

## Derivatives of “right side” in Atayalic languages\*

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**Abstract:** Forms for “right side” in Atayalic languages have not been recognized as reflexes of a Proto-Austronesian form, apart from one of the Atayal forms in Ogawa and Asai (1935). However, this paper proposes that one Seediq form and two Atayalic forms for “right side” reflect the Proto-Austronesian form albeit attached with fossilized affixes. This paper first introduces the Proto-Austronesian forms for “right side,” which are \*wanaN/\*waNan, and its reflexes in languages other than Atayalic. Then, Proto-Seediq form for “right side” is reconstructed as \*na<ra>d, and this form is discussed in terms of insertion with a fossilized back infix \*<ra> to a supposed root \*wanad, which is a reflex of Proto-Austronesian \*wanaN. For Atayal forms for “right side,” twenty-three dialectal terms taken from various Atayalic villages (Sayama 1918, 1920) are presented and classified into four types: (i) *ənalıq*, (ii) *əlalaw*, (iii) *anan*, and (iv) *əgilax* types. It is proposed that the first two types (*ənalıq* and *əlalaw*) are derived from a possible Proto-Atayal root \*anal as the reflexes of the Proto-Austronesian \*wanaN, and each form is attached with a fossilized suffix, *-ıq* and *-aw*, respectively. The *anan* type is also a reflex of the Proto-Austronesian \*wanaN; however, this type is a borrowing from the neighboring language, Pazih. The *əgilax* type is likely derived from the Proto-Atayalic \*iRil, a word for “left,” by attaching a fossilized suffix *-ax*. This paper concludes that Proto-Seediq \*na<ra>d and two Proto-Atayal forms \*ənal-ıq and \*əlal-aw reflect the Proto-Austronesian \*wanaN.

**Keywords:** Atayal, Seediq, right side, left side, fossilized affix

### 1. Introduction

The Atayalic subgroup belongs to the Austronesian language family. This subgroup consists of two languages, Atayal and Seediq, which are among the many Austronesian languages spoken by indigenous people on mainland Taiwan, that are collectively called Formosan languages. Atayal has two dialects, Squliq dialect and C’uli’ dialect. Seediq also has two dialects, the Paran dialect and Truku dialect.<sup>1</sup>

According to Blust (1999), the first-order subgroups of Proto-Austronesian are densely distributed across mainland Taiwan. There are ten first-order subgroups, with the following nine subgroups found on mainland Taiwan: 1. Atayalic (Atayal and Seediq), 2. East Formosan (Amis, Kavalan, Siraya, Basai), 3. Puyuma, 4. Paiwan, 5. Rukai, 6. Tsouic (Tsou,

Kanakanabu, Saaroa), 7. Bunun, 8. Western Plains (Papora, Hoanya, Thao, Babuza, Taokas), and 9. Northwest Formosan (Saisiyat and Pazih).<sup>2</sup> The other first-order subgroup is Malayo-Polynesian that includes all Austronesian languages in and around the Indian Ocean and Pacific Ocean outside mainland Taiwan. This subgrouping pattern shows the importance of data obtained from Formosan languages when reconstructing Proto-Austronesian forms.

The Atayalic subgroup has a special position within the Austronesian language family. Li (1985) argues that Atayalic languages are aberrant as an Austronesian language subgroup as their basic vocabularies share low cognancy with other Austronesian languages. However, he also states that cognancy among Atayalic languages and other Austronesian languages is blurred by a peculiar affixation (infixation and suffixation) process in Atayalic languages. Identification of this affixation process is expected to reveal the Austronesian origins of the Atayalic vocabularies. For example, the cognancy of the Atayalic basic vocabularies such as “atayal,” “elder sibling,” “person,” “say,” “sugarcane,” and “uphill/downhill” with Proto-Austronesian or other Austronesian languages is evidenced in previous studies through the decoding of fossilized affixes (Ochiai 2019, 2020a, 2022a, 2022b, 2022c, 2023a).

According to Ochiai (2022d), fossilized affixes in Atayalic languages consists of two types: infixes and suffixes. Fossilized infixes are further classified into three types depending on the place of insertion: front infixes are inserted after a word initial consonant, middle infixes are inserted before a vowel in a final syllable, and back infixes are inserted before a word final consonant. The forms for fossilized suffixes in Atayal seen in Ogawa and Asai (1935: 25–26) and Li (1985: 259) can be categorized into the following eight types: 1. *-ax*, 2. *-(C)iq* (e.g., *-riq* and *-tiq*), 3. *-(C)iq* (e.g., *-iq*, *-liq*, *-niq*), 4. *-(C)al* (e.g., *-al*, *-gal*, *-yal*), 5. *-huy* (< Proto-Atayalic \*hur), 6. *-li?* (< Proto-Atayalic \*-lid), 7. *-qig*, and 8. *-(C)ux* (e.g., *-ux*, *-nux*, *-tux*). They share a *-(C)VC* syllable structure.

The forms for the fossilized infix are limited, having only three or four variants. According to Ochiai (2022d), the forms for fossilized front infixes in Proto-Atayalic are \*<əl>, \*<ən>, \*<ər>, and \*<əR>. The form for fossilized back infix in Proto-Atayalic is \*<ra> for the fossilized back infix. Fossilized middle infixes are seen in Atayal but not in Seediq. These forms reported in Atayal in Li (1985: 258) and Li and Tsuchida (2009: 355) are <*i*>, <*il*> and <*in*>. The forms for “right side” in Atayal are associated with fossilized suffixes, *-iq*, *-aw*, and *-ax*, and those of Seediq are related to the fossilized back infix <*ra*>.

Forms for “right side” in Atayalic languages have not been recognized as reflexes of a Proto-Austronesian form, apart from one of the Atayal forms in Ogawa and Asai (1935). However, this paper proposes that one Seediq form and two Atayalic forms for “right side” reflect the Proto-Austronesian form albeit attached with fossilized affixes. Section 2

introduces the Proto-Austronesian forms for “right side,” which are \*wanaN/\*waNan, and their reflexes in languages other than Atayalic. Section 3 reconstructs the Proto-Seediq form for “right side” as \*na<ra>d, and discusses how this form shows the insertion of a fossilized back infix <ra> to a supposed root \*wanad, which is a reflex of Proto-Austronesian \*wanaN. Section 4 presents twenty-three dialectal forms taken from various Atayalic villages (Sayama 1918, 1920) and classifies them into four types, *analiq* type, *alalaw* type, *anan* type, and *agilax* type. It is proposed that the first two types, *analiq* and *alalaw*, are derived from possible roots \*anal and \*alal (the consonant \*n underwent assimilation to \*l in the latter form) respectively, which are the reflexes of the Proto-Austronesian \*wanaN, and each form is attached with fossilized suffixes, *-iq* and *-aw*. The *anan* type is also a reflex of the Proto-Austronesian \*wanaN; however, this type is a borrowing from the neighboring language, Pazih. The *agilax* type is likely derived from the Proto-Atayalic \*iRil, a word for “left,” by attaching a fossilized suffix *-ax*. Section 5 concludes that Proto-Seediq \*na<ra>d reflects the Proto-Austronesian \*wanaN. Atayal forms, *analiq* and *alalaw* also reflect the Proto-Austronesian \*wanaN.

Phonemic inventories and accent in Atayalic languages need to be introduced before the following discussion. The phoneme inventories for the Atayal and Seediq dialects are as follows. Based on my field notes, Squiliq Atayal has the following phonemes: the vowels /a e i o u ə/, and the consonants /p β t k γ q ʔ s x h z r l m n ŋ y w/. The consonants /β/ and /γ/ are written orthographically as *b* and *g*. Among these vowels, *e* and *o* are observed to date back to the diphthongs *ay* [aj] and *aw*. According to Huang (1995:16–17), C’uli’ Atayal has the same phoneme inventories, except that it adds /ts/ (written as *c* in this paper) and lacks the /ə/. As for Seediq, Paran Seediq has five vowels /a e i u o/, 18 consonants /p b t d ts k g q s x h m n ŋ l r w j/, and the diphthong /uj/ (Ochiai 2016: 19). Truku Seediq has the four vowels /a i u ə/ and three diphthongs /aw/ /aj/ /uj/ (Tsukida 2009: 56–62). The consonants are the same as those in Paran Seediq, except for /ts/, which becomes /s/ in Truku Seediq. Throughout this paper, /t/, /j/, and /ts/ are transcribed as *r*, *y* and *c*, respectively. According to Tsukida (2009), *l* is [ɭ] and *g* is [ɣ] in Truku Seediq.

The stress falls on the penultimate syllable in Seediq, and based on the description in Ogawa and Asai (1935: 22), the stress can also be considered to fall on the penultimate syllable in Atayal.<sup>3</sup> Thereafter, the stress has been shifting from the penultimate to the final syllable, with Li (1981: 239) stating that the stress either falls on the penultimate or ultimate syllable.

Li (1981: 239) points out the weakening of the prestress vowels in Atayalic languages. The vowels in syllables before the stressed syllable, which is usually the penultimate syllable, are considered weak and found to undergo a reduction in vowel quality to schwa.<sup>4</sup>

## 2. Proto-Austronesian

The partial data for the reconstruction of Proto-Austronesian \*wanaN/\*waNan and Proto-Malayo-Polynesian \*wanan cited from Blust and Trussel (2010) are shown Table 1.

For the words representing “right side” in Atayalic languages, no cognancy with Proto-Austronesian has been recognized in the data used for reconstructing the Proto-Austronesian form for “right side” by Blust and Trussel (2010), which is either \*wanaN or its doublet \*waNan. The medial and final consonants are either \*n or \*N in the doublet pair. Attested forms in Rukai (Tanan) and Paiwan support \*wanaN, the Proto-Austronesian form with the final \*N. On the other hand, those in the Tsouic subgroup (Tsou, Kanakanabu, and Saaroa) and Puyuma (Tamalakaw) support \*waNan, with the medial \*N.<sup>5</sup> The data supporting \*wanaN/\*waNan were obtained from Formosan languages only, without Malayo-Polynesian forms. On the other hand, Blust and Trussel (2010) reconstructed the Proto-Malayo-Polynesian form as \*wanan based on attested forms in Malayo-Polynesian languages. This form \*wanan suggests that the consonant \*N underwent assimilation to \*n regardless of whether it reflects the Proto-Austronesian form \*wanaN or \*wanaN. The former Proto-Austronesian form assumes progressive assimilation, and the latter form assumes regressive assimilation of \*N to \*n in the Proto-Malayo-Polynesian form.

**Table 1 Data for reconstructing \*wanaN/\*waNan “right (side, hand, direction)” in Proto-Austronesian based on Blust and Trussel (2010)**

Proto-Austronesian	*wanaN	
Rukai (Tanan)	<i>vanalə</i>	right (side)
Paiwan <sup>6</sup>	<i>-naval<sup>b</sup></i>	right (-hand), on the right
Proto-Austronesian	*waNan	
Tsou	<i>vhona</i>	right (not left)
Kanakanabu	<i>anánə</i>	right (not left)
Saaroa	<i>alhanə</i>	right (not left)
Puyuma (Tamalakaw)	<i>taRa-walan</i>	right (side)
Proto-Malayo-Polynesian	*wanan	
Itbayaten	<i>wanan</i>	right (side)
Kadazan Dusun	<i>wanan</i>	right hand

The next section introduces the forms for “right side” in Seediq dialects, followed by reconstruction of the Proto-Seediq and a discussion of its relation to Proto-Austronesian.

### 3. Seediq

Paran Seediq has *narac* as a form for “right side,” and its cognate in Truku Seediq is *narac* or *narat*.<sup>7</sup> From these forms, it can be inferred that the word-final consonant is either *c* or *t*. The word-final *c* in modern Paran Seediq was recorded as *t* in the 1920s (Ochiai 2020b: 60–61). Therefore, it is likely that the word-final *t* is the earlier segment. The earlier form (a form about a century ago) could be *narat*.

This form is assumed to be related to the Proto-Austronesian *\*wanaN*. If this form is reflected in Proto-Atayalic, it would be *\*wanal*. This paper, however, proposes the Proto-Atayalic form to be *\*anal* without the word-initial *\*w*, based on the analogy of the forms for “left side” in Proto-Atayalic and Proto-Austronesian: Proto-Atayalic form for “left side” is reconstructed as *\*iRil* and Proto-Austronesian reconstructed in Blust and Trussel (2010) is *\*wiRi*.<sup>8</sup> The Proto-Atayal has no word-initial *\*w*. For the Atayalic forms for “right side” derived from the Proto-Austronesian *\*wanaN* discussed in Sections 3 (Seediq), 4.2 (Atayal), and 4.3 (Atayal), no remnant of the word-initial *w* is attested.<sup>9</sup> For the semantic pair, “right side” and “left side,” Proto-Austronesian has the word-initial *\*w* (i.e., *\*wanaN*/*\*wanan* and *\*wiRi*), whereas Proto-Atayalic is assumed to have no word-initial *\*w* (*\*anal* and *\*iRil*).

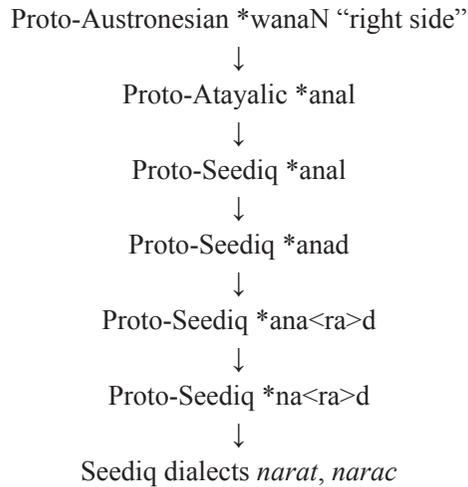
If Proto-Atayalic *\*anal* is then reflected in Proto-Seediq, it would also be *\*anal*. This paper proposes that the earlier form *narat* in Seediq is derived from the Proto-Seediq *\*anal* by inserting the fossilized back infix *\*<ra>*. If the infix is inserted to the root *\*anal*, the obtained form would be *\*ana<ra>l*. Then, the initial vowel *\*a* dropped due to its phonetically weak status, as the accent falls on the penultimate syllable and the vowels before this syllable undergo weakening.

The tentative Proto-Seediq form through infixation of *\*<ra>* and deletion of the antepenultimate vowel is *\*na<ra>l* (< *\*wana<ra>l*). However, the earlier form in Seediq is *na<ra>t*. There is a difference in the final consonant, with the tentative Proto-Seediq having *\*l* while the earlier Seediq has *t*. This discrepancy can be explained by the phonetic similarity between *l* and *d* reported in Seediq. Torii (1900a: 71) says that there is a consonant in Seediq that sounds either like *l* or *d*. Ochiai (2018: 134–135) presented data showing the ambiguity between *d* and *l* as seen in Torii’s (1900a, 1900b) wordlists in Paran Seediq and the modern Paran Seediq where *l* in modern Paran Seediq appears as “d” in Torii’s list (e.g., *gelu* “throat” appears as “gedu”), or *d* in modern Paran Seediq appears as “l” in Torii’s list (e.g., *qunedis* “long” appears as “kanelishi”).

The expected reflex of the Proto-Austronesian *\*wanaN* is *\*anal* in Proto-Seediq. However, due to confusion based on the phonetic similarity of *\*l* and *\*d*, the expected form could be changed to *\*anad*. Through infixation of *\*<ra>*, a medial form *\*ana<ra>d* is

obtained, and by deletion of the antepenultimate syllable, \*na<ra>d is finally obtained as a Proto-Seediq form. Then, \*na<ra>d is changed to *narat* by devoicing the final consonant and the word-final *t* further changed to *c* in some cases as Li (1985: 275) observes that a word-final consonant \*d in Proto-Atayalic is reflected as *c* in Paran Seediq. Therefore, \*na<ra>d changed to *narat* or *narac* in modern Seediq dialects.

**Fig. 1 The historical changes in Proto-Seediq \*na<ra>d “right side”**



In summary, Proto-Seediq \*na<ra>d “right side” is proposed to be a reflex of the Proto-Austronesian \*wanaN, which is expected to become \*anal in Proto-Seediq but the \*l changed to \*d, to give \*wanad. The Proto-Seediq form \*na<ra>d was derived by inserting the fossilized back infix \*<ra>, and the deletion of the antepenultimate syllable.

#### 4. Atayal

Sayama (1918, 1920) listed the forms for “right side” with Katakana orthography taken from twenty-three Atayal villages. Section 4.1 introduces these forms with the present author’s phonological interpretation. The forms are categorized into four types: *analiq* type, *alalaw* type, *igilax* type, and *anan* type. Sections 4.2 to 4.5 discuss these types, respectively, and Section 4.6 summarizes the forms for “right side” in Atayal.

##### 4.1 Overview

Table 2 lists the Atayal forms for “right side” seen in Sayama (1918, 1920). Based on the present author’s analysis, the forms are classified into four types: *analiq*, *alalaw* *anan*, and *igilax* type. The left column in each type gives the village name. The letters (C) and

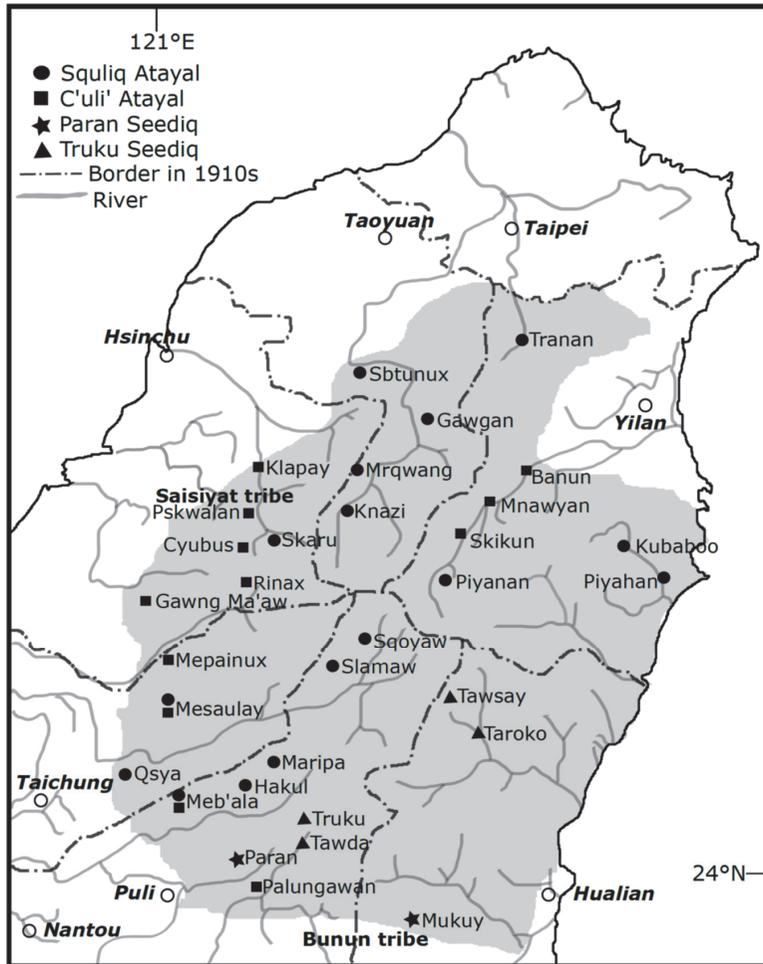
(S) indicate dialects spoken in each village: (C) for C’uli’ dialect, (S) for Squliq dialect and (C/S) for a mixture of C’uli’ and Squliq dialects.<sup>10</sup> The middle column shows the forms recorded by Sayama in Katakana orthography. In the right column, the author interpreted the Katakana orthography and provides the phonological transcriptions. Another form taken from Ogawa (1931: 35) in Sbtunux village is added in Table 2 in the *ənaliq* type.

**Table 2 Atayal forms for “right side” in Sayama (1918, 1920) classified into four types**

<i>ənaliq</i> type		
(C) Klapay	イナラック	i=nal-iq
(C) Mepainux	イナーレ	i=nal-iʔ
(C) Palungawan	アナーリ	anal-iʔ <sup>11</sup>
(S) Sbtunux	---	i=nal-iq (Ogawa 1931)
(S) Knazi	ナーリヤク	nal-iq
(S) Tranan	ナーレック	nal-iq
(S) Gawgan	ナーレック	nal-iq
(S) Hakul	ナレック	nal-iq
<i>əlalaw</i> type		
(C) Pskwalan	リーラウ	ləl-aw
(C) Banun <sup>12</sup>	レツラオ	ləl-aw
(C) Cyubus	アララオ	əlal-aw
(C/S) Mesaulay	リッラウ <sup>13</sup>	ləl-aw
(C/S) Meb’ala	アララオ <sup>14</sup>	əlal-aw
(S) Sbtunux	アララオ <sup>15</sup>	əlal-aw
(S) Skaru	リーラウ	ləl-aw
(S) Qsya	リッラオ	ləl-aw
(S) Sqoyaw	レーラオ	ləl-aw
(S) Slamaw	リラオ	ləl-aw
(S) Piyahan	リーラウ	ləl-aw
(S) Kubaboo	リーラウ	ləl-aw
(S) Piyanan	リラオ	ləl-aw
<i>əgilax</i> type		
(C) Skikun	イキラフ	əgil-ax
(C) Mnawyan	イキラフ	əgil-ax
<i>anan</i> type		
(C) Rinax	アナン	anan
(C) Gawng Ma’aw	ナーン	nan

Map 1 shows the location of Atayal villages as well as Seediq villages. Sections 4.2 to 4.5 below discuss the four types of terms representing “right side” in Atayal, *analiw*, *alalaw*, *anan* and *igilax*, respectively.

Map 1 Location of Atayal and Seediq villages



#### 4.2 *analiq* type

As shown in Table 2, seven villages show this type: three villages speaking C'uli' dialect (Klapay, Mepainux, and Palungawan) and five villages speaking Sqliq dialect (Sbtunux, Knazi, Tranan, Gawgan, and Hakul).

The Atayal wordlist of Ogawa (1931: 363) collected with an informant from Sbtunux village provides a clue to their transliteration. The form for “right side” is transcribed as

“inalyeq.” This form likely corresponds to the forms in Klapay and Mepainux villages: “イナラック” and “イナーレ.” In addition, Ogawa’s (1931: 363) form “inalyeq” is presented as “inali-eq” in Ogawa and Asai (1935: 25), suggesting that it is a complex of the root *inali* and a suffix *-eq*. They relate the root *inali* with the forms for “right side” in other Austronesian languages such as *kanan* in Tagalog. This means that it is likely related to the Proto-Austronesian \*wanaN in Blust and Trussel (2010), which is expected to be reflected as \*anal in Proto-Atayalic (See also Section 3). There is another possibility in that the Atayal form may be related to the other Proto-Austronesian form \*waNan, which is supposedly reflected as \*alan in Proto-Atayalic. However, the Proto-Seediq form \*na<ra>d “right side” goes back to the Proto-Austronesian \*wanaN (and its reflex \*anal in Proto-Atayalic) as discussed in Section 3.<sup>16</sup> Therefore, this paper assume that the Atayal form goes back to the Proto-Austronesian \*wanaN rather than \*waNan.

The suffix *-eq* is problematic in that the vowel *e* is not a phoneme in Atayal. The vowel must be phonemically an *i*, which underwent lowering due the following consonant *q*, phonetically sounding like [ieq], [eq], or even [aq] in some cases such as the form in Klapay “イナラック.” The suffix proposed by Ogawa and Asai (1935: 25) can be rewritten as *-iq*.<sup>17</sup> Then, Ogawa’s (1931: 35) form “inalyeq” is rewritten as *inal-iq*. Based on this form, the root is *inal*. Compared to the tentative Proto-Atayal \*anal, we see that they share three final segments *nal*.

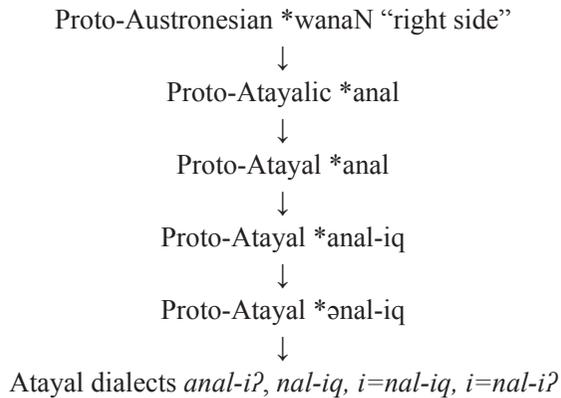
The form in Pelungawan village, where they speak the C’uli’ dialect, is transcribed as *anal-iʔ* with the final glottal stop. There is no letter suggesting the existence of a final consonant in Katakana transcription. However, the consonant *q* is known to become ʔ in some villages speaking the C’uli’ dialect (Li 1981: 248–250). The same goes for the form in Mepainux village “イナーレ.” The form in Pelunganwan village *anal-iʔ* goes back to *anal-iq*. The root in this form is *anal*, which shows higher similarity to the tentative Proto-Atayal \*anal, a reflex of Proto-Atayalic \*anal. It is likely that the earlier form for this type was *anal-iq*. The antepenultimate vowel *a* in this form is possibly the result of vowel weakening. In some C’uli’ subdialects, the weakened vowel ə before the stressed (penultimate) syllable become *a*, as mentioned in Huang (2018: 273). If so, the Pelungawan form seems to undergo the following change: *anal-iq* > ə*nal-iq* (weakening of the pre-stressed vowel to ə) > *anal-iq* (weakening of the vowel ə to *a*) > *anal-iʔ*.

The forms in the four villages speaking the Squliq dialect except for Sbtunux village are transliterated as *nal-iq*. There is no antepenultimate vowel in this form. This form seems to undergo the following change: *anal-iq* > ə*nal-iq* (weakening of the antepenultimate vowel to ə) > *nal-iq* (deletion of the antepenultimate vowel).

The *inal-iq* forms suggested in Ogawa (1931) is peculiar in that the antepenultimate vowel appears as *i*. The expected form is *ənal-iq* with the antepenultimate vowel weakening. Furthermore, the forms reported in Klapay and Mepainux villages also suggest that the penultimate vowel is *i* as seen in the letter イ in “イナラック” and “イナーレ.”

This paper proposes that the antepenultimate *i* in these forms originates in the locative marker *i*.<sup>18</sup> The forms for “right side” are *nal-iq* or *nal-i?* with antepenultimate vowel deletion like the four forms seen in villages speaking the Squliq dialect. The locative marker *i* is attached before the directional noun “right side” for the forms in Klapay and Mepainux villages as well as for the form given by the informant from the Sbutunux village in Ogawa (1931), resulting in *i=nal-iq* or *i=nal-i?*.<sup>19</sup>

**Fig. 2 The historical changes in ənaliq type in Atayal**



In terms of dialectal distribution, the *ənaliq* type is seen in both Squliq Atayal and C’uli’ Atayal. The suffixation of the *-iq* is said to have occurred in both dialects. This innovation likely took place in Proto-Atayal.

### 4.3 əlalaw type

Sayama (1918: 366) has “アララオ” as a form for Sbtunux village, with the form from the same village recorded as *əlalaw* in Ogawa (1931: 363). Based on Ogawa’s form in Sbtunux village, other forms written as アララオ in Cyubus and Meb’ala villages are also transliterated as *əlalaw*.<sup>20</sup>

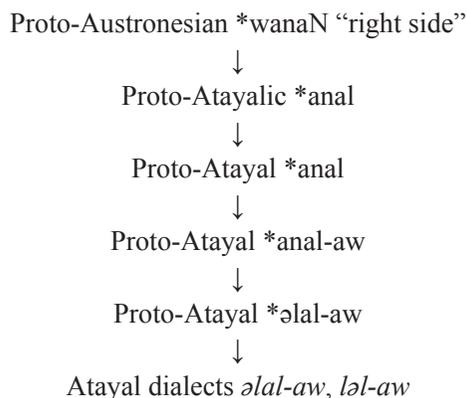
All the other forms in *əlalaw* type show no antepenultimate vowel, and they are transliterated as *ləlaw*. Sayama’s (1918, 1920) forms have many ヲ’s and one レ for the letter corresponding to the penultimate syllable. The vowel *i* seems suitable here, but the form transcribed as “llaw” in the Indigenous Languages Research and Development

Foundation (2020) suggests that it is ə as the schwa is not transcribed in modern Atayal orthography. Therefore, *ləlaw* is shown as the forms for “right side” in Sqliq Atayal and some subdialects in C’uli’ Atayal.<sup>21</sup> It is probable that the preceding and following consonant *l* caused the sound of ə to be understood more like *i* in the ears of Japanese transcribers in Sayama (1918, 1920).

Regarding the penultimate vowel, there is a strange discrepancy between the two phonetically transcribed forms in this type: *əlalaw* and *ləlaw*. In the three-syllable form *əlalaw*, the penultimate vowel is *a*. In the two-syllable form *ləlaw*, however, the penultimate vowel is ə. This paper regards the original vowel to have been *a*. A tentative form *lalaw* is obtained by deleting the antepenultimate vowel ə in *əlalaw*. The change from *lalaw* to *ləlaw* may have been triggered by a homonymic clash. The two-syllable form *lalaw* “right side” has a homonym meaning “sword.”<sup>22</sup> For example, the Indigenous Languages Research and Development Foundation (2020) have *lalaw* as a word for “sword” in both Sqliq Atayal and C’uli’ Atayal.<sup>23</sup> Then, *lalaw* meaning “right side” likely changed its penultimate vowel form *a* to ə, becoming *ləlaw*.

The *əlalaw* could also be the reflex of Proto-Austronesian \*wanaN. A fossilized suffix *-aw* might have attached to the tentative Proto-Atayal \*anal, becoming \*anal-aw. In addition, the form underwent a regressive assimilation of the consonant *n* to *l*: \*anal-aw > \*alal-aw. However, this paper admits that this argument is not particularly strong compared to the data presented for the *ənal-iq* type. First, the suffix *-aw* is unknown as a type of fossilized suffix. Second, the regressive assimilation causing *n* to become *l* is also unknown in Atayal.<sup>24</sup> Nevertheless, the suffix *-aw* would be a newly recognized fossilized suffix in Atayal, if the analysis of \*alal-aw is correct.

**Fig. 3 The historical changes in əlalaw type in Atayal**



In terms of dialectal distribution, the *əlalaw* type is seen in both Squliq Atayal and C’uli’ Atayal. The suffixation of the *-aw* is said to have occurred in both dialects. This innovation likely took place in Proto-Atayal.

#### 4.4 *əgilax* type

Only a single form from two villages belongs to this type in Table 2. “イキラフ” in Skikun village and Mnawyan village. The subdialects in these two villages are said to be so similar that they are even considered to be the same subdialect (Li 1996: 187).<sup>25</sup> The Katakana form is translated as *əgilax* with reference to the corresponding form in Skikun reported in the Indigenous Languages Research and Development Foundation (2020) as *gəlax*, which has undergone the deletion of the antepenultimate weak vowel *ə*. In addition, it seems to have further undergone a weakening of the penultimate vowel as the stress has been shifting from the penultimate to the ultimate syllable in modern Atayal dialects.<sup>26</sup>

This form *əgilax* has no resemblance to *\*wanaN/\*waNan*, the Proto-Austronesian form for “right side.” Furthermore, the form is peculiar in that it has three syllables whereas content words are typically made of two syllables in Atayalic languages. In words longer than two syllables, affixation to a root is suspected. As mentioned in Section 1, one of the forms of the fossilized suffix is *-ax*. This sequence of segments is seen in *əgilax* word-finally. By supposing it to be a suffix, the word can be analyzed as *əgil-ax*, suggesting that the root is *əgil*.

This paper proposes that *əgilax* type is derived from the word for “left side.” The Proto-Atayalic form for “left side” can be reconstructed as *\*iRil* based on the Atayal and Seediq forms in Li (1981: 274, 287).<sup>27</sup> Atayal forms from one Squliq village (Squliq), four C’uli’ villages (Maspazi, Skikun, Rinax and Palngawan), and Truku Seediq in Li (1981: 287) are shown in Table 3.<sup>28</sup>

**Table 3** Forms for “left side” in Atayali languages

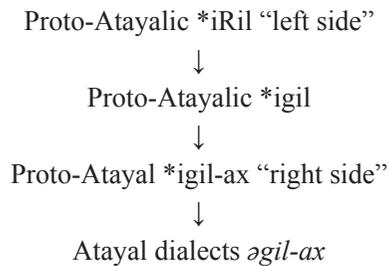
Squliq	<i>əzil</i> <sup>29</sup>
Maspazi	<i>aʔil</i>
Skikun	<i>iyil</i>
Rinax	<i>iil</i>
Palngawan	<i>iil</i>
Truku Seediq	<i>iril</i>

Li (1981: 274) says \*R becomes \*g except under the condition that \*R comes before the vowel *i*, where it becomes \*r. Based on this, the expected Proto-Atayalic form is \*iril.

Li (1981: 264) notes that the consonant *r* becomes *z* in Squaliq village, as shown in the form *əzil* in Table 3. In other cases, *r* becomes *y* in Atayal, as shown in the form *iyil* in Skikun village. For the form *iil* seen in Rinax and Palngawan village, it can be said that the medial consonant *y* is deleted between two like vowels *i*. In the Maspazi form, this medial consonant is said to be dropped first, and a glottal stop is inserted between a hiatus.

However, another possibility is that the \*R became *g* even though it precedes the vowel *i*. Such a case is observed in the Proto-Atayal \*Rihaq “the other side of the fountain” becoming *gihaq* in the Rinax subdialect of C’uli’ Atayal according to Ochiai (2023c: 194). The form for “left side” could be either *iril* or *igil* in earlier Atayal. In Skikun village, the former form *iril* was adopted, and it later became *iyil* as seen in Table 3. The other form *igil* might be adopted for deriving the opposite meaning “right side.” The fossilized suffix *-ax* is added to the root *igil*, becoming *igil-ax*.<sup>30</sup> Then, antepenultimate vowel was weakened to schwa, becoming *əgil-ax* as shown in Figure 4.

**Fig. 4 The historical changes in əgilax type in Atayal**



In terms of dialectal distribution, the *əgilax* type is seen in two adjacent villages, Skikun and Manawyan, belonging to C’uli’ Atayal. The innovation of “right” by suffixation of the *-ax* to the root meaning “left” is said to have been confined to these two villages.

Normally, the meaning of the root remains the same after the attachment of fossilized affixes in Atayalic languages. In this case, the meaning of root “left side” shifted to its antonym, “right side” by attaching the fossilized suffix. Both meanings are, however, in the same semantic domain referring to direction.<sup>31</sup>

#### 4.5 anan type

Only two forms belong to this type in Table 2. “アナン” in Rinax village and “ナー

ン” in Gawng Ma’aw village. Mabuchi (1954: 133) points out that these two villages have phonological and lexical peculiarities compared to the other Atayal dialects, probably due to the adoption of foreign factors.<sup>32</sup> As shown in Map 1, the two villages are next to each other.

The form in Rinax village, “アナン,” is transliterated into *anan*. An adjacent Formosan language, Pazih, has the identical form *anan* as a word for “right side.”<sup>33</sup> Therefore, the *anan* reported in Rinax village is likely borrowed from Pazih. Gawng Ma’aw village also borrowed this form, but the initial vowel *a* was deleted, becoming *nan*.<sup>34</sup>

The Pazih form *anan* is evidently a reflex of the Proto-Austronesian \*wanaN or \*waNan. However, an expected reflex in Pazih is either \*wanal or \*walan. The initial consonant *w* is deleted in either case to give \*anal or \*alan. In addition, the consonant *l* underwent assimilation to the preceding *n* in \*anal or the following *n* in \*alan, resulting in *anan* in either case. This assimilation is similar to the one that supposedly occurred in the *əlal-aw* (< \*ənal-aw) type in Atayal, even though the trigger consonant is different in the two languages: *n* in Pazih and *l* in Atayal.

In terms of dialectal distribution, the *anan* type is seen in two adjacent villages, Rinax and Gawng Ma’aw, in C’uli’ Atayal. The borrowing of the form *anan* “right” from Pazih, is said to have been confined to these two villages.

#### 4.6 Interim summary

The four types of “right side” in Atayal, *ənalīq*, *əlalaw*, *əgilax*, and *anan* types, discussed in the Sections 4.2 to 4.5 are summarized in Table 4, which shows their origins, derivations and dialectal distributions.

**Table 4 Four types of “right side” in Atayal and their origins, derivations, and dialects<sup>35</sup>**

	Origin	Derivation	Dialect
<i>ənalīq</i>	Proto-Atayal *anal (< P <sub>AN</sub> *wanaN)	Fossilized suffix <i>-iq</i>	Squliq; C’uli’
<i>əlalaw</i>	Proto-Atayal *anal (< P <sub>AN</sub> *wanaN) <sup>36</sup>	Fossilized suffix <i>-aw</i>	Squliq; C’uli’
<i>əgilax</i>	Proto-Atayal *igil (< P <sub>AN</sub> *wiRi)	Fossilized suffix <i>-ax</i>	C’uli’ (Skikun and Manawyan)
<i>anan</i>	Pazih <i>anan</i> (< P <sub>AN</sub> *wanaN)	---	C’uli’ (Rinax and Gawng Ma’aw)

As seen in Sections 4.2 and 4.3, both the *ənalīq* and *əlalaw* types are widely distributed both among Squliq and C’uli’ dialects. The *əgilax* type, on the other hand, is regarded as an

innovation confined to the two adjacent villages, Skikun and Manawyan, belonging to C’uli’ Atayal. The borrowing of the Pazih word for “right side” is also confined to the two adjacent villages, Rinax and Gawng Ma’aw, belonging to C’uli’ Atayal.

The distribution of the two types, *ənalıq* and *əlalaw*, across dialects is difficult to explain. If *ənalıq* type or *əlalaw* type were seen only in either of the dialects, either type could be considered as an innovation in each dialect.

The clue to solving this puzzle may lie in Ogawa’s (1931: 363) description of the word for “right side” in Sbtunux village. He has *əlalaw* as “right side” and *inalıq* (*ənalıq* type in this paper) as “right hand” (See also Table 2). The two types are differentiated by their meanings.

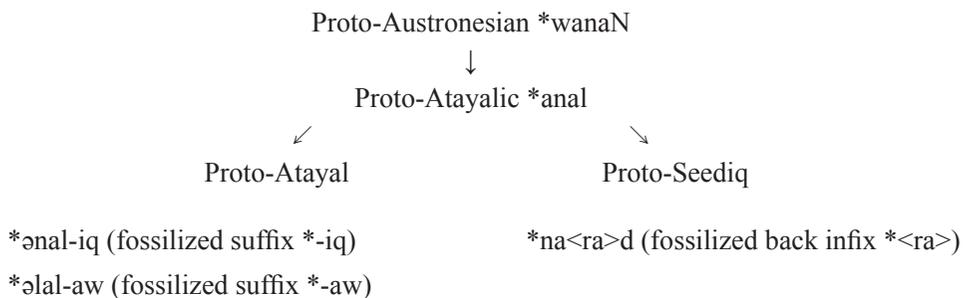
In Proto-Atayal, the two forms for “right side” are derived from the Proto-Austronesian \*wanaN, which are \*ənal-ıq and \*əlal-aw. The two synonymous forms survive in Sbtunux village, the latter with a slightly different meaning, “right hand.” In other villages in Squliq Atayal and C’uli’ Atayal, either of the forms survived as “right side” and the other form disappeared. It is also possible that some villages still maintain two forms, probably with slightly different meanings as seen in Sbtunux village, but the other form was not recorded in Sayama (1918, 1920).

### 5. Conclusion

Figure 5 summarizes the proposal presented in this paper. The forms for “right side” in Atayalic languages reflect the Proto-Austronesian \*wanaN “right side.” However, the reflexes are attached with fossilized suffixes.

In \*na<ra>d, the Proto-Seediq form, the fossilized back infix \*<ra> is inserted. In addition, the final consonant \*l is changed to \*d. In Proto-Atayal, two forms, \*ənal-ıq and \*əlal-aw, are derived by attaching different fossilized suffixes, \*-ıq and \*-aw. In the latter form, the consonant \*n is assimilated to the following consonant \*l.

**Fig. 5 Reflexes of Proto-Austronesian \*wanaN in Atayalic languages**



Furthermore, two adjacent villages, Skikun and Mnawyan, belonging to C'uli' Atayal developed a novel form for “right side” by attaching a fossilized suffix *-ax* to the reflex of the Proto-Atayalic \*iRil “left side.” Yet another two villages belonging to C'uli' Atayal, Rinax and Gawng Ma'aw, borrowed *anan* “right side” from Pazih.

By taking fossilized affixes into consideration, more cognate relationships could be uncovered between Proto-Austronesian and Atayalic forms.

### Notes

- \* This paper is a revised version of a poster presentation given by the author at Gengogaku Fesu 2024 held online on 20<sup>th</sup> January 2004.
- 1 Dialectal groupings among Atayalic languages is based on Ogawa and Asai (1935: 21, 559). The data for Paran Seediq was taken from the author's fieldnotes unless otherwise cited.
- 2 For Puyuma, Paiwan, Rukai and Bunun, each language itself consists of a subgroup.
- 3 Ogawa and Asai (1935: 22) state that the stress exceptionally falls on the final syllable under the condition that the penultimate vowel is a schwa, the final vowel is long, or the final consonant is a glottal stop.
- 4 Li (1981: 239) also noted some exceptions. The weakened vowels further change to *u* in Paran Seediq and to *a* in the Maspazi subdialect of C'uli' Atayal.
- 5 For Puyuma and Rukai, the words in parenthesis, “Tanan” and “Tamalakaw”, indicate their dialects.
- 6 For Paiwan, another form *i-naval'* is also listed in Blust and Trussel (2010) with the gloss “toward the upper reaches of river (thus “south if the river runs from south to north”).” In addition, the form in Paiwan suggests metathesis of the consonants *n* and *v*.
- 7 The forms in Truku Seediq are taken from the Indigenous Languages Research and Development Foundation (2020).
- 8 The forms in Proto-Atayalic and Proto-Austronesian differ in the existence of a final consonant. Proto-Atayalic has the word-final consonant *l*, while Proto-Austronesian has no word-final consonant.
- 9 However, it is also possible that the word-initial \*w is just dropped in Atayalic languages.
- 10 Dialectal classifications of the Atayal villages are judged by the present author based on the descriptions in Mori (1917), Utsushikawa et al. (1935), and Ochiai (2023b: 9).

- 11 Indigenous Languages Research and Development Foundation (2000) also has *anal'* (which represent [analiʔ]) for the form in Palngawan village.
- 12 The form in Banun village has a gloss saying “明ラカ,” which means “clear” (Sayama 1918: 390). In relation to this, Ogawa (1931: 367) has *əlalaw kəta-an* (clear seen-UVL) as an expression for “見晴らす,” meaning “to have an unbroken or distant view of something” (the glosses in the parentheses are added by the present author and UVL stands for undergoer voice, location subject). It is uncertain whether the homonymy of the form for “right side” and “clear” is a coincidence or the meanings are related, one of them being derived from the other.
- 13 There is a diacritic “~” above ㄌ and ㄌ. The use of the diacritic is unknown, but it supposedly refers to consonant *l* rather than *r*.
- 14 There is a diacritic “~” above the two ㄌ.
- 15 There is a diacritic “~” above the two ㄌ.
- 16 This means that Proto-Austronesian \*wanaN requires less phonological processes than \*waNan to obtain the attested Seediq forms.
- 17 The same fossilized suffix *-iq* is seen in words such as *sisil-iq* in C'uli' Atayal (Rinax village) reported in Li (1982: 293). The cognate in Truku Seediq, *sisil*, taken from the Indigenous Languages Research and Development Foundation (2020), has no suffix.
- 18 The case marker *i* is reported as one of the locative markers in both Squliq Atayal and C'uli' Atayal in Huang and Wu (2018: 61) and Huang (1995: 109), respectively.
- 19 These forms with a locative marker could mean “on the right.”
- 20 However, it is possible that the antepenultimate vowel *ə* changed to *a* in Cyubus and Meb'ala villages, where Squliq and C'uli' dialects are mingled. As in the case of \*ənal-iq becoming *anal-iq* in the Pelungawan village, some subdialects of C'uli' dialect might undergo the change of *ə* changed to *a* in the syllables before penultimate syllable.
- 21 These subdialects of C'uli' Atayal in the Indigenous Languages Research and Development Foundation (2020) are called 四季 (Skikun) and Yilan Zeaoli (宜蘭澤敖利). Another subdialect, Zeaoli (澤敖利), has *ələlaw*. In this form, it is not clear why the penultimate vowel *ə* changed to *e*. It is also possible that the form was *lilaw* during the period when Sayama (1918, 1920) recorded these forms, and it underwent weakening of the penultimate vowel becoming *ləlaw* in modern Atayal dialects (See also Section 4.4).
- 22 Ogawa (2006: 418) presents the forms for “sword” in many Atayal villages from various sources which Ogawa had access to around the 1920s. There, the forms are either “lalaw” or “lālaw” (the bar seems to indicate lengthening). The penultimate

vowel is a in these forms.

- 23 The subdialects of C'uli' dialect in which *lalaw* “sword” are recoded in the Indigenous Languages Research and Development Foundation (2020) are 四季 (Skikun) and Zeaoli (澤敖利).
- 24 However, an analogous assimilation is seen *anan*, a Pazih form for “right side” as discussed in Section 4.5. In addition, an analogous assimilation is seen in the Proto-Atayalic \**jajum* (> Proto-Atayal \**gagum* “river”), which reflects the Proto-Austronesian \**daNum* “fresh water.” The expected Proto-Atayalic is \**dalum*; however, either the initial consonant \**d* or the medial consonant \**l* became \**j*, which in turn triggered the assimilation of the other consonant (Ochiai 2024).
- 25 This comment in Li (1996: 187) was made by Tsuchida Shigeru.
- 26 However, it is also possible that the intended form denoted by “イキラフ” was *əgəɫax* with a penultimate *ə*. In the letter “キ,” the vowel corresponding to penultimate syllable is *i*, but since Japanese Kana characters have no letters for the vowel *ə*, it could be substituted by any other vowel series: *a*, *e*, *i*, *o*, and *u*. It is nevertheless better to assume that the penultimate vowel was *i* if this is derived from \**iRil* “left” as this paper proposes.
- 27 The Proto-Atayalic form reconstructed by Li (1981: 287) is \**ʔiril*. It has an initial glottal stop; however, this paper deleted this considering that it is a phonetically realized consonant appearing before a word beginning with a vowel. In addition, the form for “left side” is among a set of words containing \**R* in Li (1981: 274). Therefore, the word medial \**r* in \**ʔiril* in Li (1981: 287) is rewritten as the consonant \**R* as in \**iRil* in this paper.
- 28 The initial glottal stops written in these forms in Li (1981: 287) were deleted for the reason mentioned in endnote 27 except for the form in Squliq village, *ʔzil*, where the glottal stop corresponds to a penultimate syllable. However, the present author considers this letter to stand for a schwa.
- 29 In the Squliq form, the original penultimate vowel *i* likely underwent weakening to *ə*. The same penultimate vowel weakening is seen in the Maspazi form in which the weakened vowel appears as *a*, as this change is seen in pre-stressed syllables (usually syllables preceding the penultimate syllable) in some subdialects of C'uli' Atayal (See also Section 4.2).
- 30 It is also possible that “イ” in “イキラフ” in Sayama (1918: 390) indicates the vowel *i*, the stage before the antepenultimate vowel weakening.
- 31 A similar meaning shift is reported in Ochiai (2023c: 193–194). The Atayal word

- \*gihaq originally meant “back side of the mountain.” This form derived \*giha<ra>q by inserting a fossilized back infix, and the meaning changed to “to be cold.” In addition, Ochiai (2022d: 17) pointed out that \*həpu<ra>y “to cook (using fire)” in Proto-Seediq has a fossilized back infix, and its root originates in the Proto-Austronesian \*Sapuy “fire.”
- 32 Ochiai (2021: 145) pointed out these two villages as well as Cyubus village borrowed a word for “house, indoor” from Tsou, another Formosan language. This suggests that these villages might have been influenced by several Formosan languages including Pazih.
- 33 The Pazih form is taken from Li and Tsuchida (2001: 66).
- 34 It is not clear why the penultimate vowel *a* is deleted. In addition, the Katakana orthography with the lengthening letter “—” indicates that the vowel *a* was pronounced phonetically long (e.g., [na:n]).
- 35 In Table 4, PAN stands for Proto-Austronesian.
- 36 It is also possible that Proto-Atayal had already undergone assimilation to give \*alal. If so, two variants, \*anal and \*alal, are obtained in the Proto-Atayal forms as the reflexes of the Proto-Austronesian \*wanaN.

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