the other three languages, for which I have rather less data, show basically the same changes).

In non-final position, the POc vowels generally show little change—*a > a, *i > i, and so on—though there are a few conditioned changes (e.g., *o > u adjacent to a bilabial) that need not concern us here. The Nese reflexes of the POc consonants are given in table 2: a slash separates conditioned reflexes, while a comma separates unconditioned reflexes.

Nese rr is a trill contrasting with the flap r. Nese is one of the northern Malakula languages that underwent the apicolabial shift. The apicolabials, rare in the world’s languages, are reflexes of simple bilabials when before non-back vowels: *panako ‘steal’ > v’anax, *baga ‘banyan’ > na/b’ak, *kamalIr ‘men’s house’ > na/xm’al. In some words, the shift has continued, with the bilabial being reflected as a dental/alveolar: *barapu ‘long’ (> b’arav) > darav, *kamami ‘we exclusive’ (> kam’um) > kanan. See Lynch (2005) for details.
Table 2: Nese reflexes of POc consonants.

<table>
<thead>
<tr>
<th>POc</th>
<th><em>p</em></th>
<th><em>p</em></th>
<th><em>t</em></th>
<th>*s, <em>c</em></th>
<th><em>k</em></th>
<th><em>q</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nese</td>
<td>v</td>
<td>v/v'</td>
<td>t/s</td>
<td>s</td>
<td>x</td>
<td>Ø,i</td>
</tr>
<tr>
<td>POc</td>
<td><em>b</em></td>
<td><em>b</em></td>
<td><em>d</em></td>
<td><em>j</em></td>
<td><em>g</em></td>
<td></td>
</tr>
<tr>
<td>Nese</td>
<td>b</td>
<td>b/b',d</td>
<td>rr/j</td>
<td>j</td>
<td>k</td>
<td></td>
</tr>
<tr>
<td>POc</td>
<td><em>m</em></td>
<td><em>m</em></td>
<td><em>n</em></td>
<td><em>n</em></td>
<td><em>ŋ</em></td>
<td><em>ŋ</em></td>
</tr>
<tr>
<td>Nese</td>
<td>m</td>
<td>m/m',n</td>
<td>n</td>
<td>n</td>
<td>ŋ</td>
<td></td>
</tr>
<tr>
<td>POc</td>
<td><em>w</em></td>
<td><em>l</em></td>
<td><em>r</em></td>
<td><em>dr</em></td>
<td><em>y</em></td>
<td><em>R</em></td>
</tr>
<tr>
<td>Nese</td>
<td>u, w/v,v'</td>
<td>l</td>
<td>rr/r</td>
<td>rr/r</td>
<td>i</td>
<td>Ø, rr/r</td>
</tr>
</tbody>
</table>

With forms that were historically vowel-final, or that came to be vowel-final after the loss of a word-final consonant, the final vowel was retained if the penult was high and the final vowel non-high, as in (2a,b). If the syllable containing the high penult came to be non-initial (as a result, for example, of article accretion), then the penult was lost, as in (2b), and the final vowel—whatever its original form—was retained as e, except that this occasionally became o if the vowel in the preceding syllable was u.

(2) a. *n*baiga ‘green snail’ > na/daike b. *piso ‘sugarcane’ > na/vse
   *siba ‘cut’ > side ‘cut’ *siba ‘cut’ > ne/sde ‘knife’
   *lima ‘five’ > line *pulan ‘moon’ > na/vle
   *pica ‘how many?’ > vise *kuiba ‘imperial pigeon’ > no/xb'o

However, when the penult and final vowels were both high (3a), or when the penult was non-high (3b), the final vowel was lost:

(3) a. *n*ba(∗)ijji ‘anus’ > bis b. *mate ‘dead’ > nas
   *pitu (> *n*b*itu) ‘seven’ > xo/dit *tulu ‘three’ > til
   *tuku ‘break open’ > tuix *lano ‘a fly’ > na/lanj
   *kutu ‘louse’ > na/xut *m’ata ‘snake’ > na/mat
   *limut ‘algae’ > na/lum *salan ‘path’ > na/sal
   *sisiq ‘shellfish’ > neve/sis *tasik ‘sea’ > na/tas

The rule of vowel loss can thus be expressed as follows:

(4) a. [V, + high]# > Ø / VC__
   b. V# > Ø / [V, −high] C __

When a final consonant is retained, a similar pattern emerges, though with an additional complication. When the vowel of the final syllable was non-high, then the final *VC was retained as VC, as in (5a). However, when the vowel of the final syllable was high, a paragogic vowel was added to the final consonant, and then the vowel preceding that consonant was lost, as in (5b). Any retained POc final vowel or paragogic vowel added following a retained final consonant is usually reflected as e, whatever the nature of the original vowel; sometimes, however, when there was a high back vowel in the preceding syllable, the final vowel is reflected as o.

   *saqat ‘bad’ > sat *ñamuk ‘mosquito’ > namxo
   *p’iilak ‘lightning’ > ne/v’ilax *kadik ‘fire ant’ > na/xajxe

8 Note that the penult was regularly lost in Nese, but lost only in some etyma in the other three northern languages.
That is:

(6) \(C_i \{V, +\text{high}\} \rightarrow C_iC_o\# \) (often becoming \(C_iC_o\# \) if the deleted high vowel was \(u\)).

## 3 Ninde

“Ninde is spoken in the villages of Labo, Lawa and Windua, southwest Malakula, by about 1,100 people. It has also been referred to in the literature as Labo (Tryon 1976) and as Mewun (Tryon 1972) or Meaun (Ray 1926)” (Clark 2009:39). Lexical data are largely from Charpentier (1982). My interpretation of Charpentier’s data pretty much coincides with that of Clark (2009:39–40).

### 3.1 Development of the POc consonants

The Ninde reflexes of the POc consonants are shown in table 3 (see also Clark 2009:39–41). The symbol \(lh\) is written as \(<\dd>\) by Tryon (1976) and \(<\j>\) by Charpentier (1982). Tryon (1976:31) describes it as “an interdental lateral”; Charpentier (1982:63) calls it a “retroflex lateral”; while Elizabeth Pearce (pers. comm.), who ran a field methods class with Ninde as the language of study, says that it seems to be “an alveolar lateral fricative, probably voiced”. As in table 2, a slash separates conditioned reflexes, while a comma separates unconditioned reflexes.

<table>
<thead>
<tr>
<th>POc</th>
<th><em>p</em></th>
<th><em>p</em></th>
<th><em>t</em></th>
<th>*s, <em>c</em></th>
<th><em>k</em></th>
<th><em>q</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ninde</td>
<td>(v, w?)</td>
<td>(v/Ø/p)</td>
<td>(t/s)</td>
<td>(Ø/s, i (h)?)</td>
<td>(k/Ø, g)</td>
<td>(Ø)</td>
</tr>
<tr>
<td>POc</td>
<td><em>b</em></td>
<td><em>b</em></td>
<td><em>d</em></td>
<td><em>j</em></td>
<td><em>g</em></td>
<td></td>
</tr>
<tr>
<td>Ninde</td>
<td>(b/p, (b^#))</td>
<td>(b/p)</td>
<td>(d/s)</td>
<td>(s)</td>
<td>(g)</td>
<td></td>
</tr>
<tr>
<td>POc</td>
<td><em>m</em></td>
<td><em>m</em></td>
<td><em>n</em></td>
<td><em>ŋ</em></td>
<td><em>ŋ</em></td>
<td></td>
</tr>
<tr>
<td>Ninde</td>
<td>(m, (m^#))</td>
<td>(m)</td>
<td>(n)</td>
<td>(ŋ, (g, Ø))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POc</td>
<td><em>w</em></td>
<td><em>l</em></td>
<td><em>r</em></td>
<td><em>dr</em></td>
<td><em>y</em></td>
<td><em>R</em></td>
</tr>
<tr>
<td>Ninde</td>
<td>(w/Ø)</td>
<td>(1/\dd)</td>
<td>(x)</td>
<td>(r)</td>
<td>(Ø, i)</td>
<td>(Ø, x)</td>
</tr>
</tbody>
</table>

A couple of these correspondences deserve comment. First, POc *p* (= PNCV *v*) is lost before a back vowel: *poli ‘buy’ > ultra, \(^\#\)voza ‘slap’ > use, *pulu ‘hair’ > n/ele-, *pudi ‘banana’ > n/iis, \(^\#\)mavu ‘tame’ > momou. It is reflected as \(p\) when it occurs word-finally in Ninde: *Rapi ‘evening’ > le-xap, \(^\#\)lavi ‘fetch’ > lip. In cases where a final *u* or *o* was lost, *p > p*, suggesting that the vowel loss rule preceded the loss of *p: *Ropok ‘run, jump’ > xap, \(^\#\)napo ‘wave’ > ne/nep, *barapu ‘long’ > paxap, \(^\#\)sevu ‘waterfall’ > n/iip. The default reflex is *v*.

Second, there seems to be a general pattern regarding *s (and *c, which merged with *s in most Oceanic subgroups), though there are some exceptions. The general tendency is that *s is retained as s initially in Ninde and before *i, shown in (7a), and lost elsewhere, as in (7b):

(7) a. \(^\#\)sova ‘cough’ > seve b. *cakaRu ‘reef’ > n/aʔao
\(^\#\)sob*e ‘join’ > sapo *salan ‘road’ > n/ale
\(^\#\)saburi ‘disperse’ > suburo *sulu ‘torch’ > no/ul
*sinaR ‘shine’ > sane *malaso ‘cold’ > na/melha
*bokasi ‘pig’ > na/buas \(^\#\)vasusu ‘give birth (of animals)’ > veu
*tasik ‘sea’ > ne/tes *pose ‘paddle’ > na/we
There are, however, some exceptions. First, there are some cases where *s is retained even though it is not initial in Ninde or before *i: *saman ‘outrigger’ > ne/sep (with irregular *m > -p), *pusuR ‘bow and arrow’ > n/uis/poluot, *vuso ‘heart’ > nawane/vis. (It is possible that there has been crossover to its voiced counterpart *j in at least some of these.) There are also some cases where the reflex seems to be *i, both for expected s (*sale ‘hover’ > iele ‘fly’, ieteiele ‘hover’, *sav*a ‘dance’ > iawa), and for expected Ø (*masakit ‘sick’ > mia?, *sevu ‘waterfall’ > n/iip).

Third, there is a strong tendency for *k to lenite (to ʔ or Ø) when adjacent to *a but to remain as k elsewhere: *k tends to be lost noun-initially before *a (i.e., *na-ka > nV), as in (8a), and otherwise tends to be reflected as k when preceded by *a, as in (8b):

(8) a. *na-kadik ‘fire ant’ > neses b. *masakit ‘sick’ > mia?
   *na-katou ‘hermit crab’ > netu *laki ‘marry’ > la?
   *na-kabu ‘fire(wood)’ > neb *makobu ‘gecko’ > na/ma?ab
   *na-kayu ‘tree’ > nei *cakaRu ‘reef’ > n/a?ao
   *na-kamaliR ‘men’s house’ > nemel *panako ‘steal’ > venə?

The default reflex seems to be k: *koti ‘cut’ > kat, *keli ‘dig’ > kal, *tuki ‘pound’ > taketak, *buku ‘lump, knot’ > buku ‘blunt’. However, there are a number of cases where *k > g, often verb-initially (e.g., *kawit-i ‘pick fruit’ > gos, *kinit ‘pinch’ > gənəs), but also noun-root-initially (*kutu ‘louse’ > nu/gut, *kuriRta ‘octopus’ > nu/guwute).

Finally, POc *l split into l and lh, with the latter occurring when preceded and followed by *a or *o: *ta-lawa ‘spider’ > ne/talhe, *na-lasor ‘testicles’ > nolho-, *mala(mala) ‘naked’ > malhemalhe, *maloq ‘submerged reef’ > na/malhe/den ‘reef, coral’, *bo ‘k. basket’ > no/bolho ‘penis wrapper’.

### 3.2 Development of the POc vowels in non-final syllables

This section examines the reflexes of the POc vowels when they occurred in any syllable but the final one—henceforth “non-final vowels”. Clark (2009:39–40) analyses Ninde as having five phonemic vowels: /i e a o u/. He notes (2009:40) that “three other vowels (ö, ü, ə) appear in the sources, but are of doubtful phonemic status. ... The vowel <ö> occurs in only a few forms in Tryon; <ü> is more common, but occurs mostly after labial consonants, and may be a variant of some other vowel; <ə> is the most common of the three, and may represent a mid-central vowel phoneme variously heard.” In the presentation that follows, I will treat these vowels as if they were phonemic, since I have no further grounds for deciding on their status one way or the other.

The non-final reflexes of the POc vowels are summarised in table 4, where the default reflex is given first and the conditioned reflexes are given in parentheses. With all vowels, there are some cases of apparent reflexes that do not fit the regular patterns—a situation common to most Malakula languages.  

#### Table 4: Ninde reflexes of POc non-final vowels.

<table>
<thead>
<tr>
<th>POc</th>
<th>*i</th>
<th>*e</th>
<th>*a</th>
<th>*o</th>
<th>*u</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ninde</td>
<td>i (a, ü)</td>
<td>?</td>
<td>a (e, i, o)</td>
<td>o (u, a)</td>
<td>u (o, a)</td>
</tr>
</tbody>
</table>

Non-final POc *i tends to be reflected as a adjacent to a modern velar obstruent (*tikai ‘no’ > sakesake, *pili ‘plait’ > vxvx, *maligo ‘cloud, dark’ > ni/milaga, *bi(rR)i-bi(rR)i ‘Hernandia nymphafolia, sea hearse tree’ > ne/baxapaxa) and as ü following a POc labiovelar, which then became a bilabial (*bisi ‘backsie’ > ni/büse ‘tail (of pig)’, *mim‘num ‘drink’ > miun, *pilak ‘lightning’ > ni/vüle). The default reflex is i: *tiana ‘pregnant’ > siene, *sib ‘a ‘split’ > siba/x, *liwan ‘middle’ > live-, *pica ‘how many?’ > i-vih.

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9 Recall that a, o, and ü may be not be full phonemes but rather allophones of some other phoneme.
POc *u tends to be reflected as o, sometimes a, before x, which derives from *r (and *R): *maturuR 'sleep' > mitox, *maqurip ‘alive’ > muox, *quran ‘lobster’ > nu/oxo, but also *turuq ‘drip, drop’ > taxtax, *tuRi ‘sew’ > fax. After a bilabial obstruent, *u is often reflected as ü: *butoŋ ‘navel’ > ni/büte-, *bune ‘fruit dove’ > nev/piń, *pudi ‘banana’ > n/üüs. The default reflex is u: *kutu ‘louse’ > nu/gut, *qutan ‘bush’ > no/ute ‘place’, *buRa ‘elephantiasis’ > buxo.

There are very few cases of non-final *e: I have *bebe ‘butterfly’ > nel/pepe, where the reflex is e; *tarere ‘to crow’ > toxxoxo, where it is o; *keli ‘dig’ > kal and *malakeza ‘green’ > melkase, where it is a; and *leba ‘mud, swamp’ > ni/lipe and *sevu ‘waterfall’ > n/iip, where it is i.

POc *o is often reflected as ü, occasionally a, when the vowel in the following syllable was high: *boŋi ‘night’ > lo-bun ‘yesterday’, *poli ‘buy’ > ul, *ponuq ‘full’ > bun, and also *tulu ‘three’ > tal, *koti ‘cut’ > kat (lack of palatalisation of *t unexplained). The default reflex is o: *tonoR ‘mangrove’ > ne/doŋo, *tonoR ‘hear’ > xoŋe, *toka ‘stay, exist’ > tox.

POc non-final *a is often fronted to e before *Ca, as in (9a); this change, however, is blocked by adjacent labiovelars, velars, and postvelars, as shown in (9b).

(9) a. *tama ‘father’ > teme/no- b. *vaRa- ‘arm, hand’ > ne/vaxa
*matakur ‘fear’ > meta? *galato ‘nettle’ > na/galate
*panako ‘steal’ > vena? *panaŋ ‘feed’ > vaŋan
*tiana ‘pregnant’ > siene *tam’at(ae) ‘peace’ > damate
*malaso ‘cold’ > na/melha *maza ‘spear’ > na/mase

Non-final *a also shifts to e when there was a POc high vowel in the following syllable, as in (10a), and often shifts further to i if that following high vowel was *u, as in (10b). These changes, however, are also blocked by adjacent labiovelars, velars, and postvelars, as shown in (10c).

(10) a. *kamaliR ‘men’s house’ > ne/mel b. *vaRa- ‘arm, hand’ > ne/vaxa c. *laki ‘marry’ > la?
*N*masi ‘knife’ > ne/mes-ei *marani ‘tomorrow’ > maxan
*manuk ‘bird’ > ne/men *yaRu ‘casarina’ > n/iax
*drum ‘fresh water’ > den ‘sink’ *matakur ‘afraid’ > meta?
*tapuRiq ‘conch’ > ni/tip *yaRu ‘casarina’ > n/iax
*maturuR ‘sleep’ > mitox

Non-final *a is often reflected as o when adjacent to a velar or *w, as in (11a), although the default reflex a also occurs in this and other environments, as in (11b).

*N*bwaŋo- ‘mouth, front’ > no/buŋo- *zara ‘sweep’ > iaaxa ‘clear (of sea)’
*kar-so-ci ‘scrape’ > koxos ‘cut’ *panako ‘steal’ > vena?
*N*tarere ‘to crow’ > toxxoxo *baga ‘banyan’ > ne/bage

3.3 POc final *-V

POc final consonants are universally lost in Ninde, and thus all inherited POc roots would at some stage have been vowel-final.
3.3.1 POc high vowels

POc final high vowels are lost far more often than they are retained; in my data, *i is apparently retained in only 8 of about 50 *i-final etyma, and *u in only 4 of about 45 *u-final etyma. Below in (12) and (13), I give some examples, with the (a) sets of data showing all cases I have of retention of final *i and *u, and the (b) sets loss of those same vowels in identical or similar environments.

(12) a. N*magi ‘graded society’ > ne/megi  
   *sipi(r)i ‘coconut lory’ > na/sivoxa  
   *biRiBiRi ‘Hernandia sp.’ > na/baxapəxə  
   *tuli ‘earwax’ > ni/dale  
   *b*iisi ‘backside’ > ni/büse ‘tail of pig’  
   *taRam*i ‘allow, answer’ > damo  
   *sa(bv)uri ‘disperse’ > suburo  
   *Ravi ‘pull’ > xvi

   b. *tuki ‘pound’ > təktək  
   *ma-wiRi ‘left side’ > miex  
   *piRi ‘plait’ > vəxvəx  
   *poli ‘buy’ > ul  
   *bokasi ‘pig’ > na/buas  
   *mami ‘ripe’ > mem  
   *qu-su-ri ‘follow’ > o/xuox  
   *lavi ‘fetch’ > lip

In less than 10% of cases of final *u is that vowel retained; and in only about 15% of cases with final *i is *i retained, and some of them—the last three in (12a)—are transitive verbs, where the POc transitive suffix *-i would likely have been added. In the case of retained final *u, all cases are of the form *…uCu, but as can be seen in (13b), there are also cases where *…uCu > …u. Similarly, many cases of retained final *i occur in forms of the shape *…iCi or *…uCi, but again there are cases showing loss. If high vowel + consonant + high vowel predisposes a tendency to retain final vowels, this is exactly the opposite of the north coast situation described above, where this was a condition for loss of the final vowel. There is also no consistency in the nature of the reflex of the retained vowel, final *i surfacing as i, ə, e, and o, and final *u as e and o.

In summary, then, a rule deleting final high vowels occurred in Ninde. The process of final high vowel deletion is almost complete, though not all cases of final high vowels preceded by a syllable also containing a high vowel have as yet been deleted.

3.3.2 POc mid vowels

The POc mid vowels are retained slightly more often than they are lost: in my data, *e is retained in 11 out of 17 etyma, and *o in 13 out of 22; so while the high vowels are lost in 85‒90% of cases, the mid vowels are lost in only 35‒40% of cases. However, I have been unable to discover any factors that condition loss: neither the nature of the preceding consonant nor that of the vowel in the preceding syllable seems to be relevant, as will be seen in a number of the examples below.

POc final *e is lost in words like those in (14a), but retained in words of similar phonological shape (14b):

(14) a. *mate ‘die, dead’ > mes  
   *bune ‘fruit dove’ > nev/piun  
   *sake ‘rise, go up’ > aʔ  
   *pose ‘a paddle’ > na/we10

   b. *sale ‘to fly, hover’ > iele  
   *gone ‘sand, beach’ > nibin/wane  
   *bare ‘blind’ > paxa  
   *valuse ‘to paddle’ > vilie

10 The final e in this form is a reflex of *o, not *e.
Final *e tends to be retained as o or a after x (see the reflex of *bare above, and also *fure ‘island’ > nu/oxo/waxo and *tarere ‘to crow’ > toxoxo), and as e in other environments: see reflexes of *sale, *qone, and *valu above, and also *bebe ‘butterfly’ > nel/pepe and *mabare ‘Inocarpus edulis’ > na/bwe (with unexplained loss of the initial *m of the root).

Final *o is lost in words like those in (15a), but retained in similar phonological environments in words like those in (15b):

(15) a. *qapuso ‘heart’ > nawan/evis    b. *piso ‘Saccharum edule’ > ni/vie
   *dono ‘sink, submerge’ > den ‘set (of sun)’   *ronoR ‘hear’ > xone
   *panako ‘steal’ > vena    *puko ‘morning’ > mitu/buko

There are two cases where *apo sequences show loss (*lavo ‘to plant’ > lip and *napo(k) ‘a wave’ > ne/nep), and I have no data on retention of *o in this environment; so this may be a condition of loss, although the small amount of data makes this almost complete guesswork.

Retained final *o is generally reflected as o if the previous vowel was back, as in the reflex of *puko above plus additional forms in (16a), and as e elsewhere, as in the reflex of *piso above plus additional forms in (16b). Note that final e for expected o in the reflex of *ronoR in (15b) may be due to the addition of a transitive suffix: *rono-i > xoŋe.

(16) a. *koro ‘enclosure, shelter’ > no/goxogoxo    b. *tanoq ‘earth, ground’ > ne/tene
   *tonoR ‘mangrove’ > ne/dono    *qato ‘thatch’ > nuox-iete
   *quloc ‘maggot’ > nanu/olho    *maqeto(m) ‘black’ > müte

3.3.3 POc *-a

POc final *a is retained in over 40 etyma in my data, and lost in only half a dozen or so. Cases where final *a is lost are listed in (17a), while (17b) shows words of very similar phonological form in which final *a is retained, showing that the loss seems not to be phonologically conditioned.

(17) a. *saŋa ‘crotch, fork’ > səsax ‘forked’11    b. *maŋa ‘open the mouth’ > maŋa
   *pica ‘how many?’ > i-vih    *kuRita ‘octopus’ > nu/guwute
   *samano ‘outrigger’ > ne/sept12    *sam’e ‘chew’ > səm’e
   *mara ‘stand up’ > maxa ‘jump’    *m(‘a)ta(‘a)ga ‘puzzle tree’ > ne/medage
   *bura ‘break’ > vax ‘broken’    *p’ar’aɾaq ‘thunder’ > ni-viile papaxa
   *(pb)ula ‘bêche-de-mer’ > nimüt/wulwul    *qutan ‘place, garden’ > no/ute

POc final *a is retained as o if preceded by ux or ox, as in (18a), and as a if preceded by ax, as in (18b):

(18) a. *buRa ‘elephantiasis’ > buxo    b. *ŋora ‘snore’ > ŋa
   *quran ‘lobster’ > nu/oxo    *p’ar’aɾaq ‘thunder’ > ni-viile papaxa
   *bakuRa ‘tamanu’ > ni/bükoxo    *araŋ ‘heat, warm’ > ia/xaxa ‘light a fire’

Otherwise, final *a is retained as e:

(19) *mata ‘snake’ > na/mate    b. *sova ‘cough’ > seve
   *lima ‘five’ > sa/lame    *baga ‘banyan’ > ne/bage
   *leba ‘swamp, mud’ > ni/lipe    *salan ‘path’ > n/alhe
   *sinaR ‘shine’ > sane    *malakeza ‘green’ > melkəse

11 *ŋ > x unexplained.
12 *m > p unexplained
The behaviour of *a is almost the reverse of that of the high vowels: it appears that *a is only just beginning to be lost, and the conditions for that loss cannot be stated.

3.3.4 Summary

The fate of POc final vowels in Ninde is summarised in table 5, where parenthesised reflexes are conditioned, and where unconditioned reflexes are given in order of frequency. Table 5 also shows (i) a comparison with non-final reflexes, from table 4, and (ii) the retention rate of final vowels in my data. It appears from table 4 that the default reflex of all final non-high vowels is e. This is in contrast to non-final non-high vowels, where the default reflexes are *a > a and *o > o (with inadequate data for *e).

Table 5: Ninde reflexes of POc final vowels.

<table>
<thead>
<tr>
<th>POc</th>
<th>*i</th>
<th>*e</th>
<th>*a</th>
<th>*o</th>
<th>*u</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-final *V</td>
<td>i (a, ü)</td>
<td>?</td>
<td>a (e, i, o)</td>
<td>o (u, a)</td>
<td>u (o, a)</td>
</tr>
<tr>
<td>% Retention of final V</td>
<td>16%</td>
<td>65%</td>
<td>87%</td>
<td>59%</td>
<td>9%</td>
</tr>
<tr>
<td>Final *V when retained</td>
<td>i, a, e, o?</td>
<td>e (o)</td>
<td>e (a, o)</td>
<td>e (o)</td>
<td>e, o?</td>
</tr>
</tbody>
</table>

The rules relating to the final vowels are give below, with H = high vowel and M = mid vowel. The two processes shown in (21) appear at this stage to be quite random: that it, either (a) or (b) applied in a particular etymon, but there seems to be no predictability involved.

(20) H# > Ø (note: a few cases of HCH# > HCH#)
(21) a. M# > Ø
    b. M# > e# (some conditioned cases of a and o)
(22) a# > e# (some conditioned cases of a and o)

4 Close relatives and neighbours

In this section, I present data from languages that are genetically and/or geographically close to the languages I have been considering in sections 2 and 3. The purpose of this comparison is to show that loss of final vowels in these neighbouring or closely related languages is quite regular, almost without exception. (For more details on the makeup of various subgroups within Malakula and the innovations defining them, see 5.1 and 5.2.1 below.)

The four northern languages discussed in section 2 are members of a Northern Malakula subgroup, which also includes the Malua Bay language, spoken immediately to the south of Nese on the northwest coast (Lynch and Brotchie 2010:382–83). Moving to the other coast, where Vao, the easternmost member of this subgroup, is spoken, the geographically nearest language is Uripiv, also a fairly close relative (see figure 1 below). Yet both Malua Bay and Uripiv show regular loss of final vowels, as illustrated in table 6 (where a dash indicates either no data or non-cognate form).

Ninde’s closest neighbours are immediately to the south or southeast—Nāti, Nahavaq (also known as Southwest Bay or Sinesip), and Naha’ai (also known as Malfaxal)—and Clark (2009:39) suggests that these last two languages may be its closest relatives, at least as far as lexicostatistical cognate percentages are concerned. Despite its geographical position well to the south, however, Lynch (The Malakula linkage of Central Vanuatu. Paper presented to the Seventh International Conference on Oceanic Linguistics, Nouméa, July 2–6, 2007) and Lynch and Brotchie (2010:383) have suggested, on the basis of shared phonological innovations, that Ninde is also closely related to some languages spoken in northwest Malakula. They
proposed a Peripheral Malakula subgroup consisting of Nāti, Nahavaq, Na’hai, and Ninde in the southwest, along with V’ënen Taut, Tape, and Tirax in the north, but not including the geographically intervening central-western languages Larëvat, Neve’ei, Avava, Lendamboi, Nasarian, and Aveteian, which appear to belong to one or more different subgroups. All of these other members of this Peripheral Malakula subgroup show regular loss of word-final non-high vowels, unlike Ninde, which retains *a in virtually all cases and the POc mid vowels in a majority of cases. This is illustrated in table 7.

Table 7: Final vowels in Ninde and its neighbours/relatives.

<table>
<thead>
<tr>
<th>POc/PNCV</th>
<th>Malua Bay</th>
<th>Nese</th>
<th>Vao</th>
<th>V’ënen Taut</th>
<th>Tape</th>
<th>Tirax</th>
</tr>
</thead>
<tbody>
<tr>
<td>*lima ‘five’</td>
<td>i-lam</td>
<td>line</td>
<td>xe/lím’e</td>
<td>e-lím</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*pica ‘how many?’</td>
<td>i-ves</td>
<td>vise</td>
<td>xe/víhe</td>
<td>e-vis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*kuRita ‘octopus’</td>
<td>xa/xat</td>
<td>xute</td>
<td>xute</td>
<td>na/ít</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*siba ‘cut’</td>
<td>ne/siv ‘knife’</td>
<td>ne/sde ‘knife’</td>
<td>ne/hib’e ‘knife’</td>
<td>ne/sip ‘knife’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*siwa ‘nine’</td>
<td>xa-sap</td>
<td>xe/sve</td>
<td>xe/hive</td>
<td>e-siw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*puku ‘morning’</td>
<td>ma/vax</td>
<td>ne/v’xe</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*quran ‘prawn’</td>
<td>n/or</td>
<td>na/urre</td>
<td>na/urre</td>
<td>na/ur</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*salan ‘moon’</td>
<td>ne/val</td>
<td>na/vle</td>
<td>na/vule</td>
<td>na/völ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*qusan ‘rain’</td>
<td>n/os</td>
<td>na/use</td>
<td>na/ufe</td>
<td>na/us</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 Discussion

In 5.1 below, I outline what I believe to be the correct explanation of the facts presented above; while in 5.2, I discuss two other possible explanations, both suggested by reviewers of this paper, and show why I believe they are inadequate as explanations.

5.1 Multiple independent identical innovations

Two different vowel loss patterns can be observed here. In the Northern languages, the loss of a final vowel depends on the nature of the penultimate vowel: any vowel can be lost, but (i) a high vowel was lost if the penult was also high, and (ii) any vowel was lost if the penult was non-high. In Ninde, on the other hand, the nature of the final vowel was the important factor: high vowels were generally lost, the low vowel was generally retained, while the mid vowels show a fifty-fifty chance of loss.

All other Malakula languages show a general rule whereby the final vowel was lost, irrespective of the
nature either of that vowel or of the one in the preceding syllable. There appears to be no evidence in any of those languages that the height of either the penult or the final vowel was in any way an important factor in the vowel loss process.

Figure 1 gives a tentative subgrouping of the Malakula languages, based on phonological and some lexical innovations (J. Lynch, Some notes on the linguistic history of Malakula. Paper presented to the Terry Crowley Memorial Workshop on Vanuatu Languages, Wellington, N.Z., November 13–14, 2006; J. Lynch, Play it again, Sam: Multiple identical phonological innovations in Malakula. Paper presented to COOL9 (Ninth International Conference on Oceanic Languages), Newcastle, Australia, February 4–8, 2012) which seem to show an initial division into an Eastern and a Western linkage. In figure 1, the names of languages that do not show wholesale loss of final vowels—i.e., Ninde, along with the four northern languages discussed in section 2—are bolded and capitalised.

![Eastern Malakula Linkage](image)

![Western Malakula Linkage](image)

**Figure 1: Tentative Malakula subgrouping**

On the basis of the internal relationships of these languages, it is clear that final vowel loss was not a general rule that applied early in the history of Malakula languages; rather, a number of different, probably unconnected processes of final vowel deletion occurred in different subgroups/languages (and maybe at different times). Ignoring the unclassified languages for the moment, it appears that the unconditioned change *CV# > C# must have applied at least seven separate times in the history of these languages:
- in Malua Bay;
- in the ancestor of the Central East languages;
- in the ancestor of the Southeast languages;
- in Nāti;
- in the ancestor of the Southwest languages; and
- in the ancestor of the Central West languages.

13 While not much weight is given to simple lexical replacements (because many of these languages are not yet sufficiently well-described), some weight is given to shared irregular phonological developments of an inherited POc or PNCV lexical protoform.
(It may, of course, have applied more often than this: for example, it may have applied to each of the Central West languages separately, rather than to their common ancestor.)

5.2 Alternative hypotheses

There are two possible alternative hypotheses that merit some discussion: (a) the subgrouping is wrong, and the bulk of the languages that show unconditioned *CV# > C# belong to a single subgroup; and (b) the number of independent cases of the same change may be much lower, since borrowing may well have had a role to play. I will deal with each of these briefly below.

5.2.1 The subgrouping is wrong

An anonymous reviewer suggests that the subgrouping as outlined in figure 1 may be incorrect, and that instead all Malakula languages except Ninde, Nese, Vovo, Botovro and Vao might belong to a single subgroup defined by unconditioned final vowel loss. This would mean that final vowel loss could be traced back to a single ancestral language which later gave rise to all except five of the modern Malakula languages.

It is of course possible that the subgrouping in figure 1 is wrong: indeed, with further work on a number of languages that have not yet been studied in any great detail, there will almost certainly be changes to this subgrouping. But I believe that these changes will be minor, and that the basic major divisions will be upheld; and thus I do not believe that this reviewer’s suggestion is tenable. There are two reasons for this.

One is that final vowel loss is almost “endemic” in Vanuatu: it is widespread in languages of the Banks and Torres Is. in the far north, and also occurs in some languages of Espiritu Santo, Ambrym, South Efate, and the whole of the Southern Vanuatu subgroup. Therefore, in the Vanuatu context, final vowel loss is not unusual.

The other is that the languages I have been dealing with here show close links—as evidenced by rather more unusual innovations—with other languages that do show unconditioned final vowel loss. For example, Nese, Vovo, Botovro, and Vao belong to the same subgroup as Malua Bay (which does unconditionally delete all final vowels), defined by a number of innovations, perhaps the most significant being the merger of *d, *r, *R and *dr. (Most other Malakula languages merge *d and *dr, but keep *r/*R distinct.) Ninde shares a number of unusual innovations with another set of languages that show unconditioned vowel loss:

- POC *p is lost before back vowels in Vënen Taut, Tape, and Ninde.
- POC *s and *j merge before front vowels in Tirax, Nati, and Ninde.
- POC *s > s initially and before *i, but > Ø elsewhere (with occasional i in both environments), in Vënen Taut and Ninde.

Similar kinds of phonological evidence, as well as some lexical evidence, defines various other subgroups listed in figure 1, though there is no space here to provide any details. Thus we can conclude that the basic subgrouping in figure 1 is correct, and that there is no single “final vowel deleting subgroup” in Malakula.

5.2.2 Spreading via language contact is the explanation

Another reviewer makes the following point: “Although it is fair to conclude that the losses occurred independently, to the extent that they began after the languages in question had diverged, the question inevitably arises as to whether contact between neighbouring languages or dialects played a part in triggering the losses. Presumably there was a good deal of bilingualism in Malakula.”

I am not sure how much contact and bilingualism there was in Malakula, though given that many languages were spoken by fewer than 1,000 people, there probably was some. And there does seem to have been some borrowing of phonological features or changes in Malakula. There is some evidence that the
apicolabial shift—by which bilabials before non-back vowels became apicolabials, which in some languages then further developed as dentals/alveolars—was spread through contact. Lynch and Brotchie (2010:386) note that “V’ënen Taut is the only language within Malakula in which the shift (a) affected all three bilabials (*p, *b, and *m), and (b) is virtually exceptionless. With the other languages, either the shift did not apply to *p, as in Tirax and Vovo; or there are numerous exceptions—forms where the expected shift has not taken place—as in Nese and Vovo; or the shift is irregular, with some apicolabial and some dental reflexes, as in Nese, Vovo, Botovro, and Vao. This suggests that the shift was a thoroughgoing internal change in V’ënen Taut, imitated, though imperfectly, in the other languages.”

In the case of final vowel loss, borrowing may well have taken place, but I do not believe that we can identify. Borrowing of a feature is identifiable: for example, loans from the Polynesian outlier Futuna-Aniwa in languages of Southern Vanuatu are easily identifiable, because they retain final vowels, whereas inherited forms have lost final vowels (Lynch 1994). However, borrowing of the absence of a feature is not so identifiable: when we have twenty or so Malakula languages that have all lost final vowels, it is difficult to make any assumptions as to what language has borrowed this loss from what other language, and when. Therefore, although borrowing may have been involved, I feel that it does not really provide much of an explanation.

6 Conclusion

I have shown here that, although the loss of final vowels in Malakula languages is widespread and pervasive, one cannot make the assumption that this was an early development in this subgroup. Quite to the contrary, the two cases studied here lead to the hypothesis that vowel loss must have been a process which occurred well after the breakup of any putative “Proto-Malakula”, given the genetic affiliations of the languages that retain final vowels, and the varying conditions for these retentions.

In a sense, this situation constitutes a warning to historical linguists: an extremely widespread phenomenon may be evidence linking all the languages that share it, but it also may not. In this case, final vowel loss is extremely widespread in Malakula, but this is not due to any shared single process. Rather, final vowel loss turns out to be a fairly recent process, which has taken place in multiple occasions in Malakula, quite possibly through a process of drift.

References


