VOWEL HARMONY AND VOWEL RAISING IN IPILI

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Ipili is a language spoken by about 7000 people living in the New Guinea Highlands in the western part of Enga Province, Papua New Guinea. Ipili is classified (Wurm 1971:550) as a West Central Highlands language of the East New Guinea Highlands Stock. It is closely related to Enga and Huli, languages spoken by larger populations to the east and south.

In Ipili there are five main vowel contrasts:

High Front	i	ki	'arm, hand'
High Back	u	ku	'dry'
Mid Front	e	ke	'leg, foot'
Mid Back	o	ko	'bad'
Low	a	ka	'strong in taste'

Nasalized counterparts of these vowels are both rare and unstable with regard to nasality. Because no example of a suffix following a nasalized vowel has been found, nasalized vowels are not included in the discussion of vowel harmony. Also omitted from the presentation are pitch variations, which are contrastive in Ipili but do not affect vowel quality.

A number of morphemes appear with high vowel variants in some environments and with mid vowel variants in others. However, the alternation cannot be accounted for by a single straightforward vowel harmony rule because of seeming contradictions resulting from the facts that harmony:

1. is both progressive and regressive and
2. involves both raising and lowering.

This paper will first present a detailed description of the vowel harmony and then discuss the raising of low vowel to mid which produces phonetic sequences that violate the vowel harmony restrictions.

Vowel harmony is reflected in Ipili by the fact that high and
mid vowels do not normally occur in adjacent syllables in stems
and that several suffixes and a few stems have high and mid vowel
variants which are distributed according to rules of vowel
harmony.

The low vowel a̲ may occur with either high or mid vowels:

>   loba   'break off'
>   luba   'open'
>
>   tipa pi   'ask'
>   tepa a   'drop'

The low vowel also serves to 'clear the register' so that res-
trictions on vowel occurrence are lifted. Thus a syllable con-
taining a̲ may be flanked by a high vowel on one side and a mid
vowel on the other:

>   mugalo   a variety of bamboo
>   momapu   coiled

Because a̲ is neutral with regard to vowel harmony, the selection
of the underlying form can be based not only on forms that occur
in isolation but also on those which occur with a̲.

Examples of suffixes which have variants distributed by vowel
harmony are:

a) -ne/-ni a suffix used with both nouns and verbs:[1]

>   ke   kene 'leg, foot'
>   ma   mane 'neck'
>
>   ki   kini 'arm, hand'
>
>   lale lalene 'you (sg) just said'
>   lapi lapini 'you (sg) said recently'

Note that this suffix also has a variant -le̲ which occurs only af-
ter certain morphemes ending in a bilabial stop + i̲.   That there
is no restriction in the language preventing a sequence of p̲i̲n̲ is
shown by the second person singular recent past form (see l̲a̲p̲i̲n̲i̲
cited above).   Curiously, the vowel of the -l̲e̲ variant does not

change in accordance with harmony rules, but preceding high vowels
are lowered to mid:

$$
\begin{array}{lll}
\text{abi} & \text{abele} & \text{'over there'} \\
\text{peyapi} & \text{peyapele} & \text{'are going (non-first} \\
& & \text{person, dual)'}
\end{array}
$$

   b) -e/-i second person singular verb suffix:

$$
\begin{array}{ll}
\text{nale} & \text{'you just ate'} \\
\text{pele} & \text{'you are doing'} \\
\\
\text{pili} & \text{'you just did'}
\end{array}
$$

   c) -o/-u medial verb suffix:

$$
\begin{array}{llll}
\text{ada} & \text{'see'} & \text{ado} & \text{'seeing'} \\
\\
\text{loba} & \text{'break off'} & \text{lobo} & \text{'breaking off'} \\
\text{mina} & \text{'hold'} & \text{minu} & \text{'holding'}
\end{array}
$$

Because suffixes do not occur in isolation, the suffix variant af-
ter a can be chosen as the underlying form. For all suffixes in
harmony with preceding vowels, the variant with a mid vowel occurs
with a and is therefore the underlying form.

    It should be noted that there are suffixes which do not have
obligatory variants[2] for example, present tense -el normally
retains e (mineyo[2] 'I am holding'). Other suffixes with in-
variant mid vowels are -le (mentioned above), -e[4] (non-finite verb
suffix), o[3] (first person singular), and -pe[4]. These invariant
suffixes lower preceding high vowels as seen above with -le.   It
should be noted that a deleted a as in mineyo (= mina+el+o) blocks
this regressive harmony.

    By contrast, stems and other suffixes which enter into harmony
have an underlying form with a high vowel which becomes mid under
the influence of a suffix[5] mid vowel. All preceding high vowels
lower unless there is an intervening low vowel.

    Examples include some locative stems with high vowels in
isolation but low vowel variants in harmony with suffixes:

$$
\begin{array}{lll}
\text{lipi} & \text{lepele} & \text{'up there'} \\
\text{abi} & \text{abele} & \text{'over there'}
\end{array}
$$

<pre>
               napi   napele   'down there'
               mupi   mopele   'over there'
</pre>

Other examples of vowel lowering before an invariant suffix occur with the suffix -pe, which is added to imperatives to indicate less urgency:

<pre>
               la   lape   'speak'
               gi   gepe   'give me'
</pre>

However, because of the intervening low vowels, the plural of 'give me' giyapa does not change the stem vowel when -pe is added: giyapape .

The verb stem piti 'sit' also has high and low vowel variants. The high vowel variant is posited as the underlying form because it occurs when there are no suffixes, as in the imperative singular and in the periphrastic negative: piti na-peya 'he is not sitting.' The somewhat Semitic looking paradigmatic contrast between present and past tenses:

<pre>
               petele   'you (sg) are sitting'
               pitili   'you (sg) just sat'
</pre>

can be accounted for by vowel harmony (plus deletion of stem final vowel before a suffix vowel).

	Present	Immediate Past
	piti-el-e	piti-l-e
	sit PRS 2s	sit IP 2s
Vowel lowering	pete-el-e	----
Vowel deletion	pet-el-e	----
Vowel raising	----	piti-l-i

The verbs pu 'go' and ipu 'come,' although exhibiting some irregularities resulting from an earlier loss of a stem final a, also enter into vowel harmony:

<pre>
          pu   'go'   polo   'I just went'

          ipu   'come'   epele   'you are coming'
</pre>

To summarize, vowel harmony works to prevent high and mid vowels from occurring in adjacent syllables within a word. Some suffixes have an underlying mid vowel which enters into harmony but stems and other suffixes have underlying high vowels. Harmony with high vowels is progressive and harmony with mid vowels is regressive. An invariant mid vowel dominates preceding high vowels changing them to mid. Otherwise high vowels change follow-ing mid vowels to high.

Although vowel harmony works to prevent high and mid vowels from occurring in adjacent syllables, the phonetic process of vowel raising operating on a̲ creates the very sequences which vowel harmony seeks to eliminate. a̲ is raised to e̲ between a high vowel or after a high vowel plus semivowel and a̲ consonant. For example, ua̲ 'thus' is pronounced ue̲ne̲ when the -ne̲ suffix is added.

Within a morpheme, it is difficult to know whether the un-derlying vowel is e̲ or a̲, but in slow and careful pronunciation the a̲ appears: for example 'young man' is normally pronounced iwe̲na̲ but when sounded out syllable by syllable it becomes iwa̲na̲. Perhaps another clue is that it never becomes iwi̲na̲ as one might expect from vowel harmony. This is also evidence that vowel har-mony must take place before vowel raising and that the two processes are not identical. This vowel raising is probably more closely related to the optional harmony that is sometimes found raising mine̲yo̲ to mini̲yo̲ or even mini̲yu̲.

In conclusion, we can say that although the distribution of high and mid vowel variants initially seems rather confusing, obligatory variation can be accounted for by three simple rules, with the only special marking needed for those suffixes that have invariant underlying e̲.

   1. High vowels become mid in syllables preceding invariant mid vowels.

   2. Mid vowels become high in syllables following high vowels.

   3. Low vowels become mid front between a high vowel or a high vowel plus a semivowel and a consonant.

Optionally, the so-called invariant mid vowels may become high af-ter high vowels.

NOTES

[1] This suffix has several usages which are too complex to describe fully in this paper. With nouns it seems to have origi- nally been an inalienable suffix but now some words for body parts (such as those cited in the text) may occur either suffixed or alone with no difference in meaning or function. I have likewise been unable to determine a meaning difference between suffixed or unsuffixed locative stems. With verbs, the suffix also has a sub- tle meaning which has not yet been analyzed satisfactorily. Terrence Borchard in an unpublished manuscript has written that the suffix indicates that the information in the assertion is known to the speaker but not to the hearer. However, I was unable to confirm this with my language informants, who often stated that there was no difference in meaning or attributed a temporal diff- erence to the suffixed form.

[2] <u>l</u> becomes <u>y</u> between a preceding front vowel and a following back vowel.

[3] -<u>o</u> may be derived from -<u>wa</u>, which occurs as 1 sg in some verb paradigms.

[4] Many speakers do not lower high vowels before -<u>pe</u>. Perhaps - <u>pe</u> was originally an enclitic that on becoming a suffix enters into the vowel harmony scheme.

[5] There is only one prefix in Ipili: the negative <u>na-</u>, which because it contains a low vowel does not affect vowels that follow.

REFERENCE

Wurm, Stephen. 1971. The Papuan linguistic situation. Linguistics in Oceania, ed. by Thomas A. Sebeok, 531-657. (Current Trends in Linguistics, 8.) The Hague: Mouton.