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A note on the quantifier float in Pwo Karen

Atsuhiko Kato

1. Introduction

Pwo Karen is a language that belongs to the Karenic branch of Tibeto-Burman. This language has several dialectal groups. Kato (2017, 2019) lists four Pwo Karen dialectal groups that are not intelligible to each other: Western Pwo Karen, Htoklibang Pwo Karen, Eastern Pwo Karen, and Northern Pwo Karen. For classification of the Pwo Karen dialects and a detailed discussion of their characteristics, see Kato (1995, 2009), Phillips (2000, 2017), and Dawkins and Phillips (2009a,b). The dialect treated in this report is the Hpa-an dialect, which belongs to Eastern Pwo Karen. The Hpa-an dialect is spoken in the capital of Karen State, Myanmar, and the Pwo Karen dialects spoken in nearby cities such as Hlaingbwe and Kawkareik can be included here. In this report, the language name "Pwo Karen" refers to this Hpa-an dialect.

Pwo Karen is an analytic SVO-type language, which is the same as the other Karenic languages. The structure of a verb-predicate clause in Pwo Karen can be represented as in (1). The bracketed elements are optional.

(1)   (NP1) (verb particle(s)) V (verb particle(s)) (NP2) (NP3) (adverbial elements)

                verb complex

Basic structure of the Pwo Karen verb-predicate clause

'NP' represents a noun phrase. In the case of an intransitive verb, only NP1 can

appear. In the case of a monotransitive verb, NP1 and NP2 can appear. In this case, NP1 is typically the agent and NP2 is typically the patient. In the case of a ditransitive verb, NP1, NP2, and NP3 can appear. To take the typical ditransitive verb *phílâɴ* 'to give' for example, NP1 is the agent, NP2 is the recipient, and NP3 is the theme. In this report, I call NP1 the 'subject'; NP2 of a monotransitive verb and NP3 of a ditransitive verb the 'direct object'; and NP2 of a ditransitive verb the 'indirect object'. Before and after the verb, various verb particles may appear. I call the part consisting of the verb and the verb particle(s) a 'verb complex'. In the position of 'adverbial elements', adverbs, adpositional phrases, adverbial particles, and undermentioned NC phrases may occur. In addition to the elements shown in the schema, after the adverbial elements, another verb complex may occur, which is the second verb of a separated type serial verb construction (see Kato 2004, 2017, 2019). Furthermore, some adverbial elements may appear clause-initially.

In a Pwo Karen noun phrase, the constituent 'numeral + NC(numeral classifier)', which I will call an 'NC phrase' in this report, is used to quantify the referent of the head noun. Since NC phrases are important in the discussion of this paper, I will explain a little about Pwo Karen NC phrases here. An NC phrase is placed after the head noun, as in *thwí lə dù* (dog - one - NC[animal]) 'one dog'. In this example, the part *lə dù* (one - NC[animal]) is the NC phrase. An NC phrase alone can be used as a noun phrase in a clause; thus, *lə dù* can be used as a noun phrase that has a syntactic function such as the subject, object, or adjunct. Numeral classifiers cannot be used without a numeral; thus, *dù jò (NC[animal] - this), *thwí dù (dog - NC[animal]), and *thwí dù jò (dog - NC[animal] - this) are all ungrammatical. Numeral classifiers of frequent use are: *dù* for animals (mainly mammals) and also as a general classifier for an object that is difficult to classify; *ɣà* for a human; *béiɴ* for a flat thing; *bòɴ* for a long thing; *thɔ́ɯɴ* for a tree; *phlóɯɴ* for a round thing; *cóɴ* for a place; and *khɔ́* for a tool. Insects, birds, and fish are counted with *béiɴ* (NC[flat]). Snakes and lizards are counted with *bòɴ* (NC[long]). Crocodiles are counted with either *dù* (NC[animal]) or *bòɴ* (NC[long]). Some nouns are quantified with a classifier that has the same shape as

the noun. I call these classifiers 'auto-classifiers', following Matisoff's (1973: 89) terminology. Examples of auto-classifiers are: *təwân lə təwân* (village - one - NC[auto]) 'one village'; *chì lə chì* (race - one - NC[auto]) 'one ethnic group'; and *kò lə kò* (island - one - NC[auto]) 'one island'.

2. Quantifier float in Pwo Karen

The phenomenon of so-called "quantifier float" can be observed in Pwo Karen. Let us look at sentence (2) first. In this example, the NC phrase *θɔ̄N ɣà* (three - NC[human]) represents that the number of concerned students in the event that this sentence expresses is three.

(2) **təwâphjā θɔ̄N ɣà**   ɣɛ̂   lɔ́   jò
     student   three NC[human] come LOC   here
     'Three students came here.'

In (2), the NC phrase *θɔ̄N ɣà* inside the noun phrase *təwâphjā θɔ̄N ɣà* 'three students' can be moved to the position of adverbial elements. See (3):

(3) **təwâphjā** ɣɛ̂   lɔ́   jò   **θɔ̄N ɣà**
     student   come LOC   here   three NC[human]
     'Three students came here.'

As is seen from this, Pwo Karen has a phenomenon in which the NC phrase inside a noun phrase can be moved to the position of adverbial elements. I define this phenomenon as the quantifier float in Pwo Karen. It would also be possible to consider that the NC phrase in the position of adverbial elements is placed in this position from the beginning, not being "floated" from a noun phrase. However, in order to examine what kinds of noun phrases can be quantified by a NC phrase in the way of either (2) or (3), it is useful to assume a movement from inside a noun phrase to the position of

adverbial elements. Thus, in this report, I will use the term "quantifier float".

The quantifier float shown in (3) is a float from the subject of an intransitive verb. I will examine other cases. Sentence (4a) can be paraphrased as sentence (4b). This is a quantifier float from the subject of a transitive verb.

(4) a. **təwâphjā θɔ̄ɴ ɣà**   ʔáɴ mì̠
     student   three NC[human] eat rice
     'Three students ate rice.'

   b. **təwâphjā** ʔáɴ   mì̠   **θɔ̄ɴ**   **ɣà**
     student   eat   rice three NC[human]
     'Three students ate rice.'

Next, (5a) can be paraphrased as (5b). This is a quantifier float from the object of a transitive verb.

(5) a. ʔəwê dʊ́ **təwâphjā θɔ̄ɴ ɣà**   lɔ́   dàʊ   phə̀ɴ
     3SG   hit student   three NC[human] LOC room inside
     'He hit three students in the room.'

   b. ʔəwê dʊ́ **təwâphjā** lɔ́   dàʊ   phə̀ɴ   **θɔ̄ɴ**   **ɣà**
     3SG   hit student   LOC room inside three NC[human]
     'He hit three students in the room.'

Observing quantifier floats from non-subject noun phrases, as in (5b), requires some ingenuity. See (6) below:

(6) ʔəwê dʊ́ **təwâphjā θɔ̄ɴ ɣà**

    3sɢ   hit   student   three ɴᴄ[human]

    'He hit three students.'

In this example, the NC phrase *θɔ̄ɴ ɣà* cannot be separated from the noun *təwâphjā* because the object noun phrase *təwâphjā θɔ̄ɴ ɣà* 'three students' is the sentence-final constituent in this sentence. When we examine quantifier floats from non-subject noun phrases, this problem may always occur. For this reason, I put the adpositional phrase *lə́ dàʊ phɔ̀ɴ* (ʟᴏᴄ - room - inside) 'in the room' in the sentence-final position of (5a). Since adpositional phrases occur in the position of adverbial elements, we can say that an NC phrase that is placed after an adpositional phrase is an adverbial element. Thus, the NC phrase *θɔ̄ɴ ɣà* in (5b) is an adverbial element. In other words, it has floated to the present position from the object.

    One might suspect that the NC phrase *θɔ̄ɴ ɣà* in (5a) and (6) is in the position of adverbial elements, not inside the noun phrase headed by *təwâphjā* 'student', because the position of the object and that of adverbial elements are adjacent. However, in this report, I consider that *θɔ̄ɴ ɣà* in (5a) and (6) is inside the noun phrase headed by *təwâphjā* 'student'. The reason is as follows: NC phrases that are placed immediately after the head noun on the surface never lower the acceptability of the sentences. It is only the NC phrases separated from the head noun on the surface that may lower the acceptability of the sentences (see, e.g., (9b), (10b), (11b), and (13b) below). Therefore, it is reasonable to consider that NC phrases that are placed immediately after the head noun on the surface are always inside the noun phrase; thus, the NC phrase *θɔ̄ɴ ɣà* in (5a) and (6) can also be considered a constituent inside the noun phrase headed by *təwâphjā*.

    Next, I will examine quantifier floats from the object of a ditransitive verb. In (7) and (8), the ditransitive verb *phḭ́lâɴ* 'to give' is used. When the NC phrase is floated from the indirect object of (7a), we get (7b). When the NC phrase is floated from the direct object of (8a), we get (8b). Thus, quantifiers can float from both the direct object

and indirect object of a ditransitive verb.

(7) a. jə   ph<u>í</u>lân   **təwâphjā** **θɔɴ**   **ɣà**   láiʔàʊ

     1sɢ   give   student   three   ɴc[human]   book

     'I gave three students books.'

   b. jə   ph<u>í</u>lân   **təwâphjā**   láiʔàʊ   **θɔɴ**   **ɣà**

     1sɢ   give   student   book   three   ɴc[human]

     'I gave three students books.'

(8) a. jə   ph<u>í</u>lân   təwâphjā   **láiʔàʊ** **θɔɴ**   **béiɴ**   lɔ́   ləkōʊɴ

     1sɢ   give   student   book   three   ɴc[flat]   ʟoc   Yangon

     'I gave a student three books in Yangon.'

   b. jə   ph<u>í</u>lân   təwâphjā   **láiʔàʊ**   lɔ́   ləkōʊɴ   **θɔɴ**   **béiɴ**

     1sɢ   give   student   book   ʟoc   Yangon   three   ɴc[flat]

     'I gave a student three books in Yangon.'

As we can see above, NC phrases can be floated from the subject and the object. Then, what about adjuncts? In Pwo Karen, many adjuncts are introduced by adpositional particles (Kato 2004: 129–143). I call the adpositional particles 'adpositions' in this report. Here, I will examine *dē* and *lɔ́*, which are used most frequently among the adpositions.

The adposition *dē* denotes semantic roles such as accompaniment and instrument (see Kato 2010 for details). (9a) is an example of it denoting accompaniment and (10a) of it denoting instrument. When the NC phrases are floated from the noun phrases introduced by *dē* in (9a) and (10a), we get (9b) and (10b), both of which are unacceptable.

(9) a. ʔəwê tháɯnlī dē **ʔəmúı θ̄ōn ɣà** lɔ́ dàʊ phə̀n

      3SG   dance   with woman three NC[human] LOC room inside

      'He danced with three women in the room.'

    b. *ʔəwê tháɯnlī dē **ʔəmúı** lɔ́ dàʊ phə̀n θ̄ōn ɣà

       3SG   dance   with woman LOC room inside three NC[human]

       IM: 'He danced with three women in the room.'

(10) a. ʔəwê khà dē **pìcətòθêiɴná nī khɔ́** lənìjò

       3SG   shoot with pistol   two   NC[tool] today

       'He shot with two pistols today.'

    b. *ʔəwê khà dē **pìcətòθêiɴná** lənìjò **nī khɔ́**

       3SG   shoot with pistol   today   two   NC[tool]

       IM: 'He shot with two pistols today.'

The adposition *lɔ́* denotes semantic roles such as location, goal, and source (see Kato 2010 for details). I gloss this adposition as 'LOC' in this report. (11a) is an example of it denoting location, (12a) of it denoting goal, and (13a) of it denoting source. When the NC phrases are floated from the noun phrases introduced by *lɔ́* in (11a), (12a), and (13a), we get (11b), (12b), and (13b). Among these, only (12b) denoting goal is acceptable, while (11b) denoting location and (13b) denoting source are unacceptable.

(11) a. ʔəθí ʔáɴchâ phjājò lɔ́ **phjâ θ̄ōn cóɴ** lənìjò

       3PL   sell   this.one LOC market three NC[place] today

       'They sold these in three markets today.'

b. *ʔəθí ʔáɴchâ phjājò lɔ́ **phjâ** lənìjò **θɔ̄ɴ** **cóɴ**

3PL sell this.one LOC market today three NC[place]

IM: 'They sold these in three markets today.'

(12) a. ʔəwê lì̱ lɔ́ **phjâ** **θɔ̄ɴ** **cóɴ** lənìjò

3SG go LOC market three NC[place] today

'He went to three markets today.'

b. ʔəwê lì̱ lɔ́ **phjâ** lənìjò **θɔ̄ɴ** **cóɴ**[1]

3SG go LOC market today three NC[place]

'He went to three markets today.'

(13) a. ʔəwê nī̱ khòθá lɔ́ **khāɴməɲā** **θɔ̄ɴ** **cóɴ** lənìjò

3SG get mango LOC foreign.country three NC[place] today

'He got mangos from three foreign countries today.'

b. *ʔəwê nī̱ khòθá lɔ́ **khāɴməɲā** lənìjò **θɔ̄ɴ** **cóɴ**

3SG get mango LOC foreign.country today three NC[place]

IM: 'He got mangos from three foreign countries today.'

Let me summarize what we have seen in this section. In Pwo Karen, NC phrases can be floated from the subject, the direct object, and the indirect object. Nevertheless, in the case of adjuncts, NC phrases cannot be floated from them with the exclusion of the noun phrase denoting goal.

In the next section, we will discuss the behavior of NC phrases with the negative polarity item *nāɴ*. By contrast, I will hereafter call the NC phrases without *nāɴ* that we

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1 Phrases or words denoting time are most naturally placed in the clause-initial or clause-final position. Although (12b) is grammatical, it is somewhat unnatural in the sense that the word meaning 'today' is placed clause-medially.

have seen in this section the 'normal NC phrases'.

3. NC phrases with the negative polarity item *nān*

In this section, we will observe the behavior of NC phrases with the negative polarity item *nān* 'any' (for the concept of negative polarity items, see, e.g., Haspelmath 1997). This morpheme is always placed before a numeral classifier; thus, Kato [加藤] (2004: 122-124) classifies it as a numeral. (14) is an example of *nān* with the numeral classifier *ɣà*.

(14) **təwâphjā** ɣɛ̂ lɔ́ jò **nān ɣà** ʔé
  student come LOC here any NC[human] NEG
  'No students came here.'

NC phrases with the negative polarity item *nān* are placed in the position of adverbial elements, and never occur inside a noun phrase. (15) is ungrammatical because the NC phrase with *nān* appears inside the noun phrase headed by *təwâphjā* 'student'. In (16), it looks at a glance as if the NC phrase *nān ɣà* occurs inside the noun phrase because *nān ɣà* immediately follows the noun *təwâphjā*. However, considering that (15) is ungrammatical, *nān ɣà* in this example should be considered as being placed in the position of adverbial elements.

(15) ***təwâphjā nān ɣà** ɣɛ̂ lɔ́ jò ʔé
  student any NC[human] come LOC here NEG
  IM: 'No students came here.'

(16) jə dá **təwâphjā nān ɣà** ʔé
  1SG see student any NC[human] NEG
  'I did not see any student.'

Thus, NC phrases with *nān* occur only in the position of adverbial elements; that is, they do not "float" from inside of the noun phrase to the position of the adverbial phrase. This means that we cannot discuss the behavior of NC phrases with *nān* in terms of quantifier float. However, NC phrases with *nān* quantify noun phrases as well as the normal NC phrases do. In (14) and (16), for example, *nān yà* quantifies the noun *təwâphjā*. In this regard, NC phrases with *nān* have the common function of normal NC phrases as discussed in Section 2, and it is worth discussing the behavior of NC phrases with *nān*. Despite this common function, NC phrases with *nān* show a large difference from normal NC phrases. The difference is that NC phrases with *nān* can quantify a wider range of noun phrases than floated normal NC phrases can.

In (14), the NC phrase with *nān* quantifies the subject of an intransitive verb, in the same way as the floated normal NC phrase in (3) does. I will examine cases other than the intransitive subject below.[2]

●The subject of a transitive verb, cf. (4b)

(17) **təwâphjā** ʔáɴ mì̠ **nāɴ** **yà** ʔé
　　 student eat rice any NC[human] NEG
　　 'No students ate rice.'

●The object of a transitive verb, cf. (5b)

(18) ʔəwê dɔ́ **təwâphjā** lɔ́ dàʊ phɔ̀ɴ nāɴ **yà** ʔé
　　 3SG hit student LOC room inside any NC[human] NEG
　　 'He did not hit any students in the room.'

————————————————

2　In Pwo Karen negative sentences with an NC phrase with *nān*, putting adverbial elements other than the NC phrase is generally not preferred. In this sense, sentences (18), (20), (21), (22), (23), (24), and (25) are somewhat unnatural. One of the ways to remove this unnaturalness is by topicalizing the adverbial element. Topicalization in Pwo Karen entails a left-dislocation of the topicalized element. To take (18) as an example, if the adverbial element *lɔ́ dàʊ phɔ́ɴ* (LOC - room - inside) 'in the room' is topicalized and placed sentence-initially as in *lɔ́ dàʊ phɔ̀ɴ nɔ́ ʔəwê dɔ́ təwâphjā nāɴ yà ʔé* (LOC - room - inside - TOP - 3SG - hit - student - any - NC[human] - NEG), the sentence becomes quite natural.

●The indirect object of a ditransitive verb, cf. (7b)

(19) jə   phílâɴ   **təwâphjā**   láiʔàʊ   **nāɴ**   **ɣà**   ʔé

     1sɢ   give   student   book   any   ɴc[human] ɴᴇɢ

     'I did not give books to any students.'

●The direct object of a ditransitive verb, cf. (8b)

(20) jə   phílâɴ   təwâphjā   **láiʔàʊ**   lɔ́   ləkōʊɴ   **nāɴ**   **béiɴ**   ʔé

     1sɢ   give   student   book   ʟᴏᴄ Yangon   any   ɴc[flat] ɴᴇɢ

     'I did not give the student any books in Yangon.'

●The adjunct with *dē* denoting accompaniment, cf. (9b)

(21) ʔəwê thɔ́ʊɴlī dē   **ʔəmɯ́**   lɔ́   dàʊ   phàɴ   **nāɴ**   **ɣà**   ʔé

     3sɢ   dance   with woman   ʟᴏᴄ room inside   any   ɴc[human] ɴᴇɢ

     'He did not dance with any women in the room.'

●The adjunct with *dē* denoting instrument, cf. (10b)

(22) ʔəwê khà   dē   **pìcətòθêiɴná** lənìjò   **nāɴ**   **khɔ́**   ʔé

     3sɢ   shoot   with pistol   today   any   ɴc[tool] ɴᴇɢ

     'He did not shoot with any pistols today.'

●The adjunct with *lɔ́* denoting location, cf. (11b)

(23) ʔəθí ʔáɴchâ phjājò   lɔ́   **phjâ**   lənìjò   **nāɴ**   **cóɴ**   ʔé

     3ᴘʟ   sell   this.one ʟᴏᴄ market today   any   ɴc[place] three

     'They did not sell these in any markets today.'

●The adjunct with *lɔ́* denoting goal, cf. (12b)

(24) ʔəwê lì   lɔ́   **phjâ**   lənìjò   **nāɴ**   **cóɴ**   ʔé

     3sɢ   go   ʟᴏᴄ   market today   any   ɴc[place] ɴᴇɢ

     'He did not go to any markets today.'

●The adjunct with *lɔ́* denoting source, cf. (13b)

(25) ʔəwê nꞮ̄ khòθá lɔ́ **khāɴməɲā** lənìjò **nāɴ cóɴ** ʔé

    3sɢ get mango ʟᴏᴄ foreign.country today any ɴᴄ[place] ɴᴇɢ

    'He did not get mangos from any countries today.'

In this way, NC phrases with *nāɴ* can quantify various noun phrases. In this respect, NC phrases with *nāɴ* significantly differ from normal NC phrases. Recall that normal NC phrases in the position of adverbial elements can only quantify the subject, direct object, indirect object, and adjunct denoting a goal. It is still unclear whether NC phrases with *nāɴ* can quantify every noun phrase in the same clause; however, the range of noun phrases that NC phrases with *nāɴ* can quantify is evidently wider than that of noun phrases that floated normal NC phrases can quantify.

Kato (2004: 119–121) noted that NC phrases can be floated from quite a wide range of noun phrases in a clause. This claim was based on the fact that NC phrases with *nāɴ* can quantify many types of noun phrase, as I discussed above. However, since NC phrases with *nāɴ* only appear in the position of adverbial elements, they have nothing to do with the phenomenon of quantifier float. Thus, one cannot discuss NC phrases with *nāɴ* in terms of quantifier float; it is the normal NC phrases that can be discussed from this viewpoint. Since floated normal NC phrases can only quantify the subject, direct object, indirect object, and adjunct denoting a goal, Kato's claim that NC phrases can be floated from quite a wide range of noun phrases may be misleading.

4. Conclusion

In this report, I referred to the phenomenon in which NC phrases inside noun phrases can move to the position of adverbial elements in Pwo Karen as 'quantifier float' and examined what kinds of noun phrase assume this phenomenon. As a result, it was observed that NC phrases can be floated from the subject, direct object, indirect object, and adjunct denoting a goal. In other words, normal NC phrases in the position

of adverbial elements can only quantify the subject, direct object, indirect object, and adjunct denoting a goal. I also examined the behavior of NC phrases with the negative polarity item *nāɴ*. NC phrases with *nāɴ* do not "float", but they are similar to normal NC phrases in that they occur in the position of adverbial elements and quantify noun phrases. The result of the comparison was that NC phrases with *nāɴ* can quantify a wider range of noun phrases than can floated normal NC phrases. The table in (26) shows the difference in the ranges of noun phrases that floated normal NC phrases and NC phrases with *nāɴ* can quantify.

(26) **Noun phrases that NC phrases in the position of adverbial elements can quantify**

	Subjects and objects	Adjuncts
Normal NC phrases	Yes	No, with the exclusion of the goal noun-phrase
NC phrases with *nāɴ*	Yes	Yes

In addition to normal NC phrases and NC phrases with *nāɴ*, the other forms *lə-NC-NC* 'some ~' (*lə* is a numeral meaning 'one') and *kò NC dè* 'every ~' also function as elements that can quantify noun phrases. Both of them can appear either inside noun phrases or in the position of adverbial elements, the same as normal NC phrases. See examples (27) and (28):

(27) a. **təwâphjā   lə-ɣà-ɣà**   ɣɛ̂   lɔ́   jò
       student   one-NC[human]-NC[human] come LOC here
       'Some student came here.'

  b. **təwâphjā** ɣɛ̂   lɔ́   jò   **lə-ɣà-ɣà**
       student   come   LOC here one-NC[human]-NC[human]
       'Some student came here.'

(28) a. **təwâphjā** **kò** **ɣà** **dè** ɣɛ̂ lɔ́ jò

student every NC[human] every come LOC here

'Every student came here.'

   b. **təwâphjā** ɣɛ̂ lɔ́ jò **kò** **ɣà** **dè**

student come LOC here every NC[human] every

'Every student came here.'

My observations in the research so far suggest that the kinds of noun phrase that the floated *lə*-NC-NC and *kò* NC *dè* can quantify are the same as those that floated normal NC phrases can quantify, i.e., the subject, direct object, indirect object, and adjuncts denoting a goal. In the future, I would like to examine in more detail the kinds of noun phrase that can be quantified by floated NC phrases including these forms.

Abbreviations

IM	intended meaning	NC[tool]	NC for a tool
LOC	locative marker	NEG	negative marker
NC	numeral classifier	PL	plural
NC[auto]	auto-classifier	SG	singular
NC[animal]	NC for an animal	TOP	topic marker
NC[flat]	NC for a flat thing	1	first person
NC[human]	NC for a human	2	second person
NC[long]	NC for a long thing	3	third person
NC[place]	NC for a place		

Transcription

   The transcription used in this report is phonemic. Consonant phonemes are /p, θ [θ~t̪θ~t̪], t, c [tɕ], k, ʔ, ph [pʰ], th [tʰ], ch [tɕʰ], kh [kʰ], b [ɓ], d [ɗ~ʔd], ɕ, x, h, ɣ, ʁ, m, n, ɲ, ŋ, ɴ, w, j, l, r [r~ɾ~ɻ]/. Rhymes are /i [ʒi], ɨ, ɯ [ɯ~ɤ̆ɯ], i̠ [ɪ], ʊ, e, ə, o, ɛ, a, ɔ, ai,

aʊ, ən, aɴ [ãɔɴ], oɴ, eiɴ [eiɴ~ei], əɯɴ [əɯɴ~əɯ], oʊɴ [oʊɴ~oʊ], aiɴ/. There are four tones: /á/ [55], /ā/ [33~334], /à/ [11], /â/ [51]. Pwo Karen has atonic syllables, which can occur in all positions except the utterance final. The only rhyme that can occur in atonic syllables is /ə/, and atonic syllables are transcribed with no tone marking.

I used to transcribe the vowel phoneme /i̱/ [ɪ] as /ɪ/. The symbol /ɪ/ is difficult to distinguish from /i/ when they are written with a tone sign. Compare, for example, /i̇/ and /í/. Moreover, /i̇/ and /í/ are hard to distinguish from each other in some IPA fonts in italics. Therefore, I use /i̱/ instead of /ɪ/ in this report.

Acknowledgments

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