Reconstruction of Nias, Devayan, and Sigulai Languages

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Abstract: Nias (also Batu) and Simeulue Islands which are included in the Barrier Islands have a very unique diversity of languages. The languages on these islands, namely Nias, Devayan, and Sigulai languages, still maintain the Paleo-Hesperonesian languages. This uniqueness is seen in the vocabulary that has similarities and differences between them. Although there are differences and similarities, the three languages are assumed to be related as a family of Austronesian languages. In this connection, this paper aims to find a system of the three languages as proof of their kinship. The theory used is Comparative Historical Linguistics with a bottom-up approach. This is consistent with the method used, namely the comparative method, which compares the changes and correspondence of sounds between cognate sets descriptively and diachronically, as well as tracking inheritance between periods, namely the Proto Austronesian inheritance documents in Nias, Devayan, and Sigulai languages. From the analysis it was concluded that Vocal and consonant features in NS, DV, and SG are arranged in a correspondence set and produce 6 Nias-Devayan-Sigulai proto vocal systems, namely * i, * u, * e, * ø, * o, and * a and 19 consonant systems proto Nias-Devayan-Sigulai, i.e. * b, * p, * m, * w, * f, * t, * d, * s, * z, * n, * l, * r, * ɲ, * y, * k, * g, * x, * ŋ, and * h. The PNDS vowels and consonants are inherited linearly and innovatively in several sound correspondence devices.

Keywords: reconstruction, phoneme, Nias-Devayan-Sigulai languages

Introduction

Nias Island (also Batu Islands) and Simeulue Island which are included in the Barrier Islands have a very unique diversity of languages. The languages on these islands, namely Nias (NS), Devayan (DV) and Sigulai (SG) languages, still maintain Paleo-Hesper Indonesian languages (Nothofer 1986 and Brown, 2001). This uniqueness is seen in the vocabulary that has similarities and differences between them. Although there are differences and similarities, the three languages are assumed to be related as a family of Austronesian languages. So far they have similar lexicon resemblance that is not yet clearly regulated. As explained by Brown (2001) Nias is classified by Ethnologue (1992) as the Sundic language from North Sumatra which is a subgroup of the Malay-Polynesian group. Sundic is just a neutral geographical grouping for languages whose linguistic affiliation is unknown (Tryon 1995: 21). For example, the meaning of the word 'ash' appears as the words [abu] (DV and SG) and [avu] (NS); the meaning of the word 'moon' appears as [bawa] in all three languages. However, for the meaning of the word 'water' to appear as [oek] (DV) and [idan] (SG and Nias), also the meaning of the word 'child' appears as [anak] (DV) and [nono] (SG), [ono] (NS). It seems that the Sigulai and Nias languages have something in common, but the meaning of the words 'burn' DV and SG both speak the words [manoto] and NS [tunu]. In other word meanings, such as 'dog' appears as [asu] (DV and NS) and [nahu] (SG). Also, the meaning of the word 'night' appears as [boja] (DV) and [boaj] (NS), but appears as [akhemi] (SG). That is, the lingual facts of shared innovation are found in the languages being compared (cf. Pagel M, Quentin D Atkinson, Andrew Meade, 2007). These changes and similarities occur because of the characteristics of universality, language contact, or inheritance from the parent language (Klamer, 2002; Campbell, Lyle, and Poser, William J. 2008) which later in the course of time these languages
split up so that there are some that survive and also experienced innovation (Bynon, 1979; Hock, 1988; Mbete, 2002; Widayati 2016; Matasovic, 2010).

Kahler (1955 and 1963 in Brown 2001) explained that the Sigulai language spoken to the north of Simeulue was related to Nias, but not to Simeulue (Devayan) on the same island. Concerning some of the temporary examples above, Kahler's explanation still needs to be proven again. Even Nothofer (1986) claims that the Mentawai language is closely related to the Nias language through a list of words. However, there is no systematic comparison of the two languages. Furthermore, it is also mentioned that the Nias language shows lexical, morphological, and syntactical similarities with the Toba Batak and Karo Batak languages, but further analysis is still needed to assess how closely these languages are related.

So, the clarity of the relations of languages in the Barrier Islands does indeed need to be proven, especially in terms of historical relations through the evidence of language. Bellwood assumed that any opinion about prehistoric regions of Indonesia, including Malaysia, must have taken the language evidence seriously since 5,000 years ago, especially if it relates to the discussion of human expansion during this period (2000: 142). That is, people cannot solely base it on archeological data.

The languages in the Barrier Islands as languages derived from Proto-Austronesian (PAN) inherit PAN's genetic characteristics, especially in the form of cognate sets. Even though Austronesian derived languages that inherit Austronesian genetic traits are accepted as related languages which are hypothetically derived from the same parent, but genetically historically those languages have not yet been thoroughly examined in their historical relations.

**Literature Review**

Following the problem of this paper, the study was conducted based on theory in Comparative Historical Linguistics. Theoretically, related languages have the same shape and meaning characteristics in the form of a cognate set. The word set of relatives was hypothesized to originate from the same prototype and as the forerunner of those languages. The similarity of form and meaning is not due to loans and neither are they due to chance, but because they carry on the same default attributes (protolanguage). Also, in the cognate sets, the relative's family kept regular sound matches in each position. That order is referred to Neogrammarians as the Law of Sound. The famous sound law is Grimm's law and Verner's law. Grimm's Law is the sound law of the Indo-European language sounds, while the Verner law is the sound law of the Indo-German language sounds (Bynon, 1979; Jeffers and Lehiste, 1979; Hock, 1988).

The famous Grimm's Law is the equivalent of *p, *t, *k in Indo-European languages which are preserved in Latin, Greek and even Sanskrit, but *p changes to /f/ in English. Verner's Law is a complement to Grimm's Law. The ProtoGerman *p, *t, and *k are maintained as /p/, /t/, /k/ in Low German (Plattdeutsch) in all positions and there are regular changes in High German (Hochdeutsch). In High Germany, there is a change in sound called the Second Consonant Shift. For Polynesian or Austronesian languages, Van der Tuuk (1876) and Otto Dempwolf (1934, 1928) found RGH and rdl Laws in the Polynesian or Austronesian Malay languages. Also, Dempwolf discovered the law of schwa, the middle vowel, which regularly turns into other vowels in Austronesian languages. Thus, the regular change of proto sounds in their derivative languages becomes the theoretical foundation and method in tracking the historical relations of Nias, Devayan, and Sigulai languages.

The relation of related languages in comparative studies, in principle, can be proven based on the inheritance element of the parent language or proto-language (cf. Berge, 2018). Proto
language is a theoretical idea that is redesigned (reconstructed) in a simple way to connect systems of related languages by utilizing some rules. The idea provides an understanding of the systematic relationship of languages that have historical significance (Bynon, 1979; Fernandez, 1996). It means that language is not a real form, but a form of the redesign, which is hypothesized to reduce the living language system at this level. Reconstruction is based on two hypotheses, namely genetic connectedness and regularity of correspondence between relatives' languages (Jeffers and Lehiste; 1979; Hock, 1988; Macmahon, 1997). The reconstruction shows the inheritance of proto (original) languages in their derivative languages which usually shows:

1) The similarity of the sound system (phonetic) and the arrangement of sound (phonemic).
2) Morphological similarity, namely similarity in the form of words and similarity in grammatical form, and
3) Syntactic similarity, namely the similarity of relations between words in a sentence (Kerf, 1996: 34).

The effort to discover the historical relations of Nias, Devayan, and Sigulai languages through reconstruction can also be done from the bottom up or top-down (cf. Blust, 1980; Crowley and Claire Bowery, 2010). Reconstruction from the bottom up relates to the compounding of the proto-language system of relatives' languages, while the top-down reconstruction utilizes the Austronesian proto-language system, both Dempwolf's findings and the findings of some other Austronesian experts. Also starting from the theoretical foundation and comparative methodology used by comparative historical linguists, the reconstruction of the languages of Nias, Devayan, and Sigulai were carried out.

Method

Data selection is performed using two groups of instruments, namely 200 Swadesh List Basic vocabularies and more than 1400 Hole List Words. Hole List in its implementation can be described as more flexible and creatively by the nature of the research environment to find crucial data in this study. The root word was chosen because the root word can describe the genetic relationship between related languages (Sagart, 2014). The selection of data was carried out in two different places namely Nias Island and Simeulue Island to capture data in Nias, Devayan, and Sigulai languages.

Data analysis was performed using the comparative historical method. This method is used to reconstruct the origin of kinship languages (Bloomfield, 1995: 318; Fernandez, 1996: 26; Hyman, Larry M and Florian Lionnet, 2012). With this method, the changes and correspondence of Nias, Devayan, and Sigulai languages are compared to descriptively and diachronically. Descriptive comparison is to find changes in the language of relatives that are still used today by the speakers (cf. Koch et.al, 2014). Diachronic comparison is to find traces of inheritance between periods, namely the Proto Austronesian inheritance files in Nias, Devayan, and Sigulai languages.

Reconstruction is done with the following steps: (1) The word set of relatives (cognate set) is compared by choosing the related form and ignoring the unrelated form, because the unrelated form, both the shape and meaning, is assumed to originate from different etymon. That is, glosses that are not taken into account are loan words, invented words (not basic words) (see also Mbete in Bawa & Wayan Pastika ed., 2002; Blust in Kaswanti Purwo & Collins ed. 1985; Nothofer (1975) in Effendi, 2013). (2) Form groups of adjustments that have
similarities in phonology. Sound adjustment devices are arranged in correspondence devices that have similarities in their phonology.

**Results and Discussion**

Every language will change. Some changes are regular and some are not. The languages of Nias, Devayan, and Sigulai are assumed to be derived from Proto Nias, Devayan, and Sigulai or abbreviated as PNDS before they finally parted. PNDS is a proto-language that derives the three languages is also assumed to be derived from Austronesian Proto (PAN). Languages data that can support the proof of kinship is much data that have sound correspondence devices. The proof will be done through sound reconstruction which will eventually identify proto lexicon. The following will explain the reconstruction of many vowels and consonants through a correspondence set.

**The Systems of Vocal and Diphthong Phonemes of Proto Nias, Devayan and Sigulai (PNDS)**

The systems of vocal and diphthong phoneme will be analyzed through a system of correspondence by comparing between related languages, as below:

**Sound Correspondence / i-, -i-, -i /**

The sound correspondence / i-, -i-, -i / appears regularly in the initial, medial and final positions as seen in the following lexicon.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | spittle | ilo | cilol | ilo |
| 2   | nose   | ixu | ihoŋ | ixu |
| 3   | five   | lima | limo | lima |
| 4   | wind   | naŋi | aŋin | naŋi |
| 5   | sing   | naŋi | naŋi | naŋi |
| 6   | rope   | tali | tali | dali |

Based on the above sound correspondence reconstructed that / i / appears regularly at all positions. From the device stated that PNDS / *i / lowered the correspondence device / i - i - i /.

**Sound Correspondence / u-, -u-, -u /**

Sound correspondence / u -, - u-, -u / appears regularly and repeats in the initial, medial and final positions. At the initial position / u / sound is found irregularly in related words. In SG, the lexicon indicating the vowel / u- / is sometimes distinguished by addition, such as /a/. This is seen in the lexicon /autu/ ‘louse’. But there are times when /u/ still appears as /u/ in the initial position, for example /uhaʔ/ ‘navel’.
Table 2. Sound Correspondence /u, -u, -u/

| No. | Gloss         | NS  | DV   | SG   |
|-----|---------------|-----|------|------|
| 1   | winnowing     | Niru| -    | nilu |
| 2   | new           | Baru| baro | baru |
| 3   | far           | Arǝu| aro  | adǝu |
| 4   | kill          | bunu| bunuh| bunu |
| 5   | leaf          | bulu| buluŋ| bulu |
| 6   | heavy         | abua| -    | abua |
| 7   | louse         | utu | utu  | autu |
| 8   | live          | auri| arep/urip| auli |
| 9   | navel         | fusa| uhaʔ | uhaʔ |

The extent of distribution of equipment /-u, -u/ becomes a conclusion that /* u/ is chosen in the device /-u, -u/ as PNDS. However, in the final position in DV, there is no vocal /-u/ as a correspondence device. So in the final position the correspondence device /-u, -o, -u/ is arranged. This is also derived from PNDS /* u/.

The rules that can be derived are:

PNDS *u

\[
\begin{align*}
& u- \sim V-u- \\
& -u- \\
& -u- \sim o 
\end{align*}
\]

Sound Correspondence /a, -a, -a/

Regularly /a-/ appears in initial, medial and final positions. Consider the following table:

Table 3. Sound Correspondence /a, -a, -a/

| No. | Gloss | NS  | DV   | SG   |
|-----|-------|-----|------|------|
| 1   | dog   | asu | asu  | asu/nahu |
| 2   | blunt | afuru | - | afulu |
| 3   | red   | -   | afala| afala |
| 4   | person| -   | ata/atta| nata |
| 5   | afraid| atat’u| ataot| ataot |
| 6   | hand  | daŋa| -    | daŋa  |
| 7   | land  | tanǝ| -    | tanǝ  |
| 8   | die   | mate| matay| mate  |
| 9   | swim  | laŋi| laŋoy| laŋi  |
| 10  | flower| buŋa| buŋo | buŋa  |

From the above correspondence, it appears that there is a comparable sound that appears regularly in the three languages being compared. The wide distribution of vowels /a/ at all positions in the three languages concludes that the sound correspondence /a - a - a/ is derived from PNDS * a. In the list of lexicon above it appears that PNDS /* a/ appears regularly in initial and medial positions on NS, DV, and SG. However, in the final position the correspondence /-a, -o, -a/ occurred. Sound /-o/ found on DV.

Sound Correspondence /e, -e, -e/
Sound correspondence / e\textendash\textendash e, e\textendash e / appears regularly in initial, medial and final positions. Consider the following table.

| No. | Gloss  | NS   | DV   | SG   |
|-----|--------|------|------|------|
| 1   | wide   | ebolo| -    | ebolo|
| 2   | rain   | deu  | -    | deu  |
| 3   | tongue | lela | -    | lela |
| 4   | foot   | ahe  | kae  | gae  |
| 5   | give   | (ma)me\textendash e | (maŋ)e\textendash ba | (ma)fe\textendash e |
| 6   | liver  | ate  | ate  | ede  |

Although in DV data showing regular correspondence / e, e, e / in the medial position is minimal found in the lexicon that is one etymon, the sound /e/ appears quite a lot in other data in the medial position, such as, / mareen / 'good', and / enen / 'cloth'. Likewise /e/ in the initial position can be found in other lexicons in DV that are not the same etymon, for example / enni / ‘dreams and / enek / ‘grandfather ‘. That is, from the sound correspondence /e, e, e / can be reconstructed that PNDS is */e*.

**Sound Correspondence / o\textendash o, - o, - o /**

The sound correspondence / o, o, o / for NS, DV, and SG is described as follows:

| No. | Gloss  | NS   | DV   | SG   |
|-----|--------|------|------|------|
| 1   | blood  | do   | dalah| do   |
| 2   | child  | ono  | anak | nono|
| 3   | saliva | ilo  | cilol| ilo  |
| 4   | wide   | ebolo| afǝlale| ebolo|
| 5   | smoke  | simbo| -    | imbo |
| 6   | I      | (ya)odo| deo  | oto  |
| 7   | afraid | ata\textendash u | ataot| ataot|
| 8   | husband | doŋa | -    | doŋan|
| 9   | egg    | adulo| -    | nadulo|

In the table above, it appears that the correspondence of / o\textendash o, - o\textendash / appears directly in the initial and medial positions, while in the initial position for the lexicon in the same etymon is not found. However, that does not mean that DV does not recognize the sound / o\textendash / in the initial position. The sound / o\textendash / in the initial position appears in other lexicons which are not asymmetrical as, / oyok / ‘ears’, / oden/ ‘white’, and / ofel / ‘some’. This data identifies that DV recognizes /o\textendash / in the initial position. Sound correspondence devices / o\textendash, - o, - o / can be concluded from PNDS /*o*/.

**Sound Correspondence / ə\textendash ə, - ə, - ə /**

The sound correspondence / ə, ə, - ə, - ə / appears regularly in the medial and final positions, but does not appear in the initial position in the etymon lexicon, especially in DV. The sound /ə/ on DV experiences innovation into /a/. However, DV still recognizes the sound /ə/ in the initial position; this is found in a different lexicon that is not related, that is /adəŋ/ ‘pig’.
Table 6. Sound Correspondence /ə-, -ə-, -ɔ/ 

| No. | Gloss | NS  | DV  | SG  |
|-----|-------|-----|-----|-----|
| 1   | four  | ǝfa | ampek | efa |
| 2   | three | tǝlu | ǝlufo | tǝlu |
| 3   | nice  | ǝxi | - | ǝxi |
| 4   | sleep | marə | - | ǝlu ak |
| 5   | wing  | gǝfi | - | gǝfi |
| 6   | land  | tanə | - | danə |
| 7   | wet   | abasǝ | afasə | abasə |
| 8   | tooth | nifə | nifə | - |

Thus it can be concluded that PNDS /*ə/ generate the variety of sound correspondence in the three derived languages, namely / ə - a-, -ə-, -ɔ/. The principle that can be derived is

PNDS * ə  

-ə  

-ɔ  

Diphthong Correspondence /-e, - ay, - e /, /-i, - oy, - i /, and /-o, -aw, -aw/

The sound correspondence /-e, - ay, - e/ is similar to the reconstructed sound correspondence /e-ay-e/ which has been reconstructed from PNDS /*e/. However, due to the appearance of this /e -ay-e / correspondence regularly, the sound /*e/ can no longer be used as a result of the reconstruction of the device. This is based on a reconstructive requirement that "if a sound has been selected as a result of the reconstruction of a sound device, the sound may no longer be selected as a result of the reconstruction of another sound device". Thus, the result of reconstruction /-e, - ay, - e/, is a PNDS diphthong /*ay/. Likewise, the voice correspondence devices /-i, - oy, - i /, and /-o, -aw, -aw / are also reconstructed from PNDS /*oy/ and /*aw/.

Consider the following table:

Table 7. Diphthong Correspondence /-e, - ay, - e /, /-i, - oy, - i /, and /-o, -aw, -aw/

| No. | Gloss | NS  | DV  | SG  |
|-----|-------|-----|-----|-----|
| 1   | die   | mate | matay | mate |
| 2   | swim  | laji | lajɔy | laji |
| 3   | tiger | harimo | harimaw | harimaw |

The rules that can be derived are:

- PNDS * ay > - e ~ ay
- PNDS * aw > - o ~ aw
- PNDS * oy > - i ~ oy

Based on the above reconstruction, PNDS vocal and diphthong reconstruction patterns can be formulated in the following table:
The system of Vocal and Diphthong of PNDS are

![Diagram of Vocal and Diphthong of PNDS](image)

**Figure 1.** The system of Vocal and Diphthong of PNDS

### The PNDS Consonant System

The PNDS consonant system is explained as follows:

**PNDS Bilabial Consonant System: Sound Correspondence /f-, p-, b-/, /-f-, -p-, -p/, /-Ø, -p, -p/**

This bilabial sound correspondence device is a linear and innovative correspondence. The /p/ sound only appears regularly in SG and DV but corresponds to /f/ in NS. Note the following lexicon.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | turn  | futa | putar | butan |
| 2   | some  | maefu | satape | atape |
| 3   | blow  | motiu | man(iop) | man(ipu) |

From the list of lexicon, it appears that there are correspondences /f-, p-, b- / at the initial position in NS, DV, and SG. In the medial position there is the correspondence /-f-, -p-, -p- / and the final position is the correspondence of / -Ø, -p, -p /. In SG there is a metathesis process in the lexicon / iup → / ipu /. The varied correspondence was reconstructed with /*p/ as a PNDS phoneme. The rules are as follows.
PNDS Bilabial Consonant System: Sound Correspondence / b-, - b - /

This / b-, - b - / sound correspondence device only appears in the initial and medial positions. In the final position does not appear. The absence of the sound / b / in this final position is common because usually, the sound of consonants with an open character does not appear and often fades in the final position of the Austronesian language. The sound device / b-, - b - / is reconstructed from PNDS * b. Observe the following table:

| No. | Gloss   | NS  | DV  | SG   |
|-----|---------|-----|-----|------|
| 1   | wet     | abasǝ| afasǝ| abǝa |
| 2   | swollen | abao | afalǝ| abao |
| 3   | rotten  | obou | afuruk| obou |
| 4   | two     | dombua/dua | dufo | domba |
| 5   | bad     | -    | buruk| buruk |
| 6   | moon    | bawa | bawa | bawa |
| 7   | flower  | buŋa/buno | buŋo | buŋa |
| 8   | new     | baru | baro | baru |

From the above table it can be explained that there are two different sound correspondence, especially the sound device at the medial position, namely the sound device / b-, b-, b- / and / - b-, -f-, -b-/. The rules that can be derived are:

PNDS * b → b-, b-, b-
-b-, -f-, -b-

PNDS Bilabial Consonant System: Sound Correspondence / m-, -m-, -m /

This / m-, -m-, -m / consonant sound device appears regularly in all positions, initial, medial and final. This order makes it easy to reconstruct that sound correspondence / m-, -m-, -m / reconstructed through PNDS * m.

Consider the following table:

| No. | Gloss   | NS         | DV         | SG         |
|-----|---------|------------|------------|------------|
| 1   | bird    | manu       | manok-manok| manu-manu  |
| 2   | eat     | mana/mana  | maŋan      | maŋa       |
| 3   | eye     | mata       | mata       | mata       |
| 4   | two     | dombua     | -          | domba      |
| 5   | stand   | -          | umidǝk     | umindo     |
| 6   | black   | aifǝ, aitǝ | matǝm      | aife       |
| 7   | right   | kambǝla/ gambǝla/ | sabela | gambǝlo |
|     |         | gabǝlo     |            |            |
| 8   | drink   | inu        | inom       | inu        |
| 9   | one     | ambua      | -          | ambǝ       |
| 10  | narrow  | -          | sampek     | sampek     |
PNDS Bilabial Consonant System: Sound Correspondence / w-, -w-, -w /

This set of correspondence regularly appears in the initial and medial positions. The final position tends to be a diphthong / -aw / sound. From the regularity of this sound reconstructed PNDS sound is */w/.

Consider the lexicon list in the following table.

| No. | Gloss | NS        | DV      | SG      |
|-----|-------|-----------|---------|---------|
| 1   | moon  | bawa/bulan| bawa    | bawa    |
| 2   | snake | sawa      | sawa    | awa     |
| 3   | eight | walu      | -       | walu    |
| 4   | so    | -         | wede    | -       |

Although the sound / w-/ in the initial position is not found in the lexicon that is one etymon with DV, the consonant /w/ remains in DV. This is evidenced by the presence of other lexicons, although not one etymon, are found in DV. Thus the rules that can be derived are.

PNDS * w

PNDS Labiodental Consonant System: Sound Correspondence / f-, -f- /

The Sound correspondence / f-, -f- / appears regularly in initial and medial positions in NS and SG but does not appear in DV.

| No. | Gloss | NS        | DV      | SG      |
|-----|-------|-----------|---------|---------|
| 1   | bite  | fæxi      | -       | faŋok   |
| 2   | navel | fusa      | -       | -       |
| 3   | wing  | gəfi      | -       | gefi    |
| 4   | tooth | iʃa/nifə | -       | nifə/nifo |
| 5   | four  | əfa       | ampek   | əfa     |
| 6   | sew   | afu       | -       | afa     |
| 7   | white | afusi     | -       | afui    |

It seems that DV does not use an etymon lexicon as NS and SG. DV uses another etymon in his speech.

PNDS Alveolar Consonant System: Sound Correspondence / t-, -t-, -t /

The correspondence of / t-, -t- / in the initial and medial positions appears regularly while in the final position only appears in DV and SG. Here it appears that NS still retains its open syllable characteristics. From the list of lexicons shown below, it is concluded that the
correspondence set reconstructed that the PNDS consonant was /*t/ with variations that emerged.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | burn  | tunu | tutuŋ | atutuŋ |
| 2   | not   | teŋa | teen | teŋa |
| 3   | from  | tanǝ | tenek, tek | - |
| 4   | stone | gara/batu | batu | batu |
| 5   | person | niha | ata | nata |
| 6   | turn  | futa | putar | butan |
| 7   | afraid | ata’u | atao | atao |
| 8   | vomit | muta | umuttah | umuta |
| 9   | near  | ahǝtǝ | - | atǝ |
| 10  | sharp | atarǝ | - | atalǝ |

The rules can be derived as follows.

PNDS * t

PNDS Alveolar Consonant System: Sound Correspondence / -d/-

The sound correspondence /-d/- only exists in initial and medial positions. In general, the final position does not exist in the languages on the small islands. If there is, it is because of the influence of other languages that have formed a new system for that language. This change was seen especially in Devayan and some Sigulai languages. However, it is very rarely found in the Nias language. Generally, the Nias language survives with its open syllable system. Consider the lexicon in the table below.

| No. | Gloss  | NS    | DV     | SG    |
|-----|--------|-------|--------|-------|
| 1   | blood  | do    | dalah  | do    |
| 2   | two    | dombua/dua | dufo | domba |
| 3   | wife   | dona/dɔŋa | lafe | dɔŋa |
| 4   | rain   | deu,teu,moteu | olol | deu   |
| 5   | stand  | mozizio/masindo/adǝlo | umidǝk | umindo |
| 6   | heart  | dǝdo  | - | ǝ d ǝ |
| 7   | far    | arǝu  | arao | adau/adeu |
| 8   | egg    | adulo | - | nadulo |

From the above table, it can be concluded that the initial position appears regularly in the three languages compared. However, in the final position there are variations, namely the correspondence / -d/-, -r/-, -d/-/. However, due to sporadic emergence, it can be concluded that PNDS that can be reconstructed is * d. The principle that can be derived is
Typically the languages on the small island, the absence of consonants in the final position are common, both voiced and voiceless consonants. This is also found on the sound correspondence device / - Ø, -n, -n /. This means that in NS there is no consonant / -n / in the final position. Observe the lexicon list in the following table.

Table 15. Sound Correspondence / n-, -n, -n /

| No. | Gloss | NS   | DV   | SG  |
|-----|-------|------|------|-----|
| 1   | wind  | naŋi | anjın | naŋi |
| 2   | nose  | nixu | -    | nixu |
| 3   | child | ono  | anak  | nono |
| 4   | bird  | manu | manok-manok | manu-manu |
| 5   | mother | ina   | -    | -   |
| 6   | animal | -    | binataŋ | binataŋ |
| 7   | turn  | futa | putar | butan |
| 8   | play  | famai | (be)maen | (be)maen |

There are three sets of sound correspondence that can be identified from the results of the reconstruction of PNDS /*n/ namely /n-, n-, -n/, /-n, -n-, -n/, and /- Ø, -n, -n/. The rules that can be derived are:

PNDS * n

PNDS Alveolar Consonant System: Sound Correspondence / s-, -s-, -s/ 

The Sigulai language almost does not indicate the correspondence of /-s/ in the initial and medial positions. In SG /s-, -s/ always appears as /Ø-, - Ø-/ . Only in the lexicon of loans from the Malay language is the presence of /-s/ in the medial position, namely /isok/ 'suction'. Consider the following lexicon list:

Table 16. Sound Correspondence / s-, -s-, s-/ 

| No. | Gloss | NS   | DV   | SG  |
|-----|-------|------|------|-----|
| 1   | one   | sara | sao  | amba |
| 2   | smoke | sibo | -    | imbo |
| 3   | wet   | abasə | afasə | abasə |
| 4   | dog   | asu  | asu  | nahu |
| 5   | salt  | asio | asila | naiyo/naiya |
| 6   | delete | osi|laosi | sapu | hapus |
| 7   | suck  | sis’ə | isok | isok |
| 8   | shoulder | alisi | alifalaŋ | galifi |

From the above explanation can be arranged correspondence devices as follows, namely /s-, s-, -Ø/, /-s-, -s-, -Ø-/ , and /-Ø-, -Ø-, -s/. The sound correspondence device was reconstructed as PNDS /*s/ and the rules are:
PNDS *s

PNDS Alveolar Consonant System: Sound Correspondence /l-, -l-, -l/

The sound /-l/ in the final position is only found in DV. /-l/ in this position corresponds to /-Ø/. Observe the following table:

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | rope  | tali | tali | dali |
| 2   | big   | ebua | alǝfo | eba |
| 3   | five  | lima | limo | lima |
| 4   | leaf  | bulu | buluŋ | bulu |
| 5   | swim  | lanji | lanjoy | lanji |
| 6   | salt  | asio | asila | naiyo/naiya |
| 7   | spittle | ilo | cilol | ilo |

Correspondence devices that can be formed from the variations above are /l-, l-, l-/ and /-Ø, -l, -Ø/. The rule can be derived as:

PNDS * l

PNDS Alveolar Consonant System: Sound Correspondence /r-, -r-, -r/

Sound correspondence /r-, -r-, -r/ appears sporadically in all positions. This is evident from the following data.

| No. | Gloss       | NS  | DV  | SG        |
|-----|-------------|-----|-----|-----------|
| 1   | new         | baru| baro| baru      |
| 2   | big         | roŋo| logo| -         |
| 3   | winnowing   | niri| nilu| -         |
| 4   | root        | -   | ollor| -        |
| 5   | live        | auri| arep/urip| auli    |

In NS /r/ it still exists both initial and medial position, but not final position. In DV /r/ in NS it corresponds to /l/ especially in the initial position. The correspondence that can be concluded is /r-, l-, Ø-/ and /-l-/-r-, -l-/-l-, /-Ø, -r, -Ø/. The rule is:

PNDS * r
PNDS Palatal Consonant System: Sound Correspondence /c-, -c-/ 

Sound correspondence /c-, -c-/ only appears at initial and medial positions in DV and SG but does not appear in NS. Consider the following table.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | story | -  | curito | cerito |
| 2   | jealous | - | cemburu | cemburu |
| 3   | branch | - | sabaŋ | cabaŋ |
| 4   | smallpox | - | cacar | cacar |

It seems that all the lexicons that are distributed in the initials and medial positions in DV and SG are loan words from the Malay language which is an Austronesian language family. Therefore, the PNDS for the above correspondence must borrow the original language proto phoneme, which is *c.

PNDS Palatal Consonant System Sound Correspondence /-Ø-, -j-, -j-/ 

This sound correspondence is unique because it can hardly be found the cognate data that corresponds. Generally, it is from the loanword. In its rules, the loanword must be ruled out in the analysis of correspondence devices. Consider the following list.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | window | zandela | jandela | jendela |
| 2   | amulet | hazima | ajimat | jimat |
| 3   | kidney | bua | ginjal | ginjal |
| 4   | green | owuge’e | ijo | hijau |

Only in the medial position /-j-/ can be observed in the Austronesian language and that is in the Devayan and Sigulai languages in the form of the lexicon /ijo and hijau/. This means that the device that can be arranged is /-Ø-, -j-, -j-/ This correspondence was reconstructed with /* j/ which is a loan proto phoneme.

PNDS Palatal Consonant System /z/ 

The phonemes /z/ only appears in NS and has no correspondence with DV and SG, for example,

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | worm | gelewazi | lahalan/galun | laxalun |
| 2   | stand | mozzio/masindo/adolo | umidok | umindo |
| 3   | rope | boba/zinali/tali | tali | dali |
| 4   | stick | si’o/zi’o | tunjek/tunjek? | duŋkek/darŋkok |

The *z phoneme is one of the problematic PAN phonemes, which must still be reconstructed, even though it produces an unequal phonological system (Adelaar, 1995).
**PNDS Palatal Consonant System: Sound Correspondence /y, -y/**

The /y, -y/ sound correspondence regularly appears in initial and medial positions in NS and SG, but sporadically appears in DV. The final position is /-y/ closer if it is explained in the diphthong correspondence. Consider the following table:

| No. | Gloss | NS       | DV      | SG    |
|-----|-------|----------|---------|-------|
| 1   | many  | ogoya/oya| afəl    | ogoya |
| 2   | you   | ya’ugɔ   | ede ‘o  | yegɔ  |
| 3   | eagle | moyo     | mayaŋ   | moyo  |

Correspondence devices that can be arranged are /y, -y/ and /-y, -y, -y/. They inherited from */y/*.

**PNDS Palatal Consonant System: Sound Correspondence /ɲ, -ɲ/**

Sound correspondence /ɲ, -ɲ/ only appears in one related data and is available in all positions in the three languages being compared. It concludes that they inherited from *ɲ*

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | sing  | ɲaɲi | ɲaɲi | ɲaɲi |

**PNDS Velar Consonant System: Sound Correspondence /k, -k, -k/**

Sound correspondence /k, -k, -k/ appears sporadically in all positions. This is evident from the following data.

| No. | Gloss | NS | DV | SG |
|-----|-------|----|----|----|
| 1   | rich  | kayo | kayo | kayo |
| 2   | piss  | kìɔ | kìɔ | mexie |
| 3   | because | - | karano | karano |
| 4   | dirty | - | kotor | kotor |
| 5   | puzzle | - | takok-takok | betao-tao |
| 6   | rub   | laduku | gosok | gosok |
| 7   | frog  | - | balak | belak |
| 8   | sister-in-law | - | kakak | kakak |

In NS, /k/ only appears in the initial position in the word one etymon. Even so /k/ remains found in the medial position in the different lexicons. In DV and SG the sound k/ is found in the initial, medial, and final positions. In NS there is no sound /k/ in the final position. This is a syllable system in NS that they have not closed syllable. The correspondence that can be derived is /k, -k, -k/, /-Ø, -k, -k/, and /-Ø, -k, -k/. The rule is
PNDS Velar Consonant System: Sound Correspondence /g-, -g-/ 

Sound correspondence /g-, -g-/ appears sporadically in initial and medial positions, especially in NS and SG. In DV /g/ it appears as /k/ in the initial position and is not found in the medial position for the same etymology. This is evident from the following data.

Table 25. Sound Correspondence /g-, -g-/ 

| No. | Gloss  | NS   | DV  | SG   |
|-----|--------|------|-----|------|
| 1   | shoulder | galisi | -  | galifi |
| 2   | fire    | galitə | -  | -    |
| 3   | buffalo | gǝrǝbao | kebau | gebao |
| 4   | urine   | gıo  | kiə | gie  |
| 5   | many    | ogoya | -  | ogoya |

The correspondence that can be concluded is /g-, k-, g-/; /-g-, -Ø-, -g-/.

PNDS *g

PNDS Velar Consonant System: Sound Correspondence /x-, Ø -, x-/ 

Sound correspondences /x-, Ø -, x-/ appear sporadically in the initial position on NS, DV, and SG. In the medial position there is the correspondence /-x-, -h-, -x/. This is evident from the following data.

Table 26. Sound Correspondence /x-, Ø -, x-/ 

| No. | Gloss  | NS   | DV  | SG   |
|-----|--------|------|-----|------|
| 1   | at     | xə   | di  | xa   |
| 2   | in     | baxa | ebahak | abaxa |
| 3   | nose   | ixu/nixu | ihoŋ | nixu |
| 4   | dig    | ma(xao) | (ma)haok | (ma)ŋoo |
| 5   | live   | auri | arep/urip | auli |

Reconstruction that can be identified is PNDS *x. This is under the criteria for breadth /x/ distribution. The rule is 

PNDS *x

PNDS Velar Consonant System: Sound Correspondence /-ŋ-, -ŋ/ 

Sound correspondence /-ŋ-, -ŋ/ appears regularly in the medial and final positions on DV and SG, but in NS only appears in the medial position. Observe the following lexicon list.

Table 27. Sound Correspondence /-ŋ-, -ŋ/ 

| No. | Gloss  | NS  | DV  | SG |
|-----|--------|-----|-----|----|
| 1   | flower | buŋa/buno | buŋo | buŋa |
| 2   | big    | roŋo | łoŋo | -  |
| 3   | eat    | mana/mança | manjan | manja |
| 4   | count  | erai | etoŋ | etoŋ |
The correspondence that can be concluded is /-ŋ -ŋ -ŋ, /-Ø, -ŋ, -ŋ/. The rule is
PNDS * ŋ
Ø, -ŋ, -ŋ/

PNDS Glottal Consonant System: Sound Correspondence /h-, -h-, -h/

Sound correspondence /h-, -h-, -h/ appears sporadically in all positions. This is evident from the following data.

| No. | Gloss | NS  | DV   | SG  |
|-----|-------|-----|------|-----|
| 1   | day   | hari| balal| hari |
| 2   | kill  | bunu| bunuh|(fa)bunu |
| 3   | ten   | fulu| puluh| pulu |
| 4   | blood | do  | dalah| do  |
| 5   | pestle| halu| alau | alau |
| 6   | price | harago| harago| harago |
| 7   | tiger | harimo| harimau| harimau |
| 8   | foot  | gahe| kae  | gae |

From the list above it appears that /h/ only appears at initial and medial positions in NS. However, in DV /h/ only appears in the initial and final positions but in SG only appears in the initial position. The variations of this correspondence are /h-, h-, h/-, /-h-, -Ø-, -Ø/-, and /-Ø, -h, -Ø/. Based on these variations it is concluded that PNDS */h/ is reconstructed from linear and non-linear correspondence. The rules are formed as follows:

PNDS * h
/h-, h-, h-/  
/-h-, -Ø-, -Ø-/  
/-Ø, -h, -Ø/.

Based on the above reconstruction the PNDS consonant reconstruction pattern can be formulated in the following table:

| No. | PNDS | Initial Position | Medial Position | Final Position |
|-----|------|------------------|----------------|---------------|
| 1   | *p  | p-               | -p-            | -p-           |
| 2   | *b  | b-               | -b- ~ f        | -             |
| 3   | *m  | m-               | -m-            | -             |
| 4   | *w  | w-               | -w- ~ -v-      | -             |
| 5   | *t  | t-               | -t-            | -t            |
| 6   | *d  | d-               | -d-            | -             |
| 7   | *n  | n-               | -n-            | -n            |
| 8   | *s  | s-               | -s-            | -s            |
| 9   | *z  | z-               | -             | -             |
| 10  | *l  | l-               | -l-            | -l            |
| 11  | *r  | r- ~ l           | -r-            | -r            |
| 12  | *p  | - p-             | - p-           | -             |
| 13  | *y  | y-               | -y-            | -y            |
Consonants that appear in the final position are generally found in DV and some SG. This is because DV and SG are spoken on the same island and the people always interact. The influence between languages is very likely to occur to form a sound system that is different from the others.

Consonants that can be arranged are:

**Table 30. Consonant System of Proto NDS**

| Place of Articulation | Manner of Artication | Bilabial | Labial dental | Alveolar | Palatal | Velar | Glottal |
|-----------------------|----------------------|----------|--------------|----------|--------|-------|--------|
| Stop Explosive         | *p                    | *t        | *k           |          |        |       |        |
|                        | *b                    | *d        | *g           |          |        |       |        |
| Fricative              |                      | *f        | *s           | *h       |        |       |        |
|                        |                      |           |              |          |        |       |        |
| Nasal                  | *m                    | *n        | *ɲ           | *ŋ       |        |       |        |
| Lateral                |                      | *l        | *r           |          |        |       |        |
| Trill                  |                      | *w        | *y           |          |        |       |        |

**Conclusion**

From the results of an analysis, it is concluded that the vowel sound and PAN consonants reduce various forms and different ways in their derivative languages, namely Nias, Sigulai, and Devayan. Although, Nias and Sigulai languages are spoken on two different islands, both of them still show a relatively close kinship than the Devayan language. That is, the consonant and vowel features of Austronesian can be proven in Nias and Sigulai languages. Vocal and consonant features in NS, DV, and SG are arranged in a correspondence set and produce 6 Nias-Devayan-Sigulai proto vocal systems, which are *i, *u, *e, *ɔ, *o, and *a and 19 consonant systems proto Nias-Devayan-Sigulai, i.e. *b, *p, *m, *w, *f, *t, *d, *s, *z, *n, *l, *r, *ɲ, *y, *k, *g, *x, *ŋ, and *h. The PNDS vowels and consonants are inherited linearly and innovatively in many sound correspondence devices.

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