Exploring the Phonological System of Ninde (Malekula, Vanuatu)

Jean Murray

Abstract
Ninde is one of approximately 30 languages spoken on the island of Malekula, the second largest island of Vanuatu, itself home to some 100 indigenous languages. Like most Malekula languages, it is unwritten, and very limited grammatical research has been carried out with the language. Most of the analysis that is available is written based on second-hand written accounts of the language. While Charpentier (1982) and Tryon (1976) did hear the language first-hand, they provide no audio recordings to compare to modern speakers and provide only word lists with no examples of whole language or natural speech. This study provides the first in-depth phonological analysis of the language which was conducted through the analysis of audio recordings of both careful and natural speech, broken down into single sentence or single word soundbites. Through this analysis, a working orthography with which the language should be able to be written is proposed. The orthography is currently being reviewed by the speaker community for approval.

Keywords: Ninde, Malekula, Vanuatu, Language, Phonology, Orthography
1. Background

Ninde is an Austronesian language spoken in the Southern part of Malekula\(^1\) Island, Vanuatu. The name, like many other Malekula languages, literally translates to ‘what’\(^2\) (Lynch and Crowley 2001:73). The language is spoken primarily by the cultural group traditionally known as Mewun. Presently, the language is most commonly referred to as Ninde (Charpentier 1982, Lynch and Crowley 2001) or Nide, but has also been called Mewun (Deacon 1934, Gowers 1976, Wheatley 1992) and Meaun (Ray 1926), which references the cultural group from which it originates. It is also called Labo after one of the villages in which it is spoken today (Tryon 1976). This project began via the community itself due to a growing sense of language loss over the past several generations. Unfortunately, most of the previous printed resources offer little more than extensive wordlists or very initial analysis. In contrast, this project provides the first in-depth phonological analysis of the language through first-hand sources. This was done with both careful and natural speech in order to get an accurate representation of the language. This is important in that the proposed orthography provided through this research is the first that is grounded in evidence, and has potential for use beyond the linguistic community, but back to the speaking community itself.

1.1 Geographic Location

The Oceanic nation of Vanuatu consists of some 80 islands spread less than 2,000 kilometres east of Northern Australia (Peace Corps 2013). While the exact number of languages has yet to be determined, most linguists agree there are over 100 (Tryon 2010:74) with at least 80 of these still actively used (Barbour 2013). With a population of only 234,000 according to the

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\(^1\) Also spelled Malakula.

\(^2\) Many other languages (e.g. Nahavaq (Dimock 2009), Neve’ei (Musgrave 2007), Nese (Crowley 2006)) follow this pattern. It is Dimock’s hypothesis that this naming process emerged in response to first contact with foreigners when ‘what?’ would have been the natural response to an unknown tongue. Thus, many of the languages of Malekula were named (Dimock 2009).
most recent census (Vanuatu National Statistics Office 2009:2), Vanuatu is the most linguistically dense nation in the world (Crowley 2004; Dimock 2009).

One of those 80+ languages is Ninde, spoken on the island of Malekula – the second largest of Vanuatu’s islands. Malekula boasts a population of approximately 23,000 people (Vanuatu National Statistics Office 2009:3) and some 30 actively-spoken languages (Lynch 2014:1). The average number of speakers per language is less than 1,000 speakers each, lower even than the national average (Blust 2009:100). Ninde is spoken in the south-western part of the island in an area known as Southwest Bay. This area extends from just north of the area known as Seniang as far south as Hook Point and slightly into the interior of the island. Sometime after World War II, the entire population of this geographic area moved from the interior where they had historically dwelled down to the coast. While some founded the village of Lawa, others joined the pre-existing villages of Labo and Wintua (Charpentier 1982, 45). Within the past 15 years, population growth, tribes shifting to their own land and other factors have contributed to the creation of four other small villages: Mahapo, Enimb, Lorlow, and Lamlow. These Ninde-speaking villages are all located within Southwest Bay.

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3 According to personal communication with Leina Isno, language consultant.
Figure A: Map of Malekula Island (Government of Vanuatu: OGCIO & TRR 2014)
1.2 Number of Speakers

In 2001, Lynch & Crowley estimated there were 1,100 speakers of Ninde; however, it is currently believed to be much fewer than previously thought. Recent population statistics have given more accurate measures of all but one village through Statistics Vanuatu (pers. comm.):

<table>
<thead>
<tr>
<th>Village⁴</th>
<th>Population</th>
<th>Number of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labo</td>
<td>97</td>
<td>32</td>
</tr>
<tr>
<td>Lawa</td>
<td>405</td>
<td>94</td>
</tr>
<tr>
<td>Wintua</td>
<td>274</td>
<td>60</td>
</tr>
<tr>
<td>Lorlow</td>
<td>142</td>
<td>34</td>
</tr>
<tr>
<td>Mahapo</td>
<td>100</td>
<td>26</td>
</tr>
<tr>
<td>Lamlo</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>Enimb</td>
<td>unknown</td>
<td>unknown</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,053+</strong></td>
<td><strong>256+</strong></td>
</tr>
</tbody>
</table>

While this estimate nearly matches Lynch & Crowley’s 2001 estimate of speakers, this appraisal is a population count, not a count of Ninde speakers. It is known that Ninde is not the only indigenous language spoken in the largest village, Lawa. Further, it is believed that fewer members of the younger generations are proficient in the Ninde language. While no official survey has been taken, the actual number of speakers is likely to be much less than the total population count.

⁴ Villages spelled as given by Statistics Vanuatu, though Enimb is not included in their list.
1.3 Linguistic Landscape

It is important to note the geographic relationship of Ninde with other languages in terms of potential influence or borrowings. As shown in Figure C, Ninde is neighboured by the following languages: Lendamboi to the north, and Navwien, Nāti, Nahavaq (also known as Sinesip or Southwest Bay), and Naha’ai (also known as Malfaxal) to the south (Lynch 2014:11). Clark (2009:39) asserts that while Ninde is one of the most lexically isolated of the North and Central Vanuatu languages, its highest cognate percentages appear with Nahavaq and Naha’ai. Along with these, Lynch (2014:11) also believes Nāti to also be closely related.

Figure B: Language Map of Malekula Island (Lynch 2014:4)
Beside other indigenous languages, Ninde survives alongside the dominant, former plantation pidgin Bislama. With Bislama as its national language, Vanuatu is unique in its language status by having a former pidgin with higher constitutional status than a former colonial language\(^6\) (Crowley 2004:3; Crowley 1989:37). The former colonial languages, English and French, are recognised as co-equal ‘official languages’ alongside Bislama (Crowley 2004:3; Early 1999:13). Across the nation, Bislama effectively acts as the ‘default’ language when speakers of differing linguistic backgrounds come together. A growing number of ni-Vanuatu are growing up as first-language speakers in Bislama, with no indigenous language spoken. In 2004, Crowley estimated this group to represent as much as 10% of the population (p. 4). On Malekula, English is used in official domains such as formal education, while Bislama is not (Barbour 2010:225; Crowley 2004:3). As seen in Figure B, there is a primary school in both Lawa and Wintua. Bislama remains dominant in domains such as religion, politics and regional affairs (Barbour 2010:225). Borrowed words from Bislama and English are easily recognisable in the language\(^7\) ([toti] – ‘rubbish’). In turn, Bislama borrowings are now common in the speech of Ninde speakers.

1.4 Language Status

In 2003, the United Nations Education, Scientific and Cultural Organization (UNESCO) organised a group of international linguists to create a methodology for assessing the vitality and endangerment of a given language. This group put together a concept paper with nine criteria with which to assess a language. The first six ‘major criteria’ evaluate the vitality and state of endangerment. There are also two criteria which gauge language attitudes and the final criterion evaluates the urgency of need for documentation. The first six ‘major criteria’

\(^6\) Article 3(1): The national language of the Republic is Bislama. The official languages are Bislama, English and French. The principle languages of education are English and French. (Constitution of the Republic of Vanuatu. Art. III, Sec. 1).

\(^7\) Nearly 95% of Bislama words are English borrowings (Crowley 2004:3).
for assessing the vitality and current state of endangerment include: 1) Intergenerational Language Transmission; 2) Absolute Number of Speakers; 3) Proportion of Speakers within the Total Population; 4) Shifts in Domains of Language Use; 5) Response to New Domains and Media; 6) Availability of Materials for Education and Literacy. Languages can be ranked on a continuum of stability (from stable to extinct); however, this rating itself is not stable. The ‘safety’ of a language can be threatened relatively quickly if there is a change in speakers’ attitudes toward the language. Because there has never been a thorough survey of the language, several of these criteria cannot be measured. Of those that can be measured, Ninde rates on the low end of the Grade 0-5 scale. For example, when assessing the availability of materials for education and literacy, Ninde ranks Grade 0: No orthography available to the community at present.

2.0 Previous Research

While there are several accounts of the Ninde language, there has been no comprehensive analysis of the phonology or morphology of the language from first-hand whole language data. While some analyses exist, it is either from second-hand accounts or provides little proof of the proposed phonology, morphology and other grammatical rules. While there are other wordlists in the wider corpus, following are brief accounts of the pieces that helped inform the current project.

Sidney Ray (1926:293-302) was the first to provide a linguistic analysis of the language in the form of a short grammar sketch. This sketch was based on the written records of missionaries and while Ray does make assertions of the phonological inventory of Ninde (which he refers to as Meaun), he also admits to having “no account of Meaun sounds” (1926:293). His work begins with an alphabet containing five vowels, twenty-three consonants and one ‘compound consonant’ (1926:293). Ray also provides a brief account of
various parts of speech (articles, nouns, pronouns, genitive, adjectives, verbs, adverbs, prepositions, conjunctions, numerals) and phonological and morphological processes (vowel harmony, affixation, negation). Each section contains rules and/or forms of the given language feature with examples following. While the overall sketch is brief, Ray provides a substantial mix of words, phrases and sentences.

Bernard Deacon (1934:730) provides a single short text regarding the creation of the Mewun people, referring to the language by the same name (Mewun). This story contains approximately 30 unique lexical items. The rest of Deacon’s work is filled with anthropological information with scatterings of lexical items in the mix. Generally, these terms are local names of plants or animals, but without enough description for an outsider, and possibly not even an insider, to identify them. There is a description of death and the soul (pps. 561-562) that contains ten words relating to the body’s intangible features (including soul, shadow, breath). Pages 91-96 offer a relatively extensive list (approximately 65 items) of kin and address terms. Deacon further provides a brief analysis of various suffixes used within the kin term system. He also proposes a list of 12 ‘months’ that roughly correspond to the yearly cycle of the yam (pps. 177-178). Of these 12 ‘months’, however, he only has a translation for seven (‘axe’, ‘fence’, ‘cover the yams’, ‘fully cover the yams’, ‘finish planting’, ‘leaves fully grown’ and ‘take out the yams’). Due to the organisation of Deacon’s work, however, it is occasionally confusing to establish the source of his data. More investigation into his work needs to be completed to identify whether data is, indeed, from Ninde or from neighbouring languages.

Darrell Tryon (1976) compiled a comparative database of nearly 300 words in 179 different languages, one of which was Ninde, which he refers to as Labo. Data was collected from both Lawa and Wintua villages. Labo is one of his more extensive data sets, including 280 entries for 292 attempted elicitations. These elicitations include several basic nouns
(including body parts, kin terms, animals), stative words (including various colours and physical properties), numerals, pronouns, various verbs (including sing, say, call out, walk, sit) and locatives. Like Charpentier’s (1982) work, this volume is laid out in a comparative format, rather than a single word list. Also similar to Charpentier, there are no examples of sentences, phrases, or natural speech to give context to the words elicited.

Jean-Michel Charpentier (1982) compiled a much more extensive vocabulary of approximately 3,500 words via a linguistic survey, as well as some grammatical morphemes. Spending his time based in Namal among the Small Nambas (Cochrane and Quanchi 2014:258), he collected data from several South-Malekula languages leading his final volume containing data from nineteen total languages. The list contains lexemes relating to the human body, life cycles, crops, animals, cooking, sensations/emotions, numerals, various kinds of verbs (including transitive, intransitive, auxiliary), and pronouns (Charpentier 1982:87-103). Unfortunately, some of the translations are unclear, and there are no examples of sentences, phrases or any other context in which the words are used.

In 2009, Ross Clark published a comparative study of North and Central Vanuatu languages. In this, he proposed a phoneme inventory based on the data collected by Charpentier (1982), Tryon (1976), Ray (1926), Gowers (1976) Deacon (1934) and Walter and Sam (1993). His proposed inventory includes a collection of 19 consonants and five vowels (2009:39). He gives a brief description of the proposed phonology and phonological conditioning, as well as changes in phonology from Proto North and Central Vanuatu (p. 39-41). He did not, however, work from any sound files or hear the language first-hand.

In 2011, Liz Pearce (Victoria University of Wellington, NZ) compiled the first-known audio recording of Ninde, which consisted of a story told by Ms. Leina Isno, a ni-Vanuatu woman from Southwest Bay who has resided in Wellington for nearly 15 years. The story is transcribed and annotated. Pearce (along with students Laura Dimock and Emily Greenback)
used this data elicited from Ms. Isno in order to compile a brief grammar sketch. The phoneme inventory proposed comprises 18 consonants and six vowels. Pearce, Dimock & Greenback also describe pronouns, nouns and noun phrases (articles, demonstratives, adjectives, numerals, quantifiers, possessives), verbs and verb phrases (prepositions, negation, interrogatives), and complex sentences (coordination, subordination, purpose, conditional). A mixture of words, phrases, and both simple and complex sentences are used in the sketch; however, all elicitation is from a single informant. The unpublished grammar sketch and audio recording of a Ninde story (along with its annotation) is available online through the Open Language Archives Community (OLAC 2015).

3.0 The current project

3.1 Background

My work with this project began when Leina Isno, the language consultant from Pearce’s work, contacted Dr Julie Barbour of the University of Waikato following a press release regarding her ongoing research which explores mood in Malekula languages. Having noticed a shift in her home village in the weakening of intergenerational transmission, Ms Isno contacted Dr Barbour in hopes of gaining some sort of assistance. From November 2013 to February 2015, Isno made several trips from Wellington to Hamilton to work as a key participant, providing linguistic data. In January 2014, Ms Isno’s parents (Peter and Ruby Isno) also travelled from Southwest Bay (via Wellington) to Hamilton for seven days in order to provide further linguistic data in the form of stories and other natural speech, as well as elicited material prompted by pictures.
3.2 Methodology

Data for this project has been collected through several means. Upon Ms Isno’s first visit, she was asked to tell a story which was recorded. In preparation for her visit with her parents, an ethnobotanical photo journal was compiled by Dr Barbour with pictures of trees, plants, pigs, birds, fish, and other culturally appropriate photo prompts. The photos not only elicited names for the individual item pictured, but often other related nouns and verbs along with rich anthropological information. While Leina, Ruby, and Peter all participated in this exercise, Peter was the primary informant during this process. All three participants recorded stories or instructional information regarding activities such as making laplap, burying the dead, and preparing the garden. During later trips to Hamilton, Ms Isno also provided several recordings of both natural speech and elicitation through conversations with Dr Barbour prompted by pictures in literacy materials prepared for another Malekula language. Finally, several lexical items from Charpentier (1982) and a few items from Deacon (1934) were cross-checked with Ms Isno during another trip.

The audio recordings were suitably processed into single words, phrases, or sentences. Links to these audio files were then placed in a word file alongside the phonological transcription and appropriate English gloss. A comparative spreadsheet was also created with all recorded language data from Ms Isno alongside the written wordlists of Charpentier (1982), Tryon (1976) and Deacon (1934). The elicitations prompted from the ethnobotanical photo journal from Leina, Peter, and Ruby Isno\(^8\) were also included in this comparative database. Countless hours were spent listening to sound files and comparing the environments in which sounds occur.

\(^8\) These items were recorded in print in my own and Dr Barbour’s working copies of the photo journal, but not recorded.
3.3 Variances with previous works

3.3.1 Fricative variation

It is significant that both Ray (1926) and Clark (2009) completed their analyses from written records alone and not from personal experience listening to the language. It is interesting to compare their analyses, however, with those who conducted fieldwork [Tryon (1976) and Charpentier (1982)] and worked with language consultants first-hand [Pearce (2011) and Murray (2015)]. I have used my own analysis as well as the information provided in Lynch (2014:6) to compile the following chart comparing the greatest points of difference in the proposed consonant phonologies of Ninde:

Table A: Comparison with previous works

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>unclear</td>
<td>δ</td>
<td>ļ</td>
<td>lh</td>
<td>l</td>
<td>ķ</td>
</tr>
<tr>
<td>(b)</td>
<td>V</td>
<td>β</td>
<td>v</td>
<td>v</td>
<td>β</td>
<td>w</td>
</tr>
<tr>
<td>(c)</td>
<td>H</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td>γ</td>
<td>x</td>
</tr>
</tbody>
</table>

33.1a

The dental fricative [ð] is found throughout Ms Isno’s recorded data and aligns with the analysis of Tryon, who describes it as an ‘interdental lateral’ (1976:31). Charpentier (1982) describes this same sound as retroflex lateral [ļ] and Clark (2009) as aspirated lateral [lh]. Pearce’s (2011) analysis is of note because, although she used the same language consultant as the current research, she describes the phoneme in question as ‘an alveolar lateral fricative,

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9 Though Tryon and Charpentier did not formally propose phonologies, these sounds consistently align with the sounds found in the same position of the same words cross-analyses.
possibly voiced\textsuperscript{10} (as cited in Lynch 2014). This variation across analyses is seen through the differences in the same word recorded identically in all cases except for this individual phoneme:

\textbf{Table B: Comparison of dental fricative, lateral and alveolar fricative}\textsuperscript{11}

\begin{tabular}{|l|l|l|l|l|}
\hline
\hline
(a) ‘pig’ & na\textsuperscript{a}ba\textdaggerai & namba|ai & nabalai & nabo\textdaggerai \\
(b) ‘I go’ & na\textcircled{o} & \textcircled{lo\textsuperscript{12}} & na\textreg{lo} & na\textcircled{o} \\
(c) ‘wind’ & nala\textsuperscript{j} & na\textjaj nala\textsuperscript{j} & na\textsuperscript{lai} & na\textsuperscript{dai} \\
(d) ‘red’ & mia\textsuperscript{d}e & mia|e & miave & mia\textsuperscript{d}e \\
(e) ‘sing’ & ia\textsuperscript{d}e & ia|ai\textacutel |a & iave & ja\textsuperscript{d}eja\textsuperscript{d}e \\
\hline
\end{tabular}

Line (a) shows a clear disagreement among Tryon, Charpentier, and Pearce’s interpretation of the final consonant phoneme. Likewise, line (b) shows the same variation in the interpretation of the initial consonant in the morpheme meaning ‘go’. Line (c) sees Tryon straying from his usage of [ð]. This appears to occur due to a variation in the lexeme, not phoneme. When Charpentier elicited the Ninde word for ‘wind’, he received the compound \textit{nala\textjaj nala\textsuperscript{j}}. It is this first word \textit{nala\textsuperscript{j}} that was also recorded by both Pearce and myself, though with varying interpretation of the consonant in question. It appears Tryon elicited the second lexeme of unknown meaning (\textit{nala\textsuperscript{j}}). While Charpentier’s interpretation of [] is scrutinised, all current

\textsuperscript{10} Though her personal communication with Lynch expressed ‘possibly voiced’, she uses the voiceless fricative in her proposed phonology.

\textsuperscript{11} For comparative reasons, I leave out Ray and Clark as they worked only from written data and had no first-hand account of Ninde sounds.

\textsuperscript{12} Charpentier’s account is ‘go’ rather than ‘I go’.

14
and previous research attests the existence of the /l/ phoneme used by Tryon in this elicitation.

### 3.3.1b

Line (b) of Table A shows the variation among the historical data in another fricative; while Ray (1926), Charpentier (1982) and Clark (2009) attest labio-dental [v], Pearce (2011) and Tryon (1976) attest bilabial [β]. The current analysis differs because while the bilabial fricative [β] is attested throughout the data, it is shown in Table BB to be in free variation with the phoneme /w/; thus, [β] is not listed as a separate phoneme.

#### Table BB: Free variation of [β] and [w]

<table>
<thead>
<tr>
<th>/wije/</th>
<th>[wije ~ βije]</th>
<th>‘1. how many/how much 2. place name’</th>
</tr>
</thead>
<tbody>
<tr>
<td>/wəkwək/</td>
<td>[wəkwək ~ βəkək]</td>
<td>‘teach, educate’</td>
</tr>
<tr>
<td>/wəɡəwəɡe/</td>
<td>[wəɡəwəɡe ~ βəɡəβəɡe]</td>
<td>‘pay a fine’</td>
</tr>
</tbody>
</table>

#### Table C: Bilabial vs. Labio-dental fricative

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) ‘stone’</td>
<td>neβet</td>
<td>nevet</td>
<td>neβet</td>
<td>newet</td>
</tr>
<tr>
<td>(b) ‘four’</td>
<td>iws</td>
<td>ves</td>
<td>βes</td>
<td>wes</td>
</tr>
<tr>
<td>(c) ‘fish’</td>
<td>nimjaðe</td>
<td>nimiaλe</td>
<td>nəmiaβe</td>
<td>nimjaðe</td>
</tr>
</tbody>
</table>

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13 Both sounds are present in the single sound file. The word is repeated three times. The first is somewhat ambiguous, but appears to be [βəkək]. The second elicitation is definitively [βəkək], while the final form is [wəkwək].

14 Both sounds are present in the single sound file. The [β]-form appears first with the [w]-form following.
Lines (a) and (b) in Table C clearly exemplify the variations among the analyses. Line (c), however is of particular interest. While Tryon (1976), Charpentier (1982) and the current analysis show variation consistent with the phonemes described in Table B, Pearce chooses the bilabial fricative. There are further inconsistencies with Pearce’s proposed phonemes in question one of which is discussed in section 1.6.3.2.

3.3.1c

The final variation shown in line (c) of Table A is variation in the velar fricative. Tryon (1976) and Charpentier (1982) use the voiceless velar [x], while Pearce uses its voiced counterpart [ɣ]. This data aligns with Charpentier (1982) and Tryon (1976) in proposing voiceless velar [x] as the appropriate phoneme.

Table D: Unvoiced vs. Voiced velar fricative

<table>
<thead>
<tr>
<th></th>
<th>Tryon</th>
<th>Charpentier</th>
<th>Pearce</th>
<th>Murray</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>‘sleep’</td>
<td>mitox</td>
<td>mitox</td>
<td>mitoɣ</td>
</tr>
<tr>
<td>(b)</td>
<td>‘work’</td>
<td>xa</td>
<td>-----</td>
<td>ɣa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1976)</td>
<td></td>
<td>(2011)</td>
</tr>
<tr>
<td>(c)</td>
<td>‘woman’</td>
<td>watawox</td>
<td>wataux</td>
<td>watawoɣ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1976)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table D shows the variation between Pearce’s work and all other analyses.

3.3.2 Consonant Clusters
Another major point of difference in this analysis compared to those conducted previously is the occurrence of consonant clusters. While Tryon includes two examples of the consonant cluster [tl] (1976:378 and 413), no other previous data accounts for the consonant clusters proposed in this analysis. While Charpentier (1982) includes [ə] between the consonants of suspected clusters, Pearce (2011) uses the same lateral fricative [l] that is seen in Table B.

**Table E: Consonant Clusters**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>(a)</td>
<td>‘big’</td>
<td>tlepe</td>
<td>lepe</td>
<td>tlepe</td>
</tr>
<tr>
<td>(b)</td>
<td>‘three’</td>
<td>itl</td>
<td>ll</td>
<td>tl</td>
</tr>
<tr>
<td>(c)</td>
<td>‘eight’</td>
<td>tumanetl</td>
<td>dumanell</td>
<td>təmone tl</td>
</tr>
</tbody>
</table>

While the variation is clear, Pearce’s choice of [l] is particularly interesting in relation to the range of sounds it is used to cover through her data. Not only is it used where this data uses the dental frictative [ð] and consonant cluster [tl], but also where this analysis proposes the consonant cluster [kl] and lateral [l].

### 3.3.3 Complex segment [m̩bʷ]

There is one more significant point of difference in the proposed consonant phoneme inventory with those in previous analyses: the complex segment [m̩bʷ]. While Ray (1926) and Clark (2009) propose [m̩bʷ] as a separate phoneme, Pearce (2011) makes no comment about the sound at all. Tryon (1976) only attests one instance of the complex segment in [nambʷax] ‘ankle’, for which Charpentier (1982) has [nambax]. Charpentier attests six words containing
this segment, all with a high, front vowel following. One of these words [nambwi] ‘song’ is attested in the current data set as [nambi]. There is one attestation in the current data set of [ⁿbw] before a front, high vowel, but this is an isolated case.

Table F: Complex segment

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>‘song’</td>
<td>nambwi</td>
<td>nambi</td>
<td>naⁿbi</td>
</tr>
<tr>
<td>(b)</td>
<td>‘ankle’</td>
<td>nambʷax</td>
<td>nambax</td>
<td>nambax</td>
</tr>
<tr>
<td>(c)</td>
<td>‘fire’</td>
<td>nimbiah</td>
<td>nimbuiaŋe</td>
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<td>nimBia</td>
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<td>‘ashes’</td>
<td>nimbwi nep</td>
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</table>

Overall, the phonology proposed in this analysis is smaller than all previously proposed phonologies, with sounds included previously as separate segments here being analysed allophonically. Further analysis will only be possible after review of the current proposed phonology by the Ninde-speaking community.

3.4 Outputs and Future Research

Through the analysis provided in this research, I have produced a proposed phonological inventory of the language along with a corresponding orthography. This phonology and orthography have been reviewed with comment and revisions from the speaker community. The feedback from this appraisal will be invaluable in future research, and will help to provide literacy materials that are relevant and useful back to the community. While the project is currently taking form in analysis of grammatical topics through a master’s research
project, the phonology amendments and revisions have been reviewed and further analysis will continue shortly. Once these revisions are finalised, the orthography will make it possible for the first time to provide teaching and literacy materials for the community that are salient to the speakers and able to be read. This will be helpful for a multitude of reasons: to create teaching materials for children to learn the language; to create documentation of traditional knowledge that elders fear is being lost; and to aid in the production of indigenous art and literature as well as the ability to daily communicate in modern life in their indigenous tongue (via text message, facebook, etc.). Ms. Isno has continued to be an instrumental participant in the research project, providing skills and insight that only an indigenous member of the community can contribute. The current research into the deeper morphological construction of nouns, noun phrases, verbs, and verb phrases will only further enrich the resources available to the community and the future literacy of speakers. With the finalisation of an orthography through the combined efforts of researcher and the community, more in-depth resources will be able to be generated for greater teaching, literacy and efficiency of the Ninde language by the community as well as the aforementioned outputs as well.
References


