A FIRST LOOK AT TIDORE PHONOLOGY

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The phonological system of Tidore, a language of the North Halmaheran Family of the West Papuan Phylum is described. The data and analysis presented represent the dialect spoken in the villages of Soa Sio and Gura Bunga on the island of Tidore in the province of Maluku, Indonesia. A description of the 19 consonants and five vowels is given along with syllable patterns. Attention is given to the process of consonant alternation with the addition of the N- prefix. Discussion is also given to the manner in which Tidore adapts borrowed words to fit its phonological system.

1. INTRODUCTION

This article presents a brief first look at the phonology of the Tidore language and attempts to make some initial comparisons between Tidore and the related languages in Halmahera. Tidore is a North Halmaheran language of the West Papuan Phylum (Voorhoeve 1984). The North Halmaheran Family, which consists of ten languages indigenously spoken on the northern peninsula of Halmahera, includes the distinct features of masculine-feminine gender distinction both in the third person singular pronouns, and in verb agreement markers. These languages are: West Makian, Ternate, Tidore, Sahu, Tabaru, Loloda, Galela, Tobelo, Pagu, and Modole and are shown on Map 2 (page xii). Tidore is spoken on the islands of Tidore, Maitara, Mara, and the northern half of Moti, and coastal regions of western Halmahera, as shown by Map 4 (page 44). On Tidore there are two dialects, one encompassing the Soa Sio region, and one the Mareku region. The only difference in the two dialects is the occasional change in vowel choice, or the addition of a front high vowel word finally. The dialects are mutually intelligible.

Research on this paper was done on the island of Tidore in the villages of Gura Bunga, Gamtuflkange and Soa Sio. The Soa Sio dialect spoken in the before mentioned villages was the main source of data. The data was gathered from July-December 1993 and March-April 1994.

2. THE NORTH HALMAHERAN FAMILY OF LANGUAGES

Up until now there has been an almost complete lack of study and research regarding the Tidore language. To the authors' knowledge, this is the first study of Tidore phonology, with the exception of an informal paper researched by Proyek Penelitian Bahasa Dan Sastra Indonesia Dan Daerah Maluku (Lilipaly et. al. 1981/82), and a cursory glance by Voorhoeve (1982:37-45) in his attempt to compare Tidore with West Makian. In past research of North Halmaheran languages, Tidore has been placed in a subfamily within the North Halmaheran Stock separated from West Makian (Grimes 1984:31). This grouping shown in Figure 1, comes not from an analysis of shared innovations and retentions, but rather from a more simplistic comparison of lexical items.

Voorhoeve had also initially posited this grouping using quantitative evidence (based on lexical similarity), but upon closer examination of West Makian, Ternate and Tidore, he came up with a different classification which places these languages in a subfamily of their own. Voorhoeve divides the North Halmaheran Stock into two families, classifying West Makian, Ternate, Tidore and possibly Sahu as part of the Southern Subfamily, and classifying all remaining languages within the Northern Subfamily (Voorhoeve 1982:38,39).
Map 4. Tidore language area, spoken primarily on the island of Tidore, and also on adjacent islands and neighboring regions of the west Halmaheran coast.
Voorhoeve had also initially posited this grouping using quantitative evidence (based on lexical similarity), but upon closer examination of West Makian, Ternate and Tidore, he came up with a different classification which places these languages in a subfamily of their own. Voorhoeve divides the North Halmaheran Stock into two families, classifying West Makian, Ternate, Tidore and possibly Sahu as part of the Southern Subfamily, and classifying all remaining languages within the Northern Subfamily as shown in Figure 2. (Voorhoeve 1982:38,39)

There are also arguments placing both Ternate and Tidore in a separate sub-group of the Southern subfamily, apart from West Makian and other mainland languages. Quantitatively, Ternate and Tidore show a 75% shared lexical similarity with only a 50% similarity with its next language relative, Sahu (Grimes 1984:25). It is also interesting to note that Tidore and Ternate do not have some of the features of the Northern Subfamily: (1) West Makian (Voorhoeve 1982:12), Tidore and Ternate generally place the noun object after the verb. (2) Tidore and Ternate do not have the object markers on the verb which is a unifying feature of other North Halmaheran languages. (3) Tidore has prepositions as well as postpositions which is in contrast with neighboring languages. (4) Voorhoeve gives a lengthy discussion of several phonological evidences shared by West Makian, Tidore and Ternate (Voorhoeve 1982:38). His arguments include the following:

a. The loss of initial [k] in the word for skin: West Makian fi, Tidore, Ternate ahi, but Galela kahi, Modole 'ai, and all others except Sahu kai.

b. [t]+[u] where other languages have [d]+[i], for example in the word for sky: West Makian tupam; Tidore, Ternate tufa; dipta, diwanga, dihanga, diwama in other languages.

c. The presence of an initial alveopalatal nasal in the word fish: West Makian yao (from nyao), Ternate, Tidore nyao, Sahu nyao'o; all other languages have initial [n]: nao, naoko, nao'o. (Voorhoeve, 1982: 38).

Finally, Tidore and Ternate have a very distinctive feature not found elsewhere - that of a 1st person pronoun which differentiates between masculine and feminine speakers. The following is a brief example from Tidore:

(1) Fajaru totagi toma gam.
1sg.f. go to village.
I (feminine) go to the village.
Thus, based on the phonological and grammatical evidences listed above, it seems most likely that Tidore is grouped together with Ternate as a subgroup of the Southern Subfamily, following Voorhoeve's proposed classification as shown in Figure 2.

Figure 2. Voorhoeve’s classification of the North Halmaheran Language Family. (Voorhoeve 1982:39)

3. PHONOLOGY

3.1 Word Stress

Word stress is on the penultimate syllable of multisyllabic roots. This is much the same as Galela (Shelden 1989), but different from Loloda and Tobelo (van Baarda 1904:356-9) and Tabaru, where stress can occur on the antepenultimate or penultimate syllable depending on affixation (Kotynski 1988:156). This is also much different than Sahu, where the stress is phonemic (Visser and Voorhoeve 1987:19). Tidore stress is as follows:

\[
\begin{align*}
(3) & \quad \text{ane} & ['ane] & \text{‘forehead’} \\
& \quad \text{gumi} & ['gumi] & \text{‘moustache’} \\
& \quad \text{dofolo} & [do'fo] & \text{‘head’}
\end{align*}
\]

There are several words in Tidore which at first glance sound as if they have ultimate stress, but when listened to in slow speech the last vowel appears to be lengthened (see discussion on geminate vowels, Sec. 3.2.7). These geminate vowels, however, were not used in the Tidore orthography since the people themselves felt uncomfortable writing them. Instead, an accent mark was chosen when it was proved to be phonemic. The following examples show how geminate vowels affect stress:

\[
\begin{align*}
(4) & \quad \text{karé} & [ka'ree] & \text{‘here’} \\
& \quad \text{katá} & [ka'taa] & \text{‘there’} \\
& \quad \text{mafù} & [ma'fuu] & \text{‘to sell’} \\
& \quad \text{hali} & [ha'lili] & \text{‘family’} \\
& \quad \text{kombó} & [kom'boo] & \text{‘little’}
\end{align*}
\]
3.2 Phonemes

3.2.1 Consonant Inventory

Tidore has a total of 19 consonants including eight stops, three fricatives, four nasals, one lateral, one vibrant, and two semivowels. These are listed in the table below.

<table>
<thead>
<tr>
<th>labial</th>
<th>alveolar</th>
<th>alveopalatal</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
</tr>
<tr>
<td>voiced stops</td>
<td>b</td>
<td>d</td>
<td>j</td>
</tr>
<tr>
<td>fricative</td>
<td>f</td>
<td>s</td>
<td>h</td>
</tr>
<tr>
<td>nasal</td>
<td>m</td>
<td>n</td>
<td>ny</td>
</tr>
<tr>
<td>laterals</td>
<td>l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vibrant</td>
<td></td>
<td>r</td>
<td></td>
</tr>
<tr>
<td>semivowels</td>
<td>w</td>
<td></td>
<td>y</td>
</tr>
</tbody>
</table>

Phonetically Tidore has a glottal stop, but this is not phonemic, so it will not be written in any further discussion of Tidore. When the glottal stop is used, it is found word initially before vowels, and word finally after vowels. This is different than in Sahu where the glottal stop is phonemic (Visser and Voorhoeve 1987:12-16). Some examples of the phonetic occurrence of the glottal stop are shown below:

(5) 

[ʔuku]  ‘fire’
[ʔing]  ‘tooth’
[ ’neneʔ]  ‘grandmother’
[’teteʔ]  ‘grandfather’

3.2.2 Consonant Description

All stops (p,b,t,d,c,j,k,and g) occur in syllable initial position and word medial position, but not in word final position. Examples of each are presented below:

/p/  [p] voiceless unaspirated bilabial stop

(6) peka  ‘to fall’
     pane  ‘to drive’
     ba[pi  ‘cutting board’
     pipi  ‘money’

/b/  [b] voiced bilabial stop

(7) bao  ‘current’
     baso  ‘to hear’
     kabi  ‘goat’
     tubu  ‘peak’

/t/  [t] voiceless unaspirated alveolar stop

(8) tamao  ‘ax’
     tagi  ‘to walk’
     o[tu  ‘to sleep’
     foturu  ‘strong’


**/d/** voiced alveolar stop

(9)  dahe  ‘true’  kadu  ‘sack’
     dulu  ‘back’  moda  ‘mouth’

**/c/** voiceless alveopalatal stop

(10) cici  ‘knife’  guraci  ‘gold’
     cako  ‘time, hour, hit’  yaci  ‘to rip’

**/j/** voiced alveopalatal stop

(11) jiko  ‘curve’  faja  ‘dirty’
     jang  ‘good’  moju  ‘still’

**/k/** voiceless unaspirated velar stop

(12) kamo  ‘white clouds’  aki  ‘tongue’
     kabi  ‘goat’  ake  ‘water’

**/g/** voiced velar stop

(13) gosi  ‘egg’  dagilom  ‘friend’
     gia  ‘arm, hand’  tagi  ‘to walk’

Fricatives occur word initial and word medially. There are labial, alveolar and glottal fricatives, all of them voiceless.

**/f/** voiceless labio-dental fricative

(14) foturu  ‘strong’  difutu  ‘tomorrow’
     faja  ‘dirty’  toforo  ‘nervous’

**/s/** voiceless alveolar grooved fricative.

(15) sahu  ‘hot’  simo  ‘old person’
     soro  ‘fly’  gosa  ‘to carry’

**/h/** voiceless glottal fricative

(16) hai  ‘tired’  lahi  ‘to ask’
     hula  ‘sago’  yohu  ‘foot, lower leg’

There are four voiced nasals: bilabial, alveolar, alveopalatal and velar. All nasals with the exception of /ny/ can occur word finally.

**/m/** voiced bilabial nasal

(17) mega  ‘what’  coma  ‘add’
     mom  ‘wake up’  sema  ‘to be’
/n/ [n] voiced alveolar nasal

(18) nau 'boy' kornono 'dark'
nigo 'yesterday' madin 'to sew'

/ny/ [ny] voiced alveopalatal nasal

(19) nyao 'fish' kanyafu 'to swim'
nyabo 'wound' nyiha 'peanut'

/ng/ [ng] voiced velar nasal

(20) ngofa 'child' fangare '1 pers. sg. masc.'
ngunu 'nose' ngong 'cracked'

There are two voiced liquids: an alveolar lateral and an alveopalatal flap.

/l/ [l] voiced alveolar lateral

(21) lao 'eye' ngolo 'sea'
lamo 'large' joloko 'Adam's apple'

/r/ [r] voiced alveopalatal flap

(22) roka 'to pass' ora 'moon'
ronga 'name' karo 'to call'

There are two semivowels: one voiced labiovelar and one voiced palatal.

/w/ [w] voiced rounded labiovelar semivowel

(23) waro 'to understand' dowangi 'beach'
wange 'sun, day' hawa 'angry'

/y/ [y] voiced unrounded palatal semivowel

(24) yam 'to question' loya 'to run'
yali 'still, again' uyu 'sand'

3.2.3 Consonant Contrast

p/b contrast both syllable initially and syllable medially

(25) bosa 'rain' bopo 'stump'
posa 'before' dobo-dobo 'pool'
<table>
<thead>
<tr>
<th>t/d</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>tofa ‘to poke’</td>
</tr>
<tr>
<td></td>
<td>dofa ‘pole’</td>
</tr>
<tr>
<td></td>
<td>hotu ‘hair’</td>
</tr>
<tr>
<td></td>
<td>hodulu ‘to touch’</td>
</tr>
<tr>
<td>k/g</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>27</td>
<td>gam ‘village’</td>
</tr>
<tr>
<td></td>
<td>sago ‘to split’</td>
</tr>
<tr>
<td></td>
<td>kam ‘water container’</td>
</tr>
<tr>
<td></td>
<td>sako ‘neck’</td>
</tr>
<tr>
<td>p/f</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>28</td>
<td>fola ‘house’</td>
</tr>
<tr>
<td></td>
<td>bofo ‘leftovers’</td>
</tr>
<tr>
<td></td>
<td>posa ‘before’</td>
</tr>
<tr>
<td></td>
<td>bopo ‘stump’</td>
</tr>
<tr>
<td>b/m</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>29</td>
<td>bulo ‘white’</td>
</tr>
<tr>
<td></td>
<td>seba ‘near’</td>
</tr>
<tr>
<td></td>
<td>mula ‘morning’</td>
</tr>
<tr>
<td></td>
<td>sema ‘to be’</td>
</tr>
<tr>
<td>b/w</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>30</td>
<td>banga ‘tall grass, forest’</td>
</tr>
<tr>
<td></td>
<td>sowohi ‘shaman (chief)’</td>
</tr>
<tr>
<td></td>
<td>wange ‘day’</td>
</tr>
<tr>
<td></td>
<td>soboi ‘to put’</td>
</tr>
<tr>
<td>m/w</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>31</td>
<td>moju ‘still’</td>
</tr>
<tr>
<td></td>
<td>sowyo ‘to crumble’</td>
</tr>
<tr>
<td></td>
<td>wotu ‘navel’</td>
</tr>
<tr>
<td></td>
<td>toma ‘towards’</td>
</tr>
<tr>
<td>t/s</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>32</td>
<td>subu ‘wick’</td>
</tr>
<tr>
<td></td>
<td>bato ‘just’</td>
</tr>
<tr>
<td></td>
<td>tubu ‘peak’</td>
</tr>
<tr>
<td></td>
<td>kaso ‘dog’</td>
</tr>
<tr>
<td>s/h</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>33</td>
<td>haki ‘to peel’</td>
</tr>
<tr>
<td></td>
<td>gahi ‘to make’</td>
</tr>
<tr>
<td></td>
<td>saki ‘tasty’</td>
</tr>
<tr>
<td></td>
<td>gasi ‘salt’</td>
</tr>
<tr>
<td>d/n</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>34</td>
<td>dagilom ‘friend’</td>
</tr>
<tr>
<td></td>
<td>moda ‘mouth’</td>
</tr>
<tr>
<td></td>
<td>nage ‘who’</td>
</tr>
<tr>
<td></td>
<td>ona ‘3 pers. pl.’</td>
</tr>
<tr>
<td>d/l</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>35</td>
<td>due ‘to own’</td>
</tr>
<tr>
<td></td>
<td>fola ‘house’</td>
</tr>
<tr>
<td></td>
<td>lua-lua ‘wave’</td>
</tr>
<tr>
<td></td>
<td>moda ‘mouth’</td>
</tr>
<tr>
<td>n/l</td>
<td>contrast both syllable initially and syllable medially</td>
</tr>
<tr>
<td>-----</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>(36)</td>
<td>lao  ‘eye’  fola  ‘house’</td>
</tr>
<tr>
<td></td>
<td>nao-nao  ‘recognize’  ona  ‘3 pers. pl.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>k/ng</th>
<th>contrast both syllable initially and syllable medially</th>
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<tbody>
<tr>
<td>(37)</td>
<td>kora  ‘to lie’  paka  ‘to walk, climb’</td>
</tr>
<tr>
<td></td>
<td>ngora  ‘door’  banga  ‘tall grass, forest’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>k/w</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(38)</td>
<td>karo  ‘call’  koko  ‘stand’</td>
</tr>
<tr>
<td></td>
<td>waro  ‘to understand’  sowohi  ‘shaman (chief)’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ng/w</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(39)</td>
<td>ngong  ‘cracked’  ngowora  ‘python’</td>
</tr>
<tr>
<td></td>
<td>wonge  ‘to count’  pongo  ‘tree roots’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n/ng</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(40)</td>
<td>nau  ‘boy’  ngona  ‘2 pers. sing.’</td>
</tr>
<tr>
<td></td>
<td>ngau  ‘ear’  ronga  ‘name’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>m/n</th>
<th>contrast both syllable initially and syllable finally</th>
</tr>
</thead>
<tbody>
<tr>
<td>(41)</td>
<td>monge  ‘tasty’  ngom  ‘1 pers. pl. excl.’</td>
</tr>
<tr>
<td></td>
<td>nong  ‘charcoal’  ngon  ‘2 pers. pl.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>n/ny</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(42)</td>
<td>nao-nao  ‘to recognize’  panaka  ‘to lie face down’</td>
</tr>
<tr>
<td></td>
<td>nyao  ‘fish’  kanyafo  ‘to swim’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ny/ng</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(43)</td>
<td>nyao  ‘fish’  kanyafo  ‘to swim’</td>
</tr>
<tr>
<td></td>
<td>ngau  ‘ear’  fangare  ‘1 pers. sg. masc.’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>y/ny</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(44)</td>
<td>yale  ‘lick’  saya  ‘flower’</td>
</tr>
<tr>
<td></td>
<td>nyale  ‘snack’  kanyafo  ‘to swim’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>l/r</th>
<th>contrast both syllable initially and syllable medially</th>
</tr>
</thead>
<tbody>
<tr>
<td>(45)</td>
<td>laha  ‘good’  fola  ‘house’</td>
</tr>
<tr>
<td></td>
<td>raha  ‘four’  ora  ‘moon’</td>
</tr>
</tbody>
</table>
3.24 Vowel Inventory

Tidore has five underlying vowels which is much in keeping with the other North Halmaheran languages. A simple table is presented below.

Table 2. Tidore Vowels.

<table>
<thead>
<tr>
<th></th>
<th>front</th>
<th>central</th>
<th>back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>i</td>
<td></td>
<td>u</td>
</tr>
<tr>
<td>mid</td>
<td>e</td>
<td></td>
<td>o</td>
</tr>
<tr>
<td>low</td>
<td></td>
<td></td>
<td>a</td>
</tr>
</tbody>
</table>

3.25 Vowel Description

The front vowels /i/ and /e/ occur in stressed and unstressed syllables and in open and closed syllables.

/i/  
[i] high tense front unrounded vowel

(46)  
'wati  ‘comb’  
'simo  ‘old person’

(47)  
'ende  ‘this’  
'sema  ‘to be’

/e/  
[e] mid tense front unrounded vowel

(47)  
'sedu  ‘funny’

The central vowel /a/ occurs in both stressed and unstressed syllables, and in open and closed syllables.

/a/  
[a] low lax mid unrounded vowel

(48)  
ngam  ‘food’  
ma'hoga  ‘to shower’

(49)  
ha'wa  ‘angry’

The back vowels /u/ and /o/ occur in stressed and unstressed syllables and in open and closed syllables.

/u/  
[u] high tense back rounded vowel

(49)  
dum-dum  ‘bathroom’  
gu'raci  ‘gold’

(50)  
tua  ‘bed’

/ø/  
[o] mid tense back rounded vowel

(50)  
uyu  ‘sand’

(50)  
'nyao  ‘fish’

3.26 Vowel Contrasts

e/i  
contrast in both the ultimate and penultimate open syllable

(51)  
ake  ‘water’

(51)  
aki  ‘tongue’

peti  ‘box’

pita  ‘ribbon’
contrast in both the ultimate and penultimate open syllable

(52) **otu**  
' to sleep'  
**oro**  
' to take'

**uto**  
' to plant'  
**yuru**  
' to drink'

contrast in both the ultimate and penultimate open syllable

(53) **fato**  
' to arrange'  
**woha**  
' wide'

**feto**  
' to gossip'  
**wohe**  
' to dry'

### 3.2.7 Vowel Sequences

Vowel sequences in Tidore are not uncommon, and occur most frequently in the word-final position, although they do occur in both word-initial and word-medial positions. Although a phonetic inventory of Tidore reveals the presence of diphthongs and lengthened vowels, these are best analyzed phonemically as consisting of separate VV sequences, with each vowel representing a nuclear vowel.

One of the reasons for analyzing the ambiguous VV sequences and all lengthened vowels as two phonemic vowel segments is that, with the exception of /ie/, /iu/, /eo/, /eu/, all vowels can occur in a VV sequence:

(54) **iV**  
**buria**  
[bu'riə]  
' baby-sitter'

**halí**  
[ha'lii]  
' family'

**fio**  
['fio]  
' when'

(55) **eV**  
**tabea**  
[ta'bea]  
' excuse me'

**karé**  
[ka'ree]  
' here'

**gelei**  
[ge'leii]  
' little finger'

(56) **aV**  
**katá**  
[ka'taa]  
' there'

**læe**  
['lae]  
' thread'

**rasai**  
[ra'sai]  
' pretty'

**tamao**  
[ta'mao]  
' ax'

**yau**  
[ya'ua]  
' to fish with a line'

(57) **uV**  
**ua**  
[ua]  
' no, not'

**bue-bue**  
['bue-'bue]  
' swing'

**tui**  
['tui]  
' bamboo'

**fuo**  
['fuo]  
' green bean'

**mafú**  
[mafu]  
' to sell'

(58) **oV**  
**toa**  
[toa]  
' to give'

**oe**  
['oe]  
' yes'

**rimoi**  
[r'moi]  
' one'

**kombó**  
[komb'bo]  
' little'

**cou**  
['cou]  
' tribute'

The second reason for regarding vowel sequences as two separate phonemic segments is that this analysis is compatible with the generalized stress rule, which, as pointed out previously, states that stress normally falls
on the penultimate syllable. If sequences were treated as monosyllabic diphthongs, each instance would produce an exception to an otherwise highly regular penultimate stress rule.

The third reason for analyzing VV sequences as separate segments is that such sequences often occur in word-final position. This would mean that if the /i/ or /u/ were considered to be the semivowels /y/ or /w/, the result would be a consonant in the word-final position. Such a pattern would be very inconsistent with Tidore phonology, which has no word-final consonants with the exception of nasals and those found in borrowed words (see Section 4).

Finally, one may be tempted to posit the hypothesis that ambiguous VV sequences ending in /i/ and /u/ should be viewed either as diphthongs or as vowel-semivowel combinations ending in /y/ and /w/. This hypothesis however would be unacceptable, since the ambiguous segments which need to be considered are not just limited to Vi and Vu. Instead, we see /ai/ and /ao/ sequences as well, which pattern in the same way as Vi and Vu. Since all the VV examples below are spoken with the same timing by native speakers, it would be undesirable to consider some of the examples as diphthongs, while considering others VV combinations.

(59) gelei [ge'lei] 'little finger'
jau [jau] 'to hold on'
dae [dae] 'weapon'
lao ['lao] 'eye'

In the light of the above discussion, it seems best to interpret all VV sequences as separate vowels rather than as diphthongs or as semivowel sequences.

4. SYLLABLE STRUCTURE

The basic syllable pattern in Tidore may be written as (C) V (C). The possible combinations from this basic pattern are as follows: V, CV, CVC. However, Tidore does not exhibit the VC syllable sequence. This is different from both Pagu (Wimbish 1991:11) and Galela (Shelden 1989:83) which have a VC syllable sequence, but similar to Sahu (Voorhoeve 1987:19) which does not. Thus Tidore syllable patterns are limited to V, CV, and CVC.

The V pattern can occur word initially or word finally

(60) ofu ‘bee’ V.CV
    ea ‘sleepy’ V.V

The number of V syllables in succession is limited to two without an intervening C.

(61) ea ‘sleepy’ V.V
    limau ‘city’ CV.CV.V

CV is the most common syllable formation.

(62) danata ‘to pickpocket’ CV.CV.CV
    laga ‘to jump’ CV.CV

CVC combination also occurs frequently in both initial and final syllables.

(63) tufang ‘numb’ CV.CVC
    honci ‘kerosene lamp’ CVC.CV
Of the consonants found in syllable-final position, the nasals are most common with the exception of /ny/. The following non-nasals have also been found, but very infrequently: /l/, /r/, and /d/. Below are some examples of consonants in the syllable-final position. All also occur in the CVC syllable structure.

(64) dalfuku ‘knot’
kornono ‘dark’
had ‘week’
fang ‘to pay’
gam ‘village’
gan ‘louse’

All consonant clusters occur across syllable boundaries and are rare. Only /ng/, /m/ and /n/ were found with any frequency in syllable-final monosyllabic words. There were only 10 words in 2500 that had syllable-final consonants other than nasals within consonant clusters, making these ten highly suspect; possibly they should be attributed to loan words or frozen forms of Proto-North Halmahera.

All consonants occur word initially and word medially in Tidore. However word-final consonants are limited to seven. Of these seven, /l/, /r/, /t/, and /s/ only occur in loan words or frozen forms of Proto-North Halmahera which included these forms (Wada 1980:508; Voorhoeve 1984:6), while /n/, /m/, /ng/ occur more generally in Tidore words. While Tidore has word-final nasals, Galela (Shelden 1989:82) and Sahu (Visser and Voorhoeve 1987:12,18) do not have any. There is comparative evidence that Proto-North Halmahera allowed all consonants except voiced stops in word-final position. In contrast to previous statements positing Tidore as a language with no word-final consonants (Shelden 1989:86; Voorhoeve 1982:41) Tidore does in fact allow three nasal consonants to occur word finally. Other than these three nasals, it appears that Tidore, like other North Halmaheran languages has dropped the word-final consonants (Wada 1980:508; Voorhoeve 1984:6). A few examples of word-final nasal consonants are as follows:

(65) nong ‘charcoal’
mom ‘to wake up’
dun ‘daughter-in-law’

It should also be noted that although Tidore allows stems of up to five syllables, two-syllable stems are the most common.

5. MORPHOPHONEMICS

5.1 N- Prefix

The N- prefix which is consistently found in North Halmaheran languages (Kern 1891: 493-530) has also been found to be productive in Tidore. Although there remains many questions regarding the use of this prefix, it appears that in Tidore, the N- prefix can (1) derive nouns from verbs, and (2) change the transitivity of a verb. This is much in keeping with other North Halmaheran languages such as Galela (van Baarda 1908:18-29), Tabaru (Fortgens 1928:373-4, 401-4), Kotynski 1988:187), Tobelo (Hueting 1936:320-23), Sahu (Visser and Voorhoeve 1987:20-22), and Pagu (Wimbish 1991:30-32). When the N- prefix is added, it creates a number of phonological changes at morphophonemic boundaries (van der Veen 1915:105).

In Tidore, the surface form of the N- prefix is [g] which evidences itself when affixed to vowel initial roots. This is quite similar with Pagu (Wimbish 1991:30-32) where in all but a very few cases, the N- prefix surfaces as a [g] on vowel-initial roots. Those that do not appear as a [g] in Pagu and Loloda (van Baarda 1904: 344) appear as an [ng]. When a root begins with a voiceless consonant, the manner and point of articulation stay the same, but a voicing rule is added, much like Tabaru (Kotynski 1995:8). Since the surface form of the N- prefix in Tidore is g-, all subsequent references will follow that identification rather than N-. The phonological changes in Tidore at the boundaries of consonant-initial roots are shown in the table below.
Table 3. Root-initial changes with N-prefix.

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<td>j</td>
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Several examples of the modification of the consonant-initial syllable roots that serve to derive nouns from verbs are shown in the following examples:

(66) **talabutu** ‘to bargain’ → **dalabutu** ‘sale items’
**caga** ‘to branch out’ → **jaga** ‘branch, stalk’
**ciko** ‘to turn, bend’ → **jiko** ‘a curve’
**forero** ‘to order’ → **borero** ‘an order’

Modification may be coupled with reduplication in which case the initial consonant is reduplicated along with the vowel /o/. The order of application is that modification comes first, with reduplication following. In this case, nouns are also derived from verbs as shown in the examples below.

(67) **toa** ‘to give’ → **dodoa** ‘gift’
**tila** ‘to divide’ → **dodila** ‘section, part’
**uci** ‘to go down’ → **goguci** ‘descendant’
**togi** ‘to stop’ → **dodogu** ‘the end’

When prefixes are applied to roots, the same phonological changes take place as shown in Table 3. The set of examples below show intransitive roots becoming transitive by adding the so- prefix. In this case, the modification process takes place first, with the affixation following.

(68) **tagi** ‘to walk’ → **sodagi** ‘to walk someone’
**paje** ‘to ride’ → **sobane** ‘to transport something’
**fugo** ‘to go out’ → **sobugo** ‘to throw away something’

The second set of examples show transitive roots receiving an increase in valency by adding the so-prefix.

(69) **hotu** ‘to dry’ → **songotu** ‘to dry something out’
**ciko** ‘to bend, turn’ → **sojiko** ‘to bend something’
**toa** ‘to give’ → **soda** ‘to hand over something’
**kone** ‘to tie’ → **sogone** ‘to tie something up’
**togi** ‘to stop’ → **sodogu** ‘to stop something’

5.2 Borrowings

Tidore restructures borrowed words to fit the phonological system. This is done by the simplification of consonant clusters as shown in the following examples of Tidore words borrowed from Indonesian and Dutch.
(70) campur (Indonesian) → capu ‘to mix’
    knoop (Dutch) → kenop ‘button’
    semangka (Indonesian) → samaka ‘melon’
    jendela (Indonesian) → janela ‘window’
    tanduk (Indonesian) → tadu ‘horn’
    stopfles (Dutch) → tafales ‘glass jar’

In the case of other borrowed words ending in a consonant, Tidore restructures the syllable to fit the favored CV syllable pattern. This may mean dropping or adding a vowel after the final consonant to maintain a CV pattern. This is different than Galela which only adds a vowel (Shelden 1989:85). Some examples are as follows:

(71) cobek (Indonesian) → cobe ‘mortar’
    CV.CVC → CV.CV

    gunting (Indonesian) → guti ‘to cut’
    CVC.CVC → CV.CV

    layang-layang (Indonesian) → lianga ‘kite’
    CV.CV-CV.CV → CV.V.CV

    tas (Indonesian) → tasi ‘bag’
    CVC → CV.CV

6. CONCLUSION

This paper presents an initial glance at the phonology of Tidore, a member of the North Halmaheran Family of the West Papuan Phylum. The data presented describes the consonant and vowel inventory, as well as word stress and syllable structures. A brief look was taken in terms of the N- prefix found in North Halmaheran languages, and how Tidore manifests this prefix in the surface form. Finally, word borrowings are analyzed to ascertain how Tidore phonology accommodates unfamiliar segment clusters.

In addition to any linguistic contribution aiding research in Halmaheran languages, it is hoped that this paper will contribute in a practical manner to the development of an orthography which is planned for the Tidore language by the Kantor Wilayah Daerah Halmahera Tengah. It will also assist future research in comparisons with other regional languages, including a precise description of Proto-North Halmahera. It is also hoped that this paper will assist the Indonesian government and the Tidore people in documenting one of the many important languages in the Indonesian archipelago.
In a mountain village lived a grandmother with her grandson named Abdul.

Everyday the grandmother worked in the garden while Abdul went to school.

After school Abdul would help his mother cook rice for lunch.

They would cook the rice in an old black pot.

The old black pot was not an ordinary pot, but a magic pot.
When the grandmother poured water into the pot, she said.

“Hey, cook pot, cook the rice.”

Then the pot would get hot and boil and fill with steaming hot rice.

“That's good enough pot, cook no more,” the grandmother would say when the rice was done.

Abdul and his grandmother enjoyed living in the village.
Although they were not wealthy, each day they ate delicious rice from the magic pot.

One day the grandmother had to go to another village.

"Abdul," the grandmother said, "while I am away you may not use the magic pot; you will be staying with your aunt."

Immediately the grandmother left.

Everyday Abdul and his friend would stop by his grandmother's house to see if she had come home yet.
One day Abdul asked his friend, "Do you want to see my grandmother's magic pot?"

"Coba ngon nowaje ena ma bobeto alu romtoha boso if 2p 2p-say 3nh GEN RED-magic formula times five pot
enagé langsung yosoyuka bira ma saki foloi."
"If you say five words the pot will immediately begin cooking very delicious rice."

"Coba sobai boso enagé te fangare?" una idagilom
"Can you show me this pot?" his friend asked. So Abdul took the pot and added water.

First he said, "Hey"

"Soyuka ma boso yuka ma bira."
"Cook pot, cook some rice."

Oras enagé marua boso ma doya mulai komi si yopele si
time 3nh-DET GEN-content pot GEN inside begin move and 3nh:S-boil and
The children squatted by the pot and watched it fill with rice.

Now make it stop so we can eat it, " his friend said.

But when Abdul tried to say the magic words, he had forgotten them. "Stop cooking," he said, but the magic pot kept on cooking.
Immediately the rice spilled out and began to cover the ground.

The boys tried to put it in bowls, but the pot just kept cooking.

"Stop, Stop! Enough rice," Abdul yelled at the pot as the rice spilled out the door.

Soon the neighbors came running with their bowls and pots.

They tried to take the rice.
It spilled into the street and down into the village.

At first everyone was happy to have so much rice to eat.

But soon the people became afraid when the rice continued to spill (out of the house).

It flowed over the street and into the houses.

“The head of the village said, “Abdul, you must stop the pot from cooking more rice.”

“Our village will be destroyed.”
But try as he might, Abdul could not remember the magic words.

He was just about to smash the pot with his ax when he saw his grandmother coming up the mountain.

"Grandmother!" he cried.

"I've done a terrible thing. I asked the pot to cook some rice but I've forgotten how to make it stop."

"What are the magic words?"
“Ha!”
Ha
Hey!

“Hey!”

“You did not obey my orders,” said grandmother.

“I told you!”

“Don’t use the magic pot!”

Grandmother went into the kitchen, stood over the boiling pot and said, “Stop pot, cook no more.”

Immediately the pot stopped cooking the rice.
All the people were jubilant.

“Because you did not listen to me the village was almost destroyed.”

“Now you and your friend must be punished.”

“There is a bowl and spoon and don’t stop eating until all the rice is gone,” said the grandmother.

After that day Abdul never again used the magic pot.

For many months he didn’t want to eat rice.

Next time he would listen to his grandmother.
NOTES

1. Field research for this paper included four visits to Tidore between July 1993 and April 1994. The sponsorship for this project came from the Bupati's office in Halmahera Tengah stemming from the Bupati's desire to have the Tidore language documented in a useable form. The authors wish to express their thanks to Bupati Drs. Andili as well as the many people of Tidore who were so helpful. The authors are also grateful to Edward Kotynski, Wyn Laidig, and Howard Shelden for comments on drafts of this paper, and to Jan Perry for help with manuscript preparation.

2. Some exceptions to the penultimate stress rule are as follows:

   a. words formed by reduplication of monosyllabic roots (e.g. dum-dum ‘bathroom’)
   b. compound words with a monosyllabic second constituent such as enage from ena ‘it’ plus ge ‘this’, and jibobomoi from jibobo ‘spoon’ plus moi ‘one’.

3. One example that appears to be more in keeping with Tabaru which has [+voice] [+nasal] and [+velar] as the default settings (Kotynski 1995:8) is as follows:

   hotu → songotu  ‘to dry, to dry something out’

   It is not clear whether the above example is an exception, since it was the only such example found among 2500 words.

4. The following is a list of abbreviations used to gloss examples in this paper:

   1sm  1st person singular masculine
   1sf  1st person singular feminine
   1s   1st person singular
   1pe  1st person plural exclusive
   1pi  1st person plural inclusive
   2s   2nd person singular
   2p   2nd person plural
   3sf  3rd person singular feminine
   3sm  3rd person singular masculine
   3p   3rd person plural
   3nh  3rd person nonhuman
   ADH  Adhortative marker
   CLASS classifier
   DET  determiner
   GEN  genitive
   IMP  imperative marker
   incl inclusive
   NEG  negative marker
   P    possessive marker
   Ph   phrase
   QUANT quantifier
   QM   yes/no question marker
   RCPR reciprocal marker
   RED  reduplication
   REFL reflexive marker
   S    subject marker
   TR   transitive marker
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