

Temathesis in Rotuman

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1 Introduction

Rotuma is a small island in the South Pacific, located roughly at the crossroads between Polynesia, Melanesia and Micronesia. Politically, the island forms part of the Republic of Fiji, though the closest Fijian island, Cikobia, is about 465 km distant (Woodhall 1987:1). Nowadays the island is accessible from Suva, the capital of Fiji, in a 2_ day boat trip or in 2_ hours by plane. In contrast to its Northern neighbour Tuvalu, Rotuma is not a coral atoll but a so-called “high” island of volcanic origin (Pleistocene); its surface area is 46 km_ and its soil is very fertile.

Rotuma has a population of approximately 2.700 inhabitants (59 per km_) who live in 20 villages scattered along the coast, which gives it the highest population density of all Fijian islands (Walsh 1982:20). However, three times as many Rotumans have left their home island for the urban areas of Fiji or live overseas. Many of these Fiji-Rotumans have never been on Rotuma or just for a brief Christmas holiday.

Rotuman, Fijian, and the Polynesian languages form the Central Pacific subgroup of Oceanic. In contrast to its small number of speakers, Rotuman has featured frequently in works of general and comparative linguistics. What makes Rotuman so interesting in the eyes of linguists is its two “phases”, metathesis, and the unusually complex vowel phonology – unusual at least for Oceanic or Polynesian languages. “This language has provoked Oceanic linguists into doing some of their best work. Its wonderfully intricate morphophonology has teased phonological theorists and the challenge of trying to work out Rotuman’s historical position and development has had some important spin-offs for Oceanic historical linguistics. Rotuman has been the *agent provocateur* in two of the foundation studies of the modern period of Oceanic comparative linguistics, those of Grace (1959) and Biggs (1965)” (Pawley 1996:86).

2 What is metathesis in Rotuman like?

Let us look at some examples which might be familiar to many readers:¹

¹ Language abbreviations used are PCP = Proto Central Pacific, PEO = Proto Eastern Oceanic, PPn = Proto Polynesian, and SF = Standard Fijian.

Table 1: Related words from Central Pacific languages

| gloss | Fijian | Samoan | Tongan | metathesised Rotuman form | non-metathesised Rotuman form |
|--|---------------------|-----------------|--------------------------|------------------------------|----------------------------------|
| ‘orange’ | <i>moli</i> | <i>moli</i> | <i>moli</i> | <i>mör</i> | <i>mori</i> |
| ‘strand of hair’ | <i>tobe</i> | <i>sope</i> | <i>tope</i> | <i>söp</i> | <i>sope</i> |
| ‘five’ | <i>lima</i> | <i>lima</i> | <i>nima</i> | <i>liam</i> | <i>lima</i> |
| ‘figure’ | <i>vika</i> | <i>fika</i> | <i>fika</i> | <i>fiak</i> | <i>fika</i> |
| ‘coffee’ | <i>ko(f,v)(i,e)</i> | <i>kofo</i> | <i>kofi</i> | <i>köf</i> | <i>kofi</i> |
| ‘candy’ | <i>lofi</i> | <i>lofo</i> | <i>lofo</i> | <i>löf</i> | <i>lofi</i> |
| ‘paper’ | <i>veva</i> | <i>pepa</i> | <i>pepa</i> | <i>peap</i> | <i>pepa</i> |
| ‘sugar’ | <i>suka</i> | <i>suka</i> | <i>suka</i> | <i>suak</i> | <i>suka</i> |
| ‘wish’ | - | <i>finagalo</i> | <i>finangalo</i> | <i>fiangar</i> | <i>fiangaro</i> |
| ‘tree sp. (<i>Pisonia grandis</i>)’ | - | <i>pu’avai</i> | (PPn * <i>puka-wai</i>) | <i>puakvai</i> | <i>puakvai</i> |

The “strange” sound of Rotuman (in comparison with its close relatives) is largely due to its metathesis. As can be seen from Table 1, metathesis involves more than just the final vowel and the preceding consonant changing place.

The earliest written records of the language show that metathesis was present then in Rotuman. Lesson (landed on Rotuma on 1 May, 1824) gave *talian* [θaːlyaN] for “ears”, the short form of contemporary *faliga*; Bennett (1831) gave *Fangwot* [faːNwɔt] for the short form of the place name *Fag’uta*; and Turner (1845) gave *lium* [ˈlyɔm] for “five”, the short form of *lima*.

Metathesis is still a productive process. It is applied to most loanwords, too. But it cannot be seen in isolation, it stands at the core of a morphological process in Rotuman. This may be called short form derivation.

3 Short form derivation

3.1 Scope of application: which words have short forms for what?

With the exception of mostly monosyllabic grammatical particles² (i.e. prepositions like ‘*e* and *se*, conjunctions such as *ma*, *ka*, *la*, etc.) and a handful of other words, every Rotuman content word (lexical morpheme) has two forms.³ These have been referred to as “long and short form” (Biggs 1959:24, 1965:388 and Milner 1971:418), “primary vs. secondary form” (Churchward 1929:283), “complete and incomplete phase” (Churchward 1940:13f), “absolute and construct case” (Hocart 1919:257), and “proper & original form vs. altered or construct form of the words” (Hale ms.:123).

When is which form used? One hundred and fifty years ago, Hale had already recognised some regularity in this process (1846:469): “A general law appears to be that when a word stands by

² These are also excepted from another rule, namely that each word must contain at least two morae, i.e. two vowels or a long vowel (Blevins 1994:491).

³ Some words have even more: *mi’a* and *mia+*, *mi’e* and *mie* ‘red’ (Churchward 1940:87).

itself, not followed by another on which it depends, it must terminate in a vowel, and this appears to be the proper and original form of most of the words; but when combined, in any way whatsoever, with other words, an alternation takes place by which the concluding syllable is so transposed or contracted as that the consonant should be the final letter.”

To put it in simple words, within a phrase all words except the last one are in their short form. All morphemes in a compound word except the final one are always in their short form, the final morpheme being in its long form only if the word is phrased-final.. The shape of this final element shows whether a word or compound or a whole phrase is definite and specific (citation form) or indefinite and unspecific (short form).⁴ The meaning of the words usually remains unchanged – contrary to what Vamarasi (1991:2) claimed.

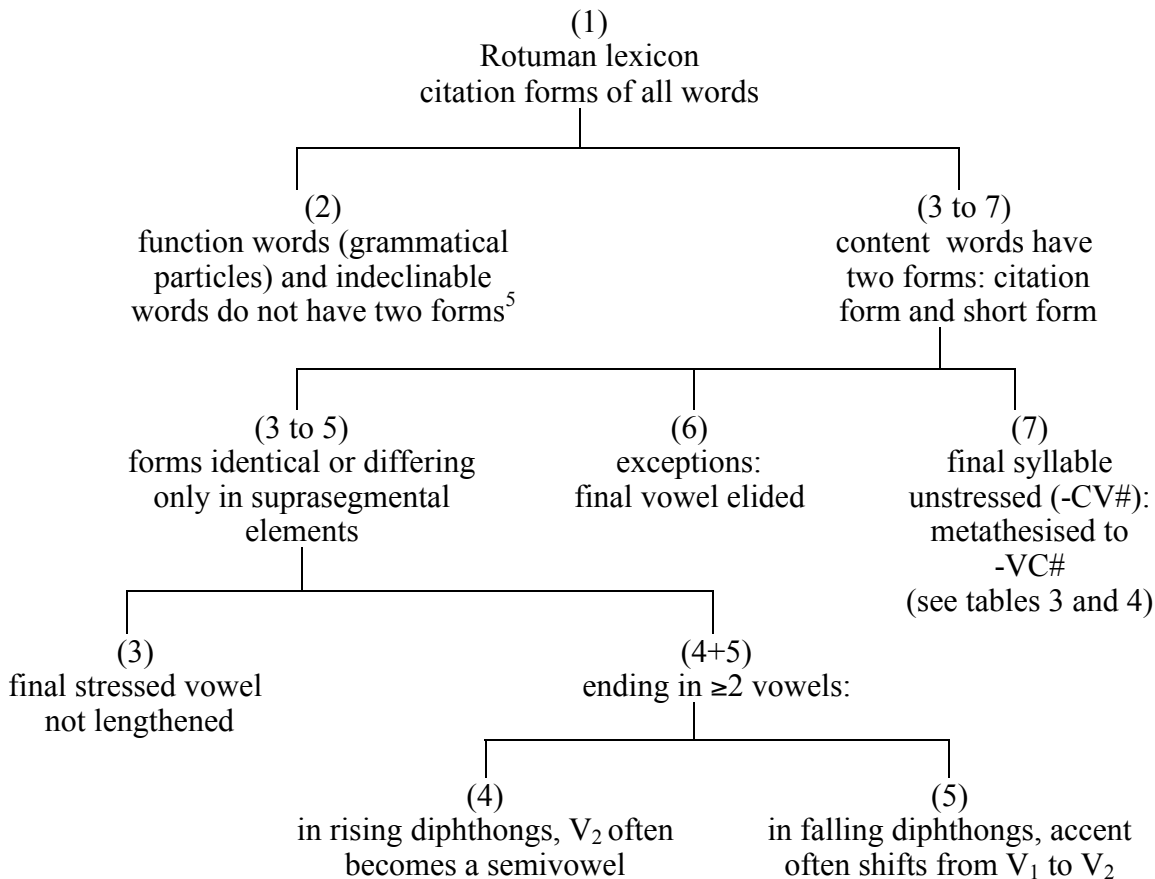
Table 2: Examples of the two forms

| complete phase | gloss | incomplete phase | gloss |
|-----------------------|--------------------------|-------------------------|---------------------------------|
| <i>hóla</i> | ‘spread out, spreading’ | <i>hoál ta</i> | ‘the spread(ing)’ |
| <i>hoál ‘épa</i> | ‘spread out mats’ | <i>hoál ‘éap ta</i> | ‘the mat-spreading, spread mat’ |
| <i>hoál ‘éap fúri</i> | ‘spread out zigzag mats’ | <i>hoál ‘éap fúr ta</i> | ‘the spread(ing)’ |

One can group Rotuman words according to the way their short forms are derived.

⁴ Cp. Churchward (1940:14, 88ff), Besnier (1987:203f) and Blevins (1994:493).

Diagram 1: Dividing the Rotuman lexicon according to short form derivation



Notes:

- re (2) Indeclinable words form a closed group within the Rotuman lexicon (see list in Churchward 1940:86.5). Nowadays it is expanded by the import of loanwords from English and Fijian.
- re (3) Final vowels are lengthened only when they carry the stress. In the short form they fall automatically into a stressed slot within a phrase so that no lengthening (in order to attract the accent) is required. For example:⁶ *uak* [ua»ke] ‘brawl’ → *uake&* in *uaké ta* [ua»keta] ‘the brawl’.
- re (4) Biggs (1959:24f) regarded final rising diphthongs as belonging to two different syllables and then concluded that they merged in the short form into one syllable whereby the less sonorant of the two became the semivowel. For example: *vaŕi* [»vçi] > [»vçy].
- re (5) Words ending in falling diphthongs build their short form usually by shifting the accent from the penult to the final syllable (Churchward’s third declension): *koría* ‘sailing boat, sailing boats in general’ → *koríá he* ‘a sailing boat’.
- re (6) Pronouns (except the dual forms), pronominal and directional suffixes (like *-me*, *-na*) form their short form irregularly by deleting the final vowel (Churchward 1940:85f). Within group (7) there are many cases where the short form looks like the long form without its final vowel. In reality it has coalesced with the vowel of the preceding syllable after

⁵ Polysyllabic particles resemble in their form either the complete (*‘ita-ke*, *‘ea-ke*, *ko-ta*, *se-minte*) or the incomplete phase (*kat*, *kal*, *sin*, *mar*, *kam*). Colloquially *ra*, the second part of the negation, is cliticised to the preceding word and shortened to *-r*, e.g. *gou kat* *‘inea-r* < *gou kat* *‘inea ra* ‘I don’t know.’ The contrary can be observed in poetry and songs: *kat* > *kate*, *sin* > *sini* (cp. table 13).

⁶ Vamarasi’s (1991:6) view that “words with long vowels have no short form at all,” cannot be upheld since words like *t_ope* do have a short form (*t_öp*). She probably referred to **final** long vowels.

metathesis, though sometimes leaving no traces (examples under rule 2 in the following section).

re (7) All other content words have the canonical shape of the ending $-V_1CV_2\#$ in their citation form and build their short form via metathesis. How this works is demonstrated in Tables 3 and 4.

Table 3: Endings of the short forms in the conventional spelling

| | V ₂ = | /i/ | /u/ | /e/ | /o/ | /a/ |
|----------------|------------------|-----|-----|-----|-----|------|
| V ₁ | | | | | | |
| = | | | | | | |
| /i/ | | iC | iC | ieC | ioC | ia+C |
| /u/ | | üC | uC | ueC | uoC | ua+C |
| /e/ | | eC | eC | eC | eC | eaC |
| /o/ | | öC | oC | öC | oC | oaC |
| /a/ | | âC | a+C | äC | aC | aC |

Table 4: Endings of the short forms in contemporary pronunciation

| | V ₂ = | /i/ | /u/ | /e/ | /o/ | /a/ |
|----------------|------------------|-----|-----|-----|-----|-----|
| V ₁ | | | | | | |
| = | | | | | | |
| /i/ | | iC | iC | yeC | yuC | yçC |
| /u/ | | üC | uC | weC | woC | wçC |
| /e/ | | eC | eC | eC | eC | yaC |
| /o/ | | øC | oC | œC | oC | waC |
| /a/ | | æC | çC | æC | aC | aC |

The tables above should be read as follows. On the far left (V₁ stands for the vowel of the penultimate syllable of the long form) and above each table (V₂ stands for the final vowel) I have listed the five original vowels of Rotuman, /a e i o u/. I think that the language had only these five common Oceanic vowels when this process started in Pre-Rotuman, and will try to argue for my assumption in the next section. Thus suppose V₁ = /u/ and V₂ = /a/, that is a morpheme ends in /uCa/ in the citation form, then its short form is phonemically /uaC/ but will be written *ua+C* and pronounced [wçC]. For example: *hula* [ʰhula] → *hua+l* [ʰhwçl] “moon”.

Other phonological processes have applied later and changed the participating vowels even further to blur the picture (see section 3.5). Some authors see it exactly the other way round: that ablaut happened **before** the creation of short forms, e.g. *ha+fu* < Pre-Rotuman *hçθu (Biggs 1965:388; see table 6).

3.2 Review of previous explanations

Various linguists have come up with different scenarios and systems of rules to explain how the short forms developed out of the above 25 citation forms with an unstressed final syllable. I believe that the core element of this transformation (or incomplete phase formation) is metathesis of the unstressed final syllable: the final vowel and the immediately preceding consonant change place.

Let me present the main attempts by earlier writers at explaining this derivation and then give my comments as well as my own system of rules (in 3.3).

3.2.1. Churchward

Churchward began his grammar by listing the phonemes and then straight away describing the two forms or phases. He regarded the citation form as the original form. He grouped Rotuman words into four declensions according to the way they form their short forms. The first two declensions both end in -VCV. In his first declension the short form is created by deleting the final vowel of the citation form. In addition, in declension 1b to 1d the vowel of the penultimate syllable is changed into the corresponding Umlaut. When the final vowel of the citation form is lower than the penultimate one, metathesis of the final vowel with the preceding consonant occurs (second declension). When a citation form ends in two or more vowels, the (stressed) penultimate vowel will be somewhat shortened (third declension). Words ending in a long vowel as well as indeclinable words remain unchanged (fourth declension).

More recently, people have seen metathesis as the first stage of short form derivation; but for Churchward, the starting point was the deletion of the unstressed final vowel. Unfortunately he does not list the reverberations this has on the vowel of the root syllable (the penultimate or stressed one of the most common shape of Rotuman words, i.e. two syllable morphemes). The rule defining his second declension has been copied many times because it is correct (Milner's third rule, Vamarasi's first one and Geraghty's fourth); but it does not apply to the occurrence of metathesis, but rather to the preservation of the vowel pair created by metathesis. He did not mention that the first of them becomes a diphthong later on.

3.2.2 Biggs

Biggs (1959 and 1965) saw the underlying principles. The base of all short forms is the interchange/exchange/swap (metathesis) of the final two phonemes of the citation form. Later the accent moved from the penult to the final syllable and the short form lost one syllable, either because the less sonorant of the two now adjacent vowels became a semivowel or because two similar vowels merged into a single one. This coalescence preserved the rounding of one of the vowels⁷ and the fronted position of the other in the resulting umlaut. For example:

⁷ The /a/ in /kámi/ is not rounded and the resulting umlaut in *kæm* therefore neither. A rule prescribing that the rounded vowels [ç o u] and the front vowels [e i] merge into a rounded front umlaut [œ ø ü] is therefore not correct because *u* and *e* in the short form do not merge: *pure* > *puer* "cowry shell".

Table 5: Development of the short form according to Biggs (1965:389)

| pre-Rotuman citation form | metathesised form | contemporary short form | in Churchward's spelling | gloss |
|---------------------------|-------------------|-------------------------|--------------------------|---------|
| /óta/ | /óat/ | [wat] | <i>oat</i> | 'sago' |
| /láje/ | /læej/ | [lætS] | <i>läj</i> | 'coral' |
| /séru/ | /séur/ | [sör] ⁸ | <i>ser</i> | 'comb' |
| /úli/ | /úil/ | [/ül] | <i>ül</i> | 'skin' |
| /kámi/ | /káim/ | [kæm] ⁹ | <i>kåm</i> | 'dog' |

Some corrections to the bottom row are called for: the short form of /kámi/ is *kåm* [kæm] and not [kœm]. Actually he should have written them /kçmi/ and /kçim/, since he claimed that [æ a ç], the three allophones of /a/ had already been created in Pre-Rotuman.¹⁰ The short form *kåm* [kæm] can be much easier derived from a hypothetical interim stage of /káim/ than from /kçim/ (see under rule 7 in section 3.5.2).

In his example /kámi/ 'dog', the root vowel /a/ is today rounded [ç]; but when the fashion of creating short forms started, it was not rounded yet and consequently the resulting umlaut in *kåm* [kæm] is not rounded. So his rule that rounded vowels [ç o u] merging with front vowels [e i] into a front rounded umlaut [œ ø ü], is not correct, since *u* and *e* did not merge in the short form: *pure* > *puer* 'cowry shell'.

3.2.3 Milner

Milner (1971) also recognised that the underlying vowels were /a e i o u/ and that metathesis was the origin of the multitude of vowels in Rotuman. He gave the following rules for the derivation of the short form (1971:418ff):

- (3.1) If V₁ is low (i.e. /a/) and V₂ is a front or high vowel (i.e. /e i u/), V₂ is elided and V₁ changes into a mid-high allophone (i.e. /æ ç/); it becomes /ç/ before /u/ and /æ/¹¹ before /e i/.
- (3.2) If V₂ and V₁ are identical or if V₁ is not higher than V₂, then V₂ is deleted (i.e. for endings like eCo, iCu, eCu, aCo).¹² If I had regarded the ending of short forms in [çC] derived from */auC/ as caused by elision (rule 2b) instead of vowel merger + ablaut formation (rule 3b), a rule could be formulated which is as nice and simple as Milner's second rule.
- (3.3) If V₂ is lower than V₁, metathesis occurs (Churchward's second declension).
- (3.4) If V₂ is front and V₁ back and V₁ not lower than V₂, then V₂ is deleted and V₁ becomes the front rounded allophone of V₁ "as in [»futi] → [füt], [»mose] → [møs],

⁸ This variant pronunciation or vowel coalescence does not apply to all cases of the ending *-eCu*, though for most which end in the other high vowel (see table 9).

⁹ It was earlier (1959:26) transcribed as [kç_m] by him, but should be [kæm].

¹⁰ I wonder how a loanword *kamia* ("come here") can be labelled pre-Rotuman?

¹¹ By error he also wrote [œ] instead of [æ].

¹² Cairns (1976:275) and also Vamarasi (in her rule 2) believed that "metathesis only occurred if the final vowel was lower than the penultimate one."

[>ofi] → [øf], /lagi/ [>lçNi] → [lœN].”¹³ In all cases back vowels would turn into their rounded equivalents in front position (cp. my comment to Biggs in section 3.2.2 and under rule 7 in section 3.5.2).

In his view (Milner 1971:421), the phonetic equivalents of the five allophones generated by rules 1 and 4 were the following:

ä [æ] å [œ] a+ [ç] ü [ü] ö [ø]

As mentioned above, Churchward’s å is pronounced [æ] (cp. also Besnier 1987:209, Biggs 1959:24) and it is not rounded; ö is [œ] or [ø], so the correct series should be:

ä [æ] å [æ] a+ [ç] ü [ü] ö [ø,œ]

3.2.4 Cairns

For Cairns (1976), two alternative orderings of the rules were equally probable:
 either 1. fronting, 2. metathesis, 3. umlaut formation, 4. elision
 or 1. metathesis, 2. vowel coalescence, 3. elision.

3.2.5 Anttila

Anttila (1989) relied only on “Churchward’s .. sometimes confusing description ... [and] imprecise characterization of Rotuman vowels and stress” (Besnier 1987:202). He assumed rightly that the Rotuman vowel system was not only expanded because of short form creation but other processes as well. But he was not right in claiming that (1989:110 and 114), “it is vital that the process of the ‘raising umlaut’ has occurred **before** creation of the short form” (see my reasons in section 3.5.2). Another of his assumptions is highly improbable, namely, “that the raising of /a/ to [æ] was completed before the fronting of /a/ before /i/ had occurred” (Anttila 1989:64). Both are results of the vowel merger after metathesis: /a/ + /e/ > /a+e/ > ä [æ], i.e. the raising¹⁴ of /a/ after its merger with /e/, and /a/ + /i/ > /a+i/ > å [æ], i.e. the raising of /a/ after its merger with /i/.

The short form is said to be built according to three rules, the first one of them “(fronting with umlaut formation and deletion of the final vowel) being complementary to the other two changes (metathesis and vowel shortening); so all three occupy the same position in the relative chronology.” For one thing, this is impossible since it requires metathesis to bring the two vowels next to each other before they can be shortened or changed into the Umlaut; on the other hand, vowel coalescence does not involve palatalisation only (the opposite process applies to /e+u/ and /a+u/).

3.2.6 Besnier

According to Besnier (1987:205) the “incomplete forms of Rotuman words are derivable from the complete forms through the following four processes:

¹³ The resulting umlaut in *låg* (< *laŋgi*) is [æ], and not [œ]. The same error cropped up in Biggs (see above).

¹⁴ The main thing is fronting and not – if it can be discerned at all - raising (cp. table 8).

- (6.1) a rule of metathesis inverting the order of the last vowel of the word and of the immediately preceding consonant, if there is one;¹⁵
- (6.2) a rule of vocalic assimilation that reduces certain vocalic pairs obtained through metathesis to a single vowel whose phonological characterization is a combination of the distinctive features of the two vowels in the underlying pair;
- (6.3) a rule of reduction that changes the first vowel of other vocalic pairs into a glide, thus reducing the underlying pair to a diphthong; and
- (6.4) a rule of length reduction that shortens clusters of similar vowels obtained from rule (6.1) to single vowels.”

After the application of rule (6.1) various vowel pairs develop (1987:208f):

- (6.3.1) “Vowel clusters consisting of a high vowel (/i u/) followed by a non-high non-back vowel (/e a/) reduce to a monosyllabic diphthong¹⁶ consisting of a glide that corresponds in roundness to the first underlying vowel, followed by the round vowel [ç].” This explanation is valid for the patterns /iCa/ and /uCa/, but unfortunately Besnier failed to identify endings with *-e* as variants (“narrow versions”, see section 3.5.3) of *-a*.
- (6.3.2) “Vowel clusters consisting of the mid-high vowels (/e o/) followed by /a/ or of the high vowels (/i u/) followed by /o/ reduce to a monosyllabic diphthong consisting of a glide that corresponds in roundness to the first underlying vowel, followed by the second underlying vowel.”

Churchward had described this reduction rule (6.3) in a more elegant way in his second declension, realising that the ablaut of /a/ to [ç] in V₂ was not part of short form derivation, but a later development.

- (6.2.1) A back vowel (/o u/) followed by /i/ and also /o/ followed by /e/ (i.e. oCi, oCe, uCi) are reduced to a single front rounded vowel [ø ü] whose height preserves the height of the first underlying vowel of the pair. The formation of umlaut is cyclical, i.e. it spreads to preceding identical vowels.
- (6.2.2) A low vowel (/a/) followed by the high vowel /i/ is reduced to [ɛ].¹⁷
- (6.4) All other vowel pairs were reduced to the first underlying vowel. He includes also umlauts such as *käs* < *käse* and *ha+s* < *ha+su*, since he assumed that the ablauts had already been present in the citation form before the derivation of short forms: “Clusters whose underlying form is /a(C)e/ will be fed into the metathesis rule as [ɛ(C)e], and those of underlying form /a(C)u/ and /a(C)i/, as [ç(C)u] and [ç(C)i] respectively” (Besnier (1987:207).

Besnier used two secondary vowels [ç] and [ɛ] as starting points or underlying vowels next to the five basic vowels in his scheme of rules. The Ablaut of the root vowel /a/ in the citation form is due to more recent partial regressive assimilation or copying of the pronunciation of the short form. Endings like [çC] or [æC] have not been created by elision of the final vowel but rather through metathesis and vowel coalescence. (See my rules 1 and 3 in section 3.3)

¹⁵ More relevant is that the final vowel is unstressed.

¹⁶ Isn't that what defines a diphthong, that it unites two vowels in one syllable?

¹⁷ I hear it as [æ].

3.2.7 Vamarasi

Vamarasi (1991:2) listed three processes with which to derive the short forms from the long ones, “depending on the order of the vowels in the penultimate and final syllable of a word “ (for words ending in CV). The order is less important than their quality. The three processes are metathesis, umlauting and vowel loss.

- (7.1) “Metathesis of final CV to VC occurs when the final vowel is lower than the penultimate. The resulting vowel combination develops into a diphthong” (Churchward’s second declension).
- (7.2) “The final vowel is deleted and the penultimate vowel becomes an Umlaut, if a back vowel in the penultimate syllable is followed by a front vowel in the final syllable. This rule must apply after metathesis because the combination of V₁ = /u/ and V₂ = /e/ is taken care of by metathesis rather than Umlaut formation.”
- (7.3) “The final vowel is deleted, if it is identical with the preceding one or ...”, and here she simply listed all other combinations without being able to summarise them.

In her analysis, the accent shift from the final syllable and the reduction of syllables in the short form are missing. The creation of umlauts in (7.2) is not a contrasting alternative to metathesis but rather a further step, once metathesis brought two vowels into the immediate vicinity of each other.

3.2.8 Geraghty

Geraghty (1995:933f) gave the following rules:

- (8.1) Metathesis of final vowel and of the preceding consonants
- (8.2a) Reduction of double vowels if V₁ = V₂ (e.g. *ala* → **aal* → *al*)
- (8.2b) Vowel elision: V₂ is elided except if V₁ is higher (e.g. *hifu* → **hiuf* → *hif* (identical with Milner’s second rule)
- (8.3) Creation of semivowels: if V₁ is higher than V₂, it becomes the appropriate semivowel (e.g. *aire* → *aier* → [a^hyer]).
- (8.4) Umlaut: a non-front vowel followed by a vowel which is not lower, becomes an umlaut:

| | | | | |
|------|---|-------|---|-------------------|
| -aCi | → | *-aiC | → | -æC |
| -oCe | → | *-oeC | → | -øC ¹⁸ |
| -oCi | → | *-oiC | → | -øC |
| -uCi | → | *-uiC | → | -üC |
- (8.5) Syllable reduction
- (8.6) Accent shift from penultimate to final syllable.

Geraghty’s model (1995:933f) is the best so far presented. Nevertheless, the order of his rules 8.3, 8.5 and 8.6 does not seem logical. The penultimate syllable had to lose the accent first (rule 8.6) before being deleted (rule 8.5). This accent shift in turn is the most probable trigger for the now unstressed penultimate vowel to become a semivowel (rule 8.3).

¹⁸ The resulting vowel should be transcribed as [œ].

Table 6 gives a simplified comparison of the major attempts at devising and ordering rules of short form derivation as far as they can be squeezed into a rigid frame:

Table 6: Different orders of rules for short form derivation

| rule no. | process | Geraghty 1995 | Vamara-rasi 1991 | Besnier 1987 | Cairns 1976 | Milner 1971 | Biggs 1965 | Churchward 1940 |
|----------|---|---------------|------------------|--------------|-------------|-------------|------------|-----------------|
| 1 | Metathesis | 1 | 1 | 2 | 2 | 3 | 2 | 3 |
| 2a | Deletion of V ₂ if identical with V ₁ | 2 | 3 | 5 | 4 | 2 | | 1 |
| 2b | Elision of V ₂ | 3 | 3 | 5 | 4 | 1 | | 1 |
| 3 | Vowel merger: | | | 3 | 3 | | | |
| | 3a umlaut formation | 5 | 2 | 3 | 3 | 4 | 4 | 2 |
| 3b | ablaut formation | | | | | 1 | | |
| 4 | Accent shift | 7 | 1 | | | | 3 | |
| 5 | Semivowel development | 4 | 1 | 4 | | | 4 | |
| 6 | Syllable reduction | 6 | 1 | | | | 5 | |
| 7a | Backing + rounding of /á/ to [ç] before /u/ | | | 1 | | 5 | 1 | |
| 8 | Fronting of /á/ to [æ] | | | 1 | 1 | 5 | | |
| 9a | Backing + rounding of /á/ to [ç] after /u/ | | | | | 5 | | |
| 10a | Raising + fronting of unstressed /a/ to [e] after /i/ | | | - | | | | |
| 11 | Extension of ablaut rules (7a,9a,10a) to the other high vowel (7b,9b,10b) | | | 1 | | | 1 | |

3.3 My attempt at devising and ordering rules

In my opinion, words with unstressed final syllable (i.e. ending in $-V_1CV_2$) form their short forms according to the following rules:

Rule 1: Metathesis

V_2 and C are interchanged: $V_1CV_2\# \rightarrow V_1V_2C\#$

Rule 1 applies to all 25 cases (in tables 3 and 4). Blevins (1991:2) ordered the rules in the same way, suggesting that the derivation of the incomplete phase included apparent metathesis of a final CV pair with following assimilation and deletion. Anttila (1989:64), on the other hand, assumed that there was no “direct evidence for the interim form, i.e. first metathesis, *futi* \rightarrow **fuit*, and then **fuit* \rightarrow *füt*”. But what else do short forms such as *hoál*, *puér*, *suák*, *tapiók* show? Only metathesis can have created the results of rule 5 and the umlauts from rule 3 equally well (see below).

Milner (1971:422) also recognised this and proposed to spell the short form always in a phonemic way with $-V_1V_2C\#$ finally, irrespective of its current pronunciation. That would require only the five basic vowels and no special characters for the umlauts and ablauts.

Table 7: Milner’s proposal for a new spelling of the Umlauts

| citation form in Churchward’s spelling | short form | pronunciation | short form in Milner’s spelling | gloss |
|---|------------|---------------|------------------------------------|----------------------|
| <i>mose</i> | <i>mös</i> | [mœs] | <i>moes</i> | ‘sleep’ |
| <i>futi</i> | <i>füt</i> | [füt] | <i>fuit</i> | ‘pull’ |
| <i>a+su</i> | <i>a+s</i> | [çs] | <i>aus</i> | ‘steam’ |
| <i>a+ti</i> | <i>ât</i> | [æt] | <i>ait</i> | ‘gather (shellfish)’ |

Milner’s spelling, however, would create additional homographs in the short form:

Table 8: Homographs as a consequence of Milner’s proposed phonemic spelling

| Milner’s proposal | pronunciation | could be mistaken for | pronunciation | explanation |
|-------------------|---------------|-----------------------|---------------|--|
| <i>moes</i> | [mœs] | <i>'omoes</i> | [/o»moes] | citation form of <i>'omoe</i> + interrogative suffix <i>-s</i> |
| <i>fuit</i> | [füt] | <i>fuit</i> | [»fuit] | citation form of <i>fui</i> + indefinite article <i>-t</i> |
| <i>aus</i> | [çs] | <i>'aus</i> | [» / aus] | short form of <i>'ausa</i> |
| <i>ait</i> | [æt] | <i>'ait</i> | [» / çit] | short form of <i>'aitu</i> |
| <i>tair</i> | [tær] | <i>ta+ir</i> | [tç»ir] | short form of <i>ta+iri</i> |

Rule 2 Deletion of the unstressed vowel V₂ (applies to 5 + 6 = 11 cases)¹⁹

consisting of

Rule 2a Shortening double vowels into a single one:

$$V_1CV_1\# \rightarrow *V_1V_1C\# \rightarrow V_1C\#$$

and

Rule 2b Deletion of the unstressed vowel V₂:

$$V_1CV_2\# \rightarrow *V_1V_2C\# \rightarrow V_1C\#$$

V₂ is deleted if V₁ is not further back than V₂ and if V₂ is not lower than V₁. When two identical vowels come to be next to each other, this does not result in a long vowel, but the double vowel is reduced to a single one. That is why I group these cases under elision and not coalescence (rule 3).

It is less probable that a stressed vowel is elided and therefore I think that after metathesis, the stress was still on V₁. I guess the accent shift was the fourth step (rule 4).

Table 9: Deletion of final vowel after metathesis

| citation form | metathesised form | short form | examples |
|---------------|-------------------|-------------------------|------------------|
| /áCo/ | → /*áoC/ | → [aC] | <i>rako, rak</i> |
| /éCi/ | → /*éiC/ | → /eC/ (often [´C, øC]) | <i>fesi, fes</i> |
| /éCu/ | → /*éuC/ | → /eC/ (often [´C, øC]) | <i>seru, ser</i> |
| /iCu/ | → /*íuC/ | → [iC] | <i>hifu, hif</i> |
| /éCo/ | → /*éoC/ | → [eC] | <i>he'o, he'</i> |
| /óCu/ | → /*óuC/ | → [oC] | <i>folu, fol</i> |
| /áCa/ | → /*áaC/ | → [aC] (not _C) | <i>fara, far</i> |
| /éCe/ | → /*éeC/ | → [eC] | <i>sere, ser</i> |
| /iCi/ | → /*iiC/ | → [iC] | <i>miji, mij</i> |
| /óCo/ | → /*óoC/ | → [oC] | <i>ono, on</i> |
| /úCu/ | → /*úuC/ | → [uC] | <i>lumu, lum</i> |

It could be argued that the short form endings at the top of the above table are the result of vowel merger (rule 3) rather than deletion, since /é/ followed by a high vowel (or a deleted one) is often pronounced like a high rounded central vowel; see Table 10.

Table 10: minimal pairs through vowel elision

| citation form | short form + article | pronunciation | gloss |
|---------------|----------------------|---------------|---------------|
| <i>sere</i> | <i>ser ta</i> | [»serta] | '(the) knife' |
| <i>seru</i> | <i>ser ta</i> | [»sørta] | '(the) comb' |

¹⁹ Similar to Churchward's first declension, cases 1-11 in Table 14.

Hocart (1919:255, Grace 1959:27f) gave mid-high allophones of /e/ and /o/, narrowed by a following high vowel. Churchward heard an allophone of /á/ when it was followed by a glottal consonant and /o/ and called it “posterior a.”

Rule 3 Vowel merger (applies to 6 cases)

V₁ and V₂ merge or coalesce

In other words, V₂ gives some of its qualities to V₁ and then drops out. This occurs either if V₂ is more fronted and not lower than V₁ or if V₂ is high and V₁ low. Thus there are two sub-rules:

Rule 3a Umlaut formation (applies to 3 cases: cases 15-17 in Table 14)

V₁ and V₂ merge into an umlaut if V₁ is a rounded back vowel [o u] and V₂ a front vowel which is not lower than V₁.

Rule 3b Ablaut formation (applies to 3 cases: cases 12-14 in Table 14)

V₁ and V₂ merge into an ablaut if V₁ is low (= [a]) and V₂ is a high (= [i u]) or a front vowel (= [i e]).

Thus five umlauts and ablauts result from metathesis and subsequent vowel merger:

Table 11a: Umlaut and ablaut formation through vowel merger (I)

| citation form | metathesised form | short form | examples |
|---------------|------------------------|------------------|-------------------------|
| /óCi/ | → /*óiC/ | → øC [øC] | <i>mori, mör</i> |
| /óCe/ | → /*óeC/ | → öC [œC] | <i>tole, töl</i> |
| <u>/úCi/</u> | <u>→ /*úiC/</u> | <u>→ üC [üC]</u> | <u><i>kuji, küj</i></u> |
| /áCu/ | → /*áuC/ | → a+C [çC] | <i>ha+fu, hα+f</i> |
| /áCi/ | → /*áiC/ ²⁰ | → âC [æC] | <i>sa+si, säs</i> |
| /áCe/ | → /*æeC/ | → äC [æC] | <i>päre, pär</i> |

In other words:

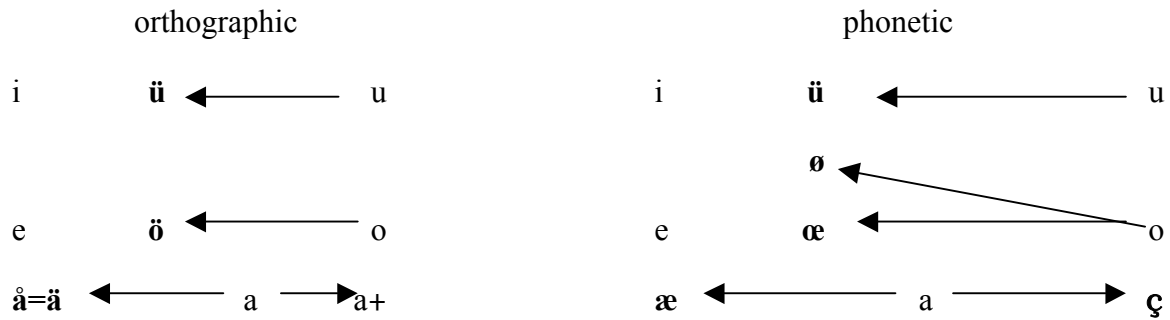
Table 11b: Umlaut and ablaut formation through vowel merger (II)

| V ₁ | + | V ₂ | | merged vowel | change | feature |
|----------------|---|----------------|---|--------------|---|-----------------|
| a | + | e,i | → | ä,â | V ₁ is fronted | +front |
| a | + | u | → | a+ | V ₁ is rounded and backed | +round +back |
| o | + | e,i | → | ö | V ₁ is fronted and stays rounded | +front |
| u | + | i | → | ü | | |

Diagram 2 shows the five new vowels which have arisen out of V₁ due to metathesis and subsequent merger with V₂:

²⁰ And not -*çiC.

Diagram 2: Umlaut and ablaut creation



It becomes evident from this diagram how exceptional the backing of /a/ to [ç] is.

Within this rule, the “real” umlauts (*ö* and *ü*) constitute a special group. The assimilation of preceding identical vowels (“spreading”) is obligatory in their case, but for the ablauts *ä* and *å* only optional, for [ç] formed out of *a+u* unusual (see Blevins (1991:2):²¹ *puluŋi* → *pülüŋi*, *konosi* → *könös*; but *hahara+gi* (not ***ha+ha+ra+gi*) → *haharåg* (not ***håhåråg*), *kana+pu* (not ***ka+na+pu*) and *hagäe* (not ***hägäe*). *‘anasi* (not *** ‘a+na+si*) → *’anås* (not *** ‘ånås*).

Cairns had not heard the language spoken and thus claimed incorrectly that “[æ] occurs only in exactly those short forms that also contain an [æ] in their citation form” (1976:274). [æ] in short forms goes back to an original /a/ in the citation form with a following front vowel which later changed into one of the ablauts [æ] or [ç] (see section 3.5). This process has also produced minimal pairs in the short form rendering it impossible today to re-develop the underlying citation form unambiguously from every short form:

Table 12: minimal pairs through ablaut

| gloss | short form | citation form ending in a front vowel | | | |
|----------|-------------|---------------------------------------|--------|--------------|---------|
| ‘banana’ | <i>pår</i> | [pær] | /pari/ | <i>pa+ri</i> | [>pçri] |
| ‘guard’ | <i>päre</i> | [pær] | /pare/ | <i>päre</i> | [>pære] |

The unstressed high vowels in final position are deleted after metathesis, usually with umlauting of the root vowel. Similarly, in Tongan, “high vowels have productive voiceless allophones if they (1) are short and unstressed, (2) follow a voiceless consonant, (3) are situated in final position of a morpheme and (4a) stand at the end of an utterance or (4b) precede a voiceless consonant. The low vowel /a/ is devoiced under conditions 1,3,4 (though only following /h/), but oddly not the mid vowels” (Feldman 1978:137).

Rule 4 Accent shift (applies to all cases)

In Rotuman, the accent is usually placed on the penultimate syllable (of the citation form). In the short form, it shifts to the final syllable. The accent shift to the right is a decisive marker of

²¹ Later, the root vowel /a/ in long forms was also changed: before unstressed high vowels (*á(C)u* and *á(C)i*), it was backed and rounded to *a+* [ç] (rule 7) and before /e/ (*á(C)e*), it was fronted to *ä* [æ] (rule 8).

Rotuman metathesis. Based on the incomplete description by Churchward,²² Cairns cited examples such as *tíko* → *tíok* (1976:273), but the short form of words like /tíko/ is [tyok] derived from */tíók/. Later (1976:274) he even formulated “a rule that assigns stress to every penultimate vowel”. This is correct, but only in the citation form, and only when the final vowel is short (Churchward 1940:85). All Cairns’ examples of short forms (1976:275) have the accent on the final instead of the penultimate vowel.

The accent shift cannot have occurred before the elision of V₂ (rules 2 and 3) because a stressed vowel is less likely to be dropped than an unstressed one. The reduction of V₁ to the corresponding semivowel (rule 5) can best be explained if V₁ lost the stress first and then the accent shifted to V₂.

Rule 5 Semivowel formation (applies to 8 cases: cases 18-25 in Table 14)

If V₁ is higher than V₂, it will be changed into the corresponding semivowel (i.e. front vowels to [y], back vowels to [w]), as illustrated in Table 13.

Table 13: Semivowel formation

| ending of citation form | ending of metathesised form (rule 1) | ending of short form accent shift (rule 4) | ending of short form semivowel formation (rule 5) |
|-------------------------|--------------------------------------|--|---|
| /íCe/ | → /*íeC/ | → iéC | → [yeC] (often [y´C]) |
| /íCo/ | → /*íoC/ | → ióC | → [yuC] |
| /íCa/ | → /*íaC/ | → iáC | → [yaC] |
| /úCe/ | → /*úeC/ | → uéC | → [weC] (often [w´C]) |
| /úCo/ | → /*úoC/ | → uóC | → [woC] |
| /úCa/ | → /*úaC/ | → uáC | → [waC] |
| /éCa/ | → /*éaC/ | → eáC | → [yaC] |
| /óCa/ | → /*óaC/ | → oáC | → [waC] |

Biggs and Besnier described this correctly. Besnier (1987:211f) and Blevins (1994:492) made a little mistake though. They mistook the cases of ablaut with -e (deriving from -a) for the citation forms of short forms ending in -a+C [çC] (see section 3.5.3). The short forms given by Besnier were correct, namely [tyçf], [hwçN] etc., but they derive from an underlying long form ending in /a/ (*tifa* and *huga*) and not their variants (*tife* and *huge*). Words ending in /iCe/ and /uCe/ have short forms ending in /ieC/ and /ueC/ respectively. Thus:

Besnier (1987) should be corrected as follows:

| citation form | short form | citation form | short form |
|---------------|------------|---------------|-----------------------|
| iCe | → [yçC] | iCa | → [yçC] |
| | | iCe | → [yeC] ²³ |

²² For example: “The stress seems to be levelled out, [...] *fora* becomes *foar*, which is pronounced almost, though perhaps not quite, as one syllable, the stress being evenly distributed” (Churchward 1940:86).

²³ Often these endings of the short forms are also pronounced with shwa: [y´C] and [w´C].

uCe → [wɤC]

uCa → [wɤC]
uCe → [weC]

Rule 6 Syllable reduction (applies to all 25 cases)

The deletion of the final syllable is a result of the elision of V₂ (rules 2+3) or the weakening of V₁ into a semivowel (rule 5).²⁴

Summary

In Table 14 I summarise in which cases and in which order the above-mentioned rules apply.

24 Cp. a similar development in Tongan: “The frequency and regularity of voiceless vowels in words of all origins [including loanwords], moreover, lead one to believe that Tongan is well on its way to developing closed syllables” (Feldman 1978:138).

Table 14: Order of the rules to create the endings of the short forms

| ending of citation form | rules | | | | | examples |
|-------------------------|-------|---------------|----------|-----|------------|--------------------|
| | 1. | 2. | 3. | 4. | 5. | |
| 1. áCa | *áaC | [aC] (not _C) | | | | <i>fara, far</i> |
| 2. éCe | *éeC | [eC] | | | | <i>sere, ser</i> |
| 3. íCi | *íiC | [iC] | | | | <i>miji, mij</i> |
| 4. óCo | *óoC | [oC] | | | | <i>ono, on</i> |
| 5. úCu | *úuC | [uC] | | | | <i>lumu, lum</i> |
| 6. áCo | *áoC | [aC] | | | | <i>rako, rak</i> |
| 7. éCo | *éoC | [eC] | | | | <i>he'o, he'</i> |
| 8. íCu | *íuC | [iC] | | | | <i>hifu, hif</i> |
| 9. óCu | *óuC | [oC] | | | | <i>folu, fol</i> |
| 10. éCi | *éiC | eC | | | | <i>fesi, fes</i> |
| 11. éCu | *éuC | eC | | | | <i>seru, ser</i> |
| 12. áCe | *áeC | | äC [æC] | | | <i>päre, pär</i> |
| 13. áCi | *áiC | | âC [æC] | | | <i>sa+si, sàs</i> |
| 14. áCu | *áuC | | a+C [çC] | | | <i>ha+fu, ha+f</i> |
| 15. óCe | *óeC | | öC [œC] | | | <i>tole, töl</i> |
| 16. óCi | *óiC | | øC [øC] | | | <i>mori, mör</i> |
| 17. úCi | *úiC | | üC [üC] | | | <i>kuji, küj</i> |
| 18. éCa | *éaC | | | eáC | [yaC] | <i>pera, pear</i> |
| 19. íCa | *íaC | | | íáC | *yaC [yçC] | <i>lima, lia+m</i> |
| 20. íCe | *íeC | | | íéC | [yeC] | <i>aire, aier</i> |
| 21. íCo | *íoC | | | ióC | [yoC] | <i>tiro, tior</i> |
| 22. óCa | *óaC | | | oáC | [waC] | <i>mofa, moaf</i> |
| 23. úCa | *úaC | | | uáC | *waC [wçC] | <i>usa, ua+s</i> |
| 24. úCe | *úeC | | | uéC | [weC] | <i>pure, puer</i> |
| 25. úCo | *úoC | | | uóC | [woC] | <i>ulo, uol</i> |

The following tables show which phonological processes apply to which vowel pairs. The abbreviations mean: **E** = elision of the final vowel (rule 2b), **S** = shortening of identical vowels (rule 2a), **M** = semivowel development after metathesis (rule 5), **U** = Umlaut (rule 3a), **A** = Ablaut (rule 3b).

Table 15a-c: endings of short forms, arranged by phonological processes

| | | | | | |
|------------------|----------|-----|----------|----------|----------|
| V ₂ = | /i/ | /u/ | /e/ | /o/ | /a/ |
| V ₁ | | | | | |
| = | | | | | |
| /i/ | S | E | M | M | M |
| /u/ | U | S | M | M | M |
| /e/ | E | E | S | E | M |
| /o/ | U | E | U | S | M |
| /a/ | A | A | A | E | S |

| | | | | | |
|------------------|----------|----------|----------|-----|-----|
| V ₂ = | /i/ | /e/ | /u/ | /o/ | /a/ |
| V ₁ | | | | | |
| = | | | | | |
| /a/ | A | A | A | E | S |
| /o/ | U | U | E | S | M |
| /u/ | U | M | S | M | M |
| /e/ | E | S | E | E | M |
| /i/ | S | M | E | M | M |

| | | | | | |
|------------------|-----|-----|----------|----------|------------|
| V ₂ = | /e/ | /a/ | /i/ | /o/ | /u/ |
| V ₁ | | | | | |
| = | | | | | |
| /e/ | S | M | E | E | E |
| /a/ | A | S | A | E | E/A |
| /i/ | M | M | S | M | E |
| /o/ | U | M | U | S | E |
| /u/ | M | M | U | M | S |

3.4 Metathesis or not?

Is it really metathesis which is involved, or is it rather the anticipation of the final vowel with its subsequent deletion as Anttila thought? Since metathesis is still productive, one can analyse what happens to loanwords.

The shape of many terms borrowed from English with their closed final syllable resembles a short form in Rotuman. Consequently they are first adopted as such into the Rotuman lexicon, which is completely natural, since in the spoken language the short forms are much more common than the long ones. “This altered or construct form of the words is the one in which they are the most commonly heard” (Hale 1846:469). Hocart remarked on this practice (1919:263): “This is the natural tendency of the White Man; for as most words in any sentence are in the construct, it is the form he learns first; when the absolute [case] does occur he does not take much notice of it.” The Catholic missionaries also had initially written all words in their short form – whereas the Methodists first wrote only long forms.

The derivation process is inverted here. When people need a citation form of these loanwords, they have to create it completely anew using the same rules in the reverse order. In most cases this simply means to add (rule 2a) an echo vowel (a copy of the vowel of the final syllable) to the final consonant: i.e. from *kap* ‘cup’ we make *kapa*; compared to *kapa* ‘copper’ which was incorporated as a citation form into Rotuman.

| | | |
|---------------------|-------------|------------------------|
| English source word | borrowed as | later created form |
| ‘cup’ | <i>kap</i> | long form: <i>kapa</i> |
| ‘copper’ | <i>kapa</i> | short form: <i>kap</i> |

If the vowel of the final syllable of the loanword is not one of the five basic vowels, it is regarded as an umlaut or ablaut and re-cut into two vowels according to the above-mentioned rules. Semivowels are formed back into their corresponding high vowels. This is another example how the process of metathesis was reversed (see also Hocart 1919:258).

Table 16: examples of later created citation forms (“back formation”) of loanwords²⁵

| rule no. | English source word | short form | citation form |
|----------|---------------------|--------------------------|--------------------------------------|
| 2a | onion | <i>‘anian</i> [/a»nyan] | /’aniana/ <i>‘aniana</i> |
| 3b | horse | <i>ha+s</i> [hçs] | /hasu/ <i>ha+su</i> |
| 3b | Christmas | <i>kesmås</i> [kes»mæs] | /kesmasi/ <i>kesma+si</i> |
| 3b | nurse | <i>nås</i> [næs] | /nasi/ <i>na+si</i> |
| 3b | salmon | <i>sämån</i> [sæ»mæn] | /samane/ <i>sämåne</i> |
| 3c | shirt | <i>sõt</i> [sõt] | /soti/ <i>soti</i> |
| 5 | tapioca | <i>tapiok</i> [ta»pyok] | /tapiko/ <i>tapiko</i> ²⁶ |
| 4,5 | whip | <i>uef</i> [w’f] | /ufe/ <i>ufe</i> |
| 4,5 | wharf | <i>ua+f</i> [wçf] | /ufa/ <i>ufa</i> |
| 4,5 | watch | <i>ua+j</i> [wçtS] | /uja/ <i>uja</i> |

Today, even native speakers have difficulties in trying to remember the citation form or re-develop it correctly from short forms:

²⁵ Several (directly inherited) pronouns have also created their citation form later, e.g. *gou-a* < *gou* “I” (< PCP **au*), *‘äe-a* < *‘äe* “you (2SG)” (< PCP **koe*), *sei-a* < *sei* “who?” (< PCP **z(a,e)i*), *tei-a* < *tei* “where?” (also *iris-a*, *‘aus-a*, *‘a8mis-a*, etc. Churchward (1940:159) assumed correctly that here *-a* was suffixed later to construct citation forms analogous to the other pronouns.

²⁶ Geraghty (1995:933) illustrated his rule of metathesis unfortunately with this example, *tapiko* > *tapiok*, whereas it had developed in exactly the opposite direction.

Table 17: Incorrect back-formation of short forms

| short form | | citation form | | | gloss |
|--------------|----------------------|--------------------------|---------------|---------------|-------|
| spelling | pronunciation | erroneous back-formation | correct form | | |
| <i>kekes</i> | [k' »k' s, ki »kø s] | [ki »kosi] | <i>kekesi</i> | shellfish sp. | |
| <i>es</i> | [ø s] | [»osi] | <i>esu</i> | papaya | |
| <i>ser</i> | [sø r] | [»sori] | <i>seru</i> | comb | |

Some unexpectedly different final vowels in Rotuman may have been the result of erroneous back-formation. Another form (reflex of a protoform or related to forms in neighbouring languages) can equally well be re-developed out of the current short forms.

Table 18: Comparative evidence for an originally different final vowel

| short form | | current | via | comparable | gloss |
|---------------|---------------|-----------------|------|------------------------|---------------|
| spelling | pronunciation | citation form | rule | form | |
| <i>alel</i> | [a »le l] | <i>alele</i> | 2b | PCP */ <i>alelo</i> | ‘tongue’ |
| <i>‘anås</i> | [/ a »næs] | <i>‘ana 8si</i> | 3b | PCP */ <i>kanace</i> | ‘mullet’ |
| <i>teg</i> | [»te N] | <i>tegi</i> | 2b | PCP */ <i>degu</i> | ‘nod’ |
| <i>köt</i> | [»kø t] | <i>koti</i> | 3a | SF <i>kote</i> | ‘coat’ |
| <i>kapkap</i> | [kap »kap] | <i>kapkapo</i> | 2 | PPn */ <i>kapakapa</i> | ‘flutter’ |
| <i>lag</i> | [»la N] | <i>laga</i> | 2 | PEO */ <i>laNo</i> | ‘fly (n)’ |
| <i>mak</i> | [»mak] | <i>maka</i> | 2 | Tongan <i>mako</i> | ‘dance, sing’ |

Table 19: More comparative evidence for an originally different final vowel

| related or proto form | Early Rotuman | current short form | via rule | current citation form | gloss |
|-----------------------|---------------|--------------------|----------|-----------------------|-------------|
| PCP */ <i>viza</i> | <i>*hisa</i> | <i>his</i> | 2b | <i>hisi</i> | ‘how many?’ |
| PCP */ <i>giza</i> | <i>*kisa</i> | <i>kis</i> | 2b | <i>kisi</i> | ‘when?’ |

Hale had noted 150 years ago (1846:470): “The law which prevails in the Polynesian dialects by which two consonants never occur without a vowel between them, does not apply to this tongue.” In Rotuman, consonant pairs could arise at morpheme boundaries within compound words: “Compound words generally have two successive consonants at the point of suture, which gives the language a very un-Polynesian sound” (Hocart 1919:257).

All morphemes or elements of a compound are usually in their short form save the last one. Its shape (or “phase”) determines whether the whole word is definite or indefinite (Churchward 1940:88).²⁷ Consonant pairs are created by metathesis of the non-final elements: *fion-garo* ‘wish’

²⁷ Therefore Cairns was not right claiming (1976:272) that “citation forms have only open syllables.” Cp. the examples of *takmül’ a 8ki* < *taka* + *muli* + - *‘a 8ki*, *a ‘vavhina* < *a ‘a-* + *vava* + *hina*, etc.

(< PPn **fina-galo*), *fat-manava* ‘heart’ (< PPn **fatu-manava*), *täh-roro* ‘fermented coconut sauce’ (< PPn **tahi + *lolo*), *puakva+i* ‘tree sp.’ (< PPn **puka-wai*).

Blevins (1991:3, no.11) correctly broke up *tutkai* ‘thin’ into *tutV + kai* and *fofkoa* ‘snail sp.’ into **fofV + koa*.²⁸ Loanwords like *jesle#* ‘chisel’ (Blevins 1994:493) were incorporated into the Rotuman lexicon as compounds, e.g. consisting of two mora, **jese+le#*, and then regularly transformed into *jesle#*.

Contrary to this rule, Churchward’s first rule (1940:88), there is a number of polysyllabic words in Rotuman with non-final elements apparently in their citation form. These constitute about one fourth of all lexemes of more than two syllables. Churchward (1940:89,156.6) was able to explain a few of these exceptions as contractions (*ferehiti* < *fer ‘e hiti*, *figalelei* < *fiongar lelei*). Still others are onomatopoeic (*karar_* ‘snore’, *murur_* ‘rush’ et al.), while a third group is borrowed (*kato ‘aga* ‘feast’, *matuataliga* ‘hammerhead shark’, *tamamu ‘a* ‘cheeky’, etc.). But other polysyllabic loanwords such as *fatmanava* (< *fatu+manava*) ‘heart’, *firmoto* ‘tree sp.’ (< PPn **filimoto*), *fütporo* ‘football’ (< *futi+poro*) adhere to the rule. Modern loanwords like *rakap_* ‘rugby’ are not subjected strictly any more to this and other morphological rules of Rotuman.

In songs and poetry, the non-final morphemes are also transformed into their long form (Churchward’s “plenary phase”) because open syllables are more convenient for singing and recitals.

Table 20: Examples of poetic forms (“plenary phase”, Churchward 1940:100)

| short form | citation form | poetic long form | gloss |
|-----------------|------------------|-------------------|-------|
| <i>fatmanav</i> | <i>fatmanava</i> | <i>fatumanava</i> | heart |
| <i>ka+t’äk</i> | <i>ka+t’a+ki</i> | <i>katu’a+ki</i> | mourn |
| <i>fürmaria</i> | <i>fürmaria</i> | <i>furimaria</i> | happy |

3.5 Other processes responsible for vowel change (Ablaut)

Aside from metathesis, other phonological processes were and are active in Rotuman which also produce allophones of /a/. In my opinion, they are partly analogous to short form creation, but must have started later.

²⁸ According to rule 2, V can here only mean a rounded back vowel [o,u].

3.5.1 Partial regressive assimilation

In section 3.2.3 it was shown how the allophone [ç] was created out of *a+u* and [æ] from *a+e* and *a+i* in the course of metathesis. Later the pronunciation of the short form was copied onto the root vowel [a] in the underlying *citation form*:

| citation form | | short form | citation form |
|----------------------|--------------|---------------------|---------------|
| /áCu/ → /a+Cu/ [çCu] | analogous to | /a+C/ [çC] ← /*áuC/ | ← /áCu/ |
| /áCe/ → /äCe/ [æCe] | analogous to | /äC/ [æC] ← /*áeC/ | ← /áCe/ |

Even without an intervening consonant, i.e. in vowel pairs and diphthongs, /a/ assimilates partly before a following /u/ or /e/:

/áu/ → /a+u/ [çu, çw]
 /áe/ → /äe/ [æe, æy]

We can formulate rules 7 and 8 accordingly (cp. Geraghty 1995:934):

Rule 7a /á/ → [ç] /_(C)u

/a/ in stressed syllable assimilates to an indirectly or immediately following /u/ to become [ç].

Rule 8 /á/ → [æ] /_(C)e²⁹

When indirectly or immediately followed by /e/, /a/ in stressed syllable assimilates partly to become [æ] (exceptions see Churchward 1940:76).

Besnier (1987:206) stated correctly that this is an “assimilatory process independent of the process of metathesis,” but he forgot to mention a crucial condition for the application of this process: namely that the /a/ in question must be stressed. This applies to only half of his examples under (6): /váve/ and /váe/ became *väve* [»væve] and *väe* [væy], but /faéga/ is not stressed on the /a/ and only turned into *fäega* [fæ»eNa] because it probably derived from /*fäe + ga/ (cp. *päre-ga* ‘protection’ < *päre* ‘guard’). The fourth example is *mané’a* ‘play’, which is not pronounced *[mæ»ne/a]; in the short form *manéa* there is a variant [mæ»nya/].³⁰

3.5.2 Backing

In words ending in /áCi/, the pronunciation of the root vowel in the short form (-áC [æC] < *-aiC < -áCi) is not copied to the long form, but the stressed /á/ is backed to [ç] by a following /i/ just as if it were followed by the other high vowel [u]:

/áCi/ → a+Ci [çCi] analogous to /áCu/ → a+Cu [çCu]

Similarly in diphthongs and vowel pairs:

/ai/ → a+i [çi, çy] analogous to /áu/ → a+u [çu, çw]

Thus we can write another rule:

²⁹ Similarly Blevins’ rule IV (1994:492): /á/ → æ /_C₀e and rule V: /a/ → æ /_e.

³⁰ In some cases, the ablaut also crops up in unstressed syllables: *ha 8mía*, *fä’ére*, et al.

Rule 7b /á/ → [ç] / _ (C)i

and merge **rule 7a** (backing of /a/ to [ç] before /u/)³¹ and **7b**:

Rule 7 /á/ → [ç] / _ (C)V_{high} or /á/ → [ç] / _ (C){i,u}

Expressed in binary features:

| | | | | | | |
|------------|---|----------------------|----------|----------------------|---|------------|
| [ç] | ← | adjacent to <i>i</i> | <i>a</i> | adjacent to <i>u</i> | → | [ç] |
| | | [i] | | [u] | | |
| [+back] | | [-back] | | [+back] | | [+back] |
| [+rounded] | | [-rounded] | | [+rounded] | | [+rounded] |
| [-high] | | [+high] | | [+high] | | [-high] |

By keeping Churchward’s spelling it is possible to derive the citation form from the short form, which is not possible when following phonetic transcription: *tāk* [tæk] < *ta+ki* vs. *täk* [tæk] < *täke*.

While the shift from /a/ (low central vowel) before /u/ (high back vowel) to [ç] (low back vowel) is phonologically natural and constitutes a partial assimilation, the contrary can be said for /a/ before /i/ (high front vowel) becoming [ç]. This sound change prompts me to conclude that metathesis occurred first and the other phonological processes afterwards (according to the **rules 7 and 8**). The derivation of the ending [æC] via *[aiC] from the long form /áCi/ seems more natural than a development via *[çiC] and [çCi] from /áCi/. Later, after metathesis had become well-established in Rotuman, **rule 7b** created an ablaut in the citation form from /áCi/ to [çCi], parallel to the one of /áCu/ to [çCu].³²

While the ablaut of /a/ in **rule 7** until now only occurred when a stressed /a/ was followed by high vowels (rising diphthong), the same ablaut also appears in the short form if an originally unstressed /a/ receives the stress after metathesis and follows immediately after a high vowel (falling diphthong):

| citation form | | short form | | example | |
|---------------|---|------------|---|----------|-----------------------------|
| | → | phonemic | → | phonetic | |
| /úCa/ | → | /uáC/ | → | [wçC] | <i>hula</i> → <i>hua+l</i> |
| /íCa/ | → | /iáC/ | → | [yçC] | <i>píja</i> → <i>píja+j</i> |

These rules can be written as follows:

Rule 9a /á/ → [ç] / u_C

Rule 9b /á/ → [ç] / i_C

and summarised into one:

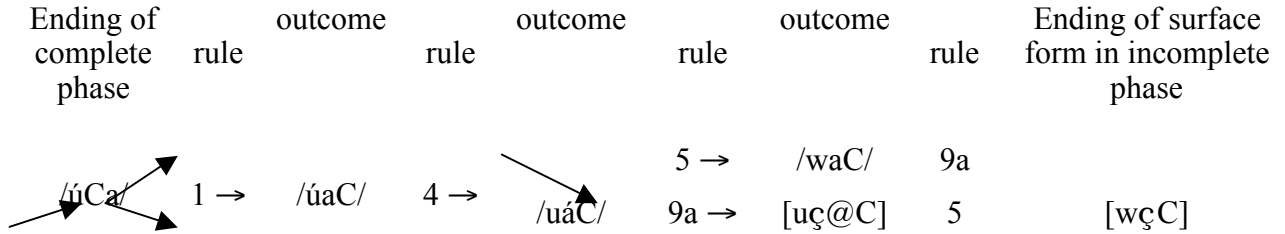
Rule 9 /á/ → [ç] / V_{high}_C or /á/ → [ç] / {i,u}_C

³¹ Similar to Blevins’ rule III (1994:492): /a/ → ç / _C₀{i,u}.

³² Anttila (1989:63) separated Churchward’s *a8* into /a8/ from a/_i and /ç/ from a/_u and thought both were “unambiguously analysable as sequences of two morphophonemes.” Their origin is certainly different, but phonetically both Umlauts are identical and were written by Churchward the same way (*a8*).

The question is how /úaC/ changed into contemporary [wç@C]? Two different ways seem possible:

Table 21: Possible paths of Rotuman ablaut



After metathesis and accent shift, either /a/ assimilated partly to the preceding /u/ and then the unstressed high vowel was weakened to a semivowel (rule 5) or vice-versa. Since high vowels are at the centre of so many morphophonemic changes in Rotuman, I assume that /u/ first caused /á/ to be backed (rule 9a) before becoming itself weakened to [w] (rule 5). Later the rule was applied to the other high vowel as well.

These forms are in contrast with words with vowel pairs in their root syllable whose final (non-high) vowel is deleted in the short form. A minimal pair is e.g.:

| | | | | |
|-----|---------------------|-----------------|---------------|--------------|
| | short form | | citation form | gloss |
| | surface form | underlying form | | |
| | <i>pua+k</i> [pwçk] | ← /puák/ | ← /púka/ | ‘vine, rope’ |
| vs. | <i>puak</i> [pwak] | ← */puaák/ | ← /puáka/ | ‘pig’ |

Perhaps the formerly geminate vowel prevented /a/ in the bottom line from being backed.

3.5.3 e-forms

A final (and **unstressed**) /a/ in the long form of words with a stressed high vowel in penultimate syllable (root syllable) is often raised and fronted to [e]. Churchward called this *e*-form “narrow version” (1940:14, 87f).³³ “The *a*-form conveys the idea of bigness or plurality, while the *e*-form conveys the idea of smallness or singularity” (Churchward 1940:87). In the incomplete phase, both *a*- and *e*-forms occur if there is no intervening consonant (other than /h /l/); otherwise, only the *a*-form occurs:

Table 22: *e*-forms

| | | | | | |
|--|----------------|----------------|------------------|----------------|-------|
| | complete phase | | incomplete phase | | gloss |
| | <i>a</i> -form | <i>e</i> -form | <i>a</i> -form | <i>e</i> -form | |

³³ In section 3.2 I mentioned that Besnier (1987:208) had been mistaken in listing *tife* and *huge* as examples of roots with final /e/. Their citation form ends in /a/, but the forms with an *e*-Ablaut are used much more often on the surface. The same applies to his example no. 10 on p.208: When he took *tife* and *huge* as the underlying roots of *tifa* and *huga*, why not do the same to the other three examples, *pije*, *puke*, *kuruge*?

| | | | | |
|---------------|---------------|----------------|---------------|----------------|
| <i>pija</i> | <i>pije</i> | <i>pia+j</i> | – | ‘rat’ |
| <i>huga</i> | <i>huge</i> | <i>hua+g</i> | – | ‘mind’ |
| <i>i’a</i> | <i>i’e</i> | <i>ia+’</i> | <i>ie’</i> | ‘fish’ |
| <i>tupu’a</i> | <i>tupu’e</i> | <i>tupua+’</i> | <i>tupue’</i> | ‘immortal man’ |
| <i>keia</i> | <i>keie</i> | <i>keia</i> | <i>keie</i> | ‘poor’ |
| <i>hanua</i> | <i>hanue</i> | <i>hanua</i> | <i>hanue</i> | ‘land’ |

Rule 10 /a/ → [e] /V_{high}(C)_

consisting of

Rule 10a /a/ → [e] / i(C)_

Rule 10b /a/ → [e] / u(C)_

I think this rule started out as partial progressive assimilation (rule 10a), similar to the Tongan regressive case (see below). Later it was extended to instances of the other high vowel (rule 10b), although it cannot be called assimilation any more, quite the contrary. This extension is parallel to the rule 7 of backing and rounding /a/ to [ɔ̣] which started off as a partial regressive assimilation (rule 7a) before it was applied to instances of /a/ before the other high vowel ([i]) as well (rule 7b). Chronologically, rules 10b and 7b may inhabit the same slot.

Until now, most phonological changes concerned stressed /a/, but here it is the unstressed /a/ in final position. Raising or partial assimilation of /a/ to preceding high vowels seems comparable to vowel raising in Tongan which also affects /a/ only and mainly results in partial regressive assimilation to a following high vowel: Proto-Tongic *a became Tongan [e] next to front vowels and [o] next to back vowels (Pawley 1966:57, Biggs 1971:483; Tovey 1993). Tovey counted 75 cases of raising, of which only 16% constituted progressive assimilation, the remainder being regressive (even though he confused the terms). In Tongan as well as Rotuman, it is not relevant whether there is an intervening consonant or not. “Unstressed /a/ is often raised in the environment of a non-low vowel, a rule which yields morphophonemic alternation in reduplications, e.g. *pelepela*, *monumanu*, *hinehina* and compounds, e.g. *ta’e* ‘excrement’, *te’elango* ‘fly’s excrement, wax, candle’ (Geraghty 1995:939). Cp. Some examples of Tongan ablaut:

Table 23: loanwords in Rotuman without Tongan ablaut o/e < *a

| Rotuman | Tongan | East ‘Uvean | Samoan | gloss |
|------------------|-----------------------|-----------------|-----------------|----------------------------------|
| <i>kaʒrkaʒru</i> | <i>kolukalu</i> | <i>kalukalu</i> | <i>‘alu’alu</i> | ‘jellyfish’ |
| <i>matua’rau</i> | <i>motulau</i> | - | <i>matu#lau</i> | ‘fish sp. (<i>Parupeneus</i>)’ |
| <i>maʒunu</i> | <i>mounu</i> | <i>mounu</i> | <i>ma#unu</i> | ‘bait’ |
| <i>telua</i> | <i>luo</i> | <i>luo</i> | <i>lua</i> | ‘hole (in ground)’ |
| <i>‘aʒitu</i> | <i>‘eitu/matupu’a</i> | - | <i>aitu</i> | ‘God’ |

Since Rotuman has borrowed heavily from Tongan and other West Polynesian languages, it might be conceivable that some morphophonemic changes were also due to Tongan influence. But which change was triggered by the Tongan ones?

Table 24: Comparison of Tongan and Rotuman vowel changes

| rule | Tongan | Rotuman | rule |
|------|---------------------------------------|------------------------|------------|
| T1 | /a/ → [o] / _ (C) {o,u} ³⁴ | /á/ → [ç] / _ (C)u | R7a |
| T2 | /a/ → [e] / _ (C) {e,i} | /á/ → [æ] / _ (C)e | R8 |
| T3 | devoicing of final vowel | elision of final vowel | R10a R2 |

| Rule | changes | environment / conditions | assimilation |
|------|---------------------------------------|---|--------------|
| T1 | backing + raising + rounding | before a back rounded vowel | regressive |
| R7a | backing + rounding | before a high back rounded vowel | regressive |
| T2 | fronting + raising | before a front vowel | regressive |
| R8 | fronting | before a mid-high vowel | regressive |
| R10a | fronting + raising | after a high front vowel | progressive |
| T3 | devoicing of high vowel ³⁵ | if the high vowels (1) are short and unstressed, (2) follow a voiceless consonant, (3) are situated in final position of a morpheme and (4a) stand at the end of an utterance or (4b) precede a voiceless consonant | lenition |
| R2 | elision of final vowel | V ₂ is deleted if it is identical with V ₁ or if V ₁ is not further back than V ₂ and if V ₂ is not lower than V ₁ | progressive |

I think that R7a and R8 are simply extensions of vowel changes from the short form to the less frequently used long form. Rotuman ablaut formation is not comparable to Tongan ablaut but

³⁴ “In Tongan *a* unaccented becomes *o* when the next vowel is *u*, though a consonant may intervene. (I first saw this rule formulated by A.M. Hocart “Man”, vol. XV, p. 149 note). This change is still going on: *tanu* ‘bury’, has a passive *tanu-mia*, which is frequently pronounced *tonu-mia*” (Collocott 1922:187).

³⁵ The low vowel /a/ is devoiced under conditions 1,3,4 (though only following /h/), but oddly not the mid vowels.

constitutes an independent parallel development. Deletion of final vowel (R2) is part of a larger process (short form derivation) which started several centuries ago whereas devoicing of final vowels in Tongan seems to be a more recent development.

4 Morphological aspects of suffixation and metathesis

Rotuman affixes can be distinguished in several ways, e.g. whether they are directly inherited or borrowed and whether they are still productive or fossilised. Suffixes especially can be further grouped into those which are attached to the short form or incomplete phase of a root word and others which cling on to the complete phase or citation form of a root. The last case violates a fundamental rule of Rotuman morphology, that all morphemes in a compound must be in their incomplete phase except the last one. That is why suffixes have to be included in a discussion of Rotuman short form derivation since some of them can be attached to the complete phase of a root.

Table 25: Suffixation and stress placement

| Accent | root word | | Gloss | suffix type | productive ones | | Gloss |
|-------------------------------------|---------------|--------------|-------------|-----------------|-----------------------------------|------------------|----------------------|
| | citation form | short form | | | added to | | |
| | | | | | citation form | short form | |
| Remaining unmoved after suffixation | <i>húla</i> | <i>huá8l</i> | ‘month’ | INDEF | <i>húle-t</i> | | ‘a/one month’ |
| | <i>há8ni</i> | <i>hǎn</i> | ‘woman’ | INTERROG | <i>há8ni-s</i> | | ‘which woman?’ |
| | <i>tá’a</i> | <i>tá’</i> | ‘that (2P)’ | ORN | <i>tá’a-g</i> | | ‘that’ |
| | <i>hó’a</i> | <i>hoá’</i> | ‘carry’ | DIR | <i>hó’a-me</i> | | ‘bring here’ |
| | <i>máka</i> | <i>mák</i> | ‘sing’ | PRON | <i>(iris)</i> <i>máka-risa</i> | | ‘(they) are singing’ |
| | <i>fúti</i> | <i>füt</i> | ‘pull’ | TR | <i>fúti-a</i> | | ‘pull’ |
| | <i>fúti</i> | <i>füt</i> | ‘pull’ | (DIR+)PERF | <i>fúti-me-a</i> | | ‘have pulled here’ |
| | <i>fóra</i> | <i>foár</i> | ‘tell’ | PERF | | <i>foár-’ia</i> | ‘already told’ |
| Shifting to penult of suffixed form | <i>móse</i> | <i>mös</i> | ‘sleep’ | NOM | <i>mosé-ga</i> | | ‘place to sleep’ |
| | <i>móse</i> | <i>mös</i> | ‘sleep’ | MODIF | | <i>mös-’á8ki</i> | ‘put to sleep’ |
| | | | | fossilised ones | | | |
| remaining unmoved after suffixation | <i>mára</i> | <i>mar</i> | ‘suffer’ | PERF | | <i>már-tia</i> | ‘have suffered’ |
| shifting to penult of suffixed form | <i>múri</i> | <i>mür</i> | ‘end (n)’ | | <i>muriá’a</i> | | ‘end (vi)’ |
| | <i>púlu</i> | <i>pul</i> | ‘gum’ | TR | <i>pulúfi</i> | | ‘stick to’ |

Why is that so? It is remarkable that the only (productive) suffixes which can be attached to the short form of a root are borrowed. The suffixes on the left are unlikely to have been borrowed (though *-(á)ga* is ambiguous) whereas *-’a8ki* ‘(relational, causative, instrumental, prepositional, durative, moderative)’ and *-’ia* ‘(resultative)’³⁶ are obvious borrowings from Tongan, even including fine nuances of meaning (see also Biggs 1965:414). Consequently one explanation of the

36 Cp. *ia* in East ‘Uvean.

different behaviour of Rotuman roots at suffixation is that suffixes attached to the complete phase are older than the ones connected to the incomplete phase of nouns and verbs. They were productive already at a time when there were no short forms and metathesis (yet) in Rotuman. After this fashion caught on, bases before the “old” suffixes were not subjected to metathesis whereas the two “new” suffixes were attached to the incomplete phase of Rotuman roots. Which is understandable because the short form of a word is the much more frequently used surface form.

Incidentally, all suffixes on the bottom left in the above table which cause the accent to shift to the penultimate syllable of the suffixed word form their incomplete phase regularly. But many of the suffixes attached to the complete phase of a root (top left column of Table 25) do not form their short forms regularly; often, a final vowel is simply elided which would be metathesised elsewhere. It seems to me as if some present citation forms were later creations:

Table 26: Regular and irregular short forms of suffixes

| rule no. | short form | current citation form | expected form | gloss |
|----------|------------------|-----------------------|---------------|----------------------|
| - | <i>máka-ris</i> | <i>máka-risa</i> | *maka-rias | ‘(they) are dancing’ |
| - | <i>ófi-en</i> | <i>ófi-ena</i> | *ofi-ean | ‘finished’ |
| - | <i>há’u-m</i> | <i>há’u-me</i> | *ha’üm | ‘arrive here’ |
| 1+4 | <i>mose-ág</i> | <i>mosé-ga</i> | | ‘place to sleep’ |
| 1+3b | <i>fäeag-’ák</i> | <i>fäeag-’á8ki</i> | | ‘tell’ |
| 1+3a | <i>püliif</i> | <i>pulífi</i> | | ‘stick (v)’ |

Is this sufficient evidence that the two “phases” (citation form and short form) had already existed before the Rotumans started to borrow words and morphological elements from Tongan?

5 The stress factor

Table 25 also showed that only two of the currently productive suffixes cause the accent to shift from the penultimate syllable of the root to the penult of the suffixed word. Only the nominalising and the modificatory suffixes do so. Why these two? Perhaps it is because they carry more weight than the others: (1.) they consist of at least one syllable even in their short forms, and (2.) one (the modificatory suffix) changes the meaning considerably and the other (the nominalising suffix) causes a change in word class.

5.1 Word accent

I agree with Biggs (1959:24) and Blevins (1991:1, 1994:497) that vowel length is not phonemic in Rotuman, but accent is. Just as in Fijian (Schütz 1985:54) and Tongan, there is no long vowel “in a position where it would receive the stress if it were a normal vowel” (Churchward 1953:10). It was shown earlier (in section 3.5.1; cp. Churchward 1940:75) that the accent is responsible whether *vowel assimilation* occurs in Rotuman or not.³⁷

³⁷ In rare cases unstressed /a/ is also assimilated: *fa8viri* (</faviri/), *ha8múa* (</hamua/), *ka8ria* (</karia/), *ta8iri* (</tairi/), etc. (see also Churchward 1940:76).

The difference in stress between citation forms and short forms is striking (Churchward 1940:75, Hocart ms [1913]:4897). “Long forms are always stressed on the penultimate syllable, short forms on the last syllable. Since forms differing only in the position of stress occur, it is considered to be phonemic, e.g. /fáfa/ ‘await’ vs. /fafá/ ‘challenge’ (Biggs 1959:24, also 1965:388). In a few cases minimal pairs (of homographs) can be found, i.e. two forms which differ only in their stress pattern (without additional lengthening), e.g. ‘io-m ‘look here!’ (< ‘io + directional suffix -me) vs. ‘ióm ‘drink’ (< ‘imo + metathesis).

Churchward saw the causal chain exactly the other way round: “Words ending in a long vowel, however, take the accent on the final syllable. Except ... when a suffix is added the accent remains where it was” (Churchward 1940:75) – although then it won’t be on the penultimate syllable any more.

The **suffixes** can be grouped into those that let the accent remain on the penult of the root and others which demand it to shift to the penult of the suffixed word. For example:

Table 27: Stress placement in affixed forms

| accent | root | | gloss | affix | affixed form | | gloss |
|-------------------------------------|----------|-----------|------------|-------|-----------------|----------------|----------------------|
| | phonemic | phonetic | | | phonemic | phonetic | |
| shifting to penult of suffixed form | /mose/ | [»mose] | ‘sleep’ | NOM | /mose-ga/ | [mo»seNa] | ‘bed’ |
| | /hanisi/ | [ha»nisi] | ‘love’ | RECIP | /hai-hanisi-ga/ | [hçihani»siNa] | ‘love one another’ |
| | /fere/ | [»fere] | ‘fly’ | MODIF | /fer-/aki/ | [fer»/çki] | ‘fly with’ |
| remaining unmoved after suffixation | //ihi/ | [»/ihi] | ‘invite’ | DIR | //ihi-me/ | [»/ihime] | ‘invite here’ |
| | /kéle/ | [»kele] | ‘see’ | PRON | /kéle-na/ | [»kelena] | ‘look at’ |
| | /ravá/ | [ra»va] | ‘defeated’ | TR | /ravá-tia/ | [ra»vatia] | ‘have been defeated’ |

With some high-frequency suffixes (the nominalising, reciprocal and modificatory suffixes), stress shifts to remain on the penult of the suffixed form. But the accent remains unmoved on the root in spite of pronominal, directional or transitive suffixation. It is remarkable that the accent only shifts right to the (new) penultimate syllable of the now compounded word after adding suffixes which were certainly (in the case of -‘a8ki)³⁸ or possibly (in the case of -(á)ga, -á’a) borrowed from Tongan. My explanation for this is that these suffixes were not borrowed in isolation but first as parts of compound loanwords and regarded as a stress unit in Rotuman; therefore stress was placed on the penult. Once they had borrowed a sufficient number of root words and compounded forms, the Rotumans could identify the suffixes as separate morphemes and use them productively themselves (cp. Ross’ observation that it is much more likely for a language to borrow content words rather than bound morphemes).

In the Tongan source words themselves “the accent moves in suffixed forms to the right in order to remain on the penult. Similarly prepositions with two vowels build a stress unit together with the following article -e and let the accent move. The same applies if aspect markers like ‘óku

³⁸ Cp. Fijian -yaki, which is the only one of the disyllabic transitive suffixes which attracts the main accent (Arms 1974:95).

‘(present)’, *ná’a* ‘(past)’, *kúo* ‘(perfect)’ and the conjunction *péa* ‘and’ are followed by SG- and DL-markers” (Feldman 1978:134f).

There would be a nice and clean-cut separation, as depicted in the table above, if directly inherited suffixes like the directional markers or pronominal elements would only be affixed to the citation form and if the accent would remain unmoved after suffixation, whereas in all other cases borrowed suffixes were always attached to short forms. Alas, the accent before *-ia* does not shift although this suffix looks like a loan; also alimantal pronominal suffixes can be attached to the short form in rare cases.³⁹

5.2 Stress shift and Tongan definitive accent

As mentioned above, stress falls regularly on the penultimate syllable of words in their complete phase but on the final syllable in the incomplete phase. However, both rules can be reconciled because a new stress group is created: the short form usually does not stand on its own but must be followed by a dependent morpheme (article, adjective, adverb or the like). A noun phrase can be changed as follows:

| citation form | gloss | short form + article | gloss |
|---------------|---------------------|------------------------------|--|
| <i>mori</i> | [>mori] ‘orange(s)’ | <i>mör ta</i> | [>mörta] ‘the oranges (specific ones)’ |
| <i>taŝku</i> | [>tŝku] ‘doctor(s)’ | <i>ta+k ta</i> ⁴⁰ | [>tŝkta] ‘the doctor’ |

The newly created (larger) accent unit is once again stressed on the penult. It is reflected in the indigenous way of spelling in that a noun in its incomplete phase is often written together with the following definite article *ta*: *Itu’muta* (< *Itu’ mut ta*) ‘the cut-off district’, *ö’fata* (< *ö’fTM ta*) ‘the father’, *hânta* ‘the woman’, *mumueta* ‘the first’, etc.

Aside from the large proportion of Tongan loanwords in the Rotuman lexicon, there are further similarities between both languages, one of which is the accent shift and the derivation of the short form compared to the “definitive accent” in Tongan.

To make a noun phrase “definite or generic” in Rotuman, the primary stress shifts from the penultimate to the final vowel of the last word (Churchward 1953:6-10, 12, 25-27, 268-289). In Rotuman the long or citation form is semantically “definite, specific or generic”, whereas the short form signifies something indefinite or unspecific. On the other hand in Tongan, a noun phrase with regular stress on the penult is unspecific and made specific by putting a “definitive accent” on the final syllable.

³⁹ They are identical with the short form of the alimantal possessive pronouns. For example: *mák-’e-n*, *hát-’e-u*, *nóh-’e-ris*, etc. in contrast to the continuous verb forms *mák-ana*, *hát-a-u*, *nóho-a-ris*, etc. As with the alimantal possessives, the meaning of these compounded intransitive verb forms is something like ‘have a turn to do X’ or ‘do one’s share of X’ (where X stands for the literal meaning of the root of the verb). The present generation of Rotumans (Ravai Shaw, p.c. 3/2000) does not see a difference in meaning between both verb forms with pronominal suffixes and considers the second form (such as *mák-’en*) to be a variant of the supposedly correct form (here *máka-na*) or regards the suffix as the alimantal possessive pronoun without the possessed noun and writes it separated from the verb: *ia mak ’en* ‘she danced (her part)’, ‘it was her turn to dance’.

⁴⁰ The last syllable of the English source word was regarded in Rotuman as the postposed definite article.

There is also some formal overlap if the noun phrase contains several words: “In both languages, moreover, the general rule is that when a nounal or pronominal group which is definite is extended by the addition of one or more qualifying words, the definitive accent (or its Rotuman counterpart) is carried on to the new end of the group. This ... is the most interesting and perhaps the most vital feature of the whole phenomenon.” (Churchward 1953:269f).

The *functions* of the accent shift in both languages are very similar: “The functions of the stress on the final syllable in Tongan, which are, broadly speaking, emphatic and definite, by contrast with stress on the penult, which is non-emphatic and indefinite, are analogous to the uses of the complete and incomplete phases of Rotuman respectively.” (Milner 1971:418).

Besnier (1987:204) described definitive accent in Tongan as the “phonemic gemination of the last vowel ... of an NP.” In Rotuman, if a vowel in final syllable is stressed, it is automatically lengthened. I cannot see the difference when Hovdhaugen calls a comparable phenomenon in Samoan – the “locative accent” (Conдах 1989) – *vowel lengthening*. The Samoan locative accent “has nothing to do with the definitive accent we find in Tongan and Tokelauan. But the definitive accent in those languages is not so much an accent on words as on phrases. This type of accent can also sporadically be heard in Samoan, especially on Savai’i. It may be due to influence from Tongan or Tokelauan and it is a very marginal phenomenon in Samoan” (Hovdhaugen 1992:284 fn.4).

A definitive accent is also productive in Niufo’ou⁴¹ and East ‘Uvea which were both heavily influenced by Tongan, as well as Tokelau and East Futunan. The accent shift in these languages is said to be “very old,” whatever time frame this might mean, and cannot result solely from Tongan influence, since the languages in question had participated in this innovation already in its very early stage of development (Tsukamoto 1994:54).

Clark (1974) and Tsukamoto (1994:49f) saw the *origin* of the Tongan definitive accent in the deletion of the PPn deictic clitic **ra*. As part of a regular sound change, PPn **r* became Ø, and the unstressed vowel *a* assimilated as usual in Tongan to the preceding vowel. Similar scenarios apply to Niufo’ou, East Futunan and East ‘Uvean (Tsukamoto 1994:54).

ROTUMAN

**húla ta* > **húal ta* > *huál ta* ‘the moon’
**móri he* > **móir he* > *mör he* ‘a orange’

TONGAN

**fále ra* > **falé ra*⁴² > **falé a* > **falée* > *falé* ‘that house’,
**fále na* > *falé na* ‘that house over there’

Besnier (1987:204) saw similarities as well: “The specific forms of words in both languages are posited as having arisen historically as the result of suffixal deictic particles that dropped after having attracted the strictly penultimate stress in both languages to the last vowel of words marked for specificity. Residues of such particles are found in both languages (e.g. Rotuman *-ta* ‘one’ and Tongan *-ni* ‘this’, etc.)” Rotuman *ta* is not enclitic, but rather a postposed definite article; it might have derived from the shortened form of a demonstrative (*ta’a* ‘that (correlate to the 2nd P)’, *täe* ‘that one over there (correlate to the 3rd P)’).

⁴¹ “The Niu Fo’ouans raise the voice on final words and syllables, giving the language a cadence not unlike that of Samoan” (Collocott 1922:188).

⁴² Tsukamoto reconstructed PTo **ra* ‘that one over there (deictic element, correlate to the 3rd P).’ Clark derived it historically from a third deictic suffix **-e* beside *-ni* ‘here’ and *-na* ‘there’.

It seems also that Rotuman and the West Polynesian languages developed the same tendency for an accent shift to the final syllable to express specificity soon after their separation from Central Pacific. Short form derivation in Rotuman was not caused by Tongan influence but constitutes a regional speciality (“area phenomenon”)⁴³ or a coincidental parallelism just like e.g. the sound change from **t > k* in Samoan and Hawaiian.

Comparable is the partly independent development of polite register in Western Polynesia according to Milner (1961:300): many polite expressions in Tongan have no equivalent in Samoan and vice-versa. “From this evidence and from our knowledge of the existence of a small number of terms suitable for high chiefs or royalty and found in Samoa, Tonga, Wallis, and Futuna, it seems possible to draw the conclusion that in this area the majority of the terms of respect have evolved in each community since it became separately established in its present habitat, but that a few words especially those referring to high chiefs and royalty were perhaps in use before the Western Polynesians became separated.”

6 Metathesis and Rotuma’s language history

When did Rotuman split up from the Central Pacific dialect chain? The earliest archaeological finds from Rotuma were dated to about 1700 years ago. Initially Pawley (1979:40) thought that Rotuman had separated from the Central Pacific dialects in Western Fiji after Polynesian had split from Tokalau-Fijian, because it shares most innovations with all other regions of Fiji. “The separation of Rotuman must have preceded the Proto Fijian period. To be more exact, it must have happened before the spread across Fiji of those particular innovations that are not found in Rotuman... it is characteristic of the whole Fijian group, with sporadic exceptions in Vanualevu, that the PCP rising vowel clusters **ae* and **ao* reduce to a single vowel, which may be *a*, *e*, or *o*, depending on stress placement in the original form. As Rotuman preserves the original clusters the spread of this innovation across Fijian can be dated after the divergence of Rotuman” (Pawley 1996:111).

The first settlers on Rotuma may have sustained contact with their former home for some time,⁴⁴ but then a long period of isolation or separate development ensued. I assume that the major changes in Rotuman started during this phase. Similarly Ross (p.c.) and Irwin (1992:174): “Islands began to diverge faster in isolation, from the time effective communication between them slowed or ended, rather than when contact between them began.” Especially, the sound changes of Rotuman in this period of comparative isolation were much more drastic and numerous than the ones [which ones?] in the following centuries when contact with Polynesians and perhaps also Fijians was more intense, and also compared to changes in the other Central Pacific languages which had never lost contact to their neighbouring dialects and languages.

The trigger to some changes in the language might have come already at the time when the fore-runner of Rotuman had not yet completely separated from the other Central Pacific dialects in Western Vanualevu. But its most distinguishing features, Rotuman acquired after the separation from them: the far-reaching sound changes, the creation of short forms of all content words, lexical and semantic changes, syntactic changes such as the postposition of the article. The idiosyncratic development during the long period of isolation led to the fact that “the Rotuman language is totally unintelligible to speakers of the Fijian and Polynesian languages, to which it is genetically most closely related” (Geraghty 1984:34).

⁴³ In the Lau dialect of Fijian the final syllable is lengthened to express respect (Hocart 1929:49).

⁴⁴ “Rotuman initially maintained its contacts with the geographically closest western Fijian dialects” (Green 1981:149).

The changes were not triggered by Polynesian influence. The creation of short forms can be seen as a parallel development to the independent genesis of the definitive accent in a few western Polynesian languages. The tendency to shift the stress from the penultimate to the final syllable to express emphasis or definiteness seems to have been dormant in the common ancestor language, even when no trace of it can be found in contemporary Fijian speech. The accent shift in west Polynesian languages is probably not due to Tongan influence (cp. Geraghty 1984:34 and Tsukamoto 1994:54). Creating short forms in Rotuman became a fashion before the first intensive contact with Polynesians around the 13th century.

I posit the following order of events:

1. Early Rotuman⁴⁵ all lexemes in complete phase (open syllables, no consonant clusters)
2. Middle Rotuman the fashion of incomplete phase derivation developing parallel to the definitive accent in Western Polynesian languages
3. Metathetic Rotuman the incomplete phase became the more frequently used one of the two forms
4. High Rotuman large influx of Tongan and other Polynesian borrowings, even grammatical morphemes such as affixes; new suffixes like -'aʒki and -'ia were attached to the short form since that was the most commonly used one.

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⁴⁵ named after my colleague at USP Vanuatu

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