

The Structure of the Ponapean Language

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1. Introduction

This paper describes the basic linguistic structure of the Ponapean (its alternate name is Pohnpeian) language.¹ Ponapean belongs to the Austronesian language family, which is possibly the largest language family in the world (Clark 1996; Katzner 2002; Crowley 2009, among others). Ethnologue (2009) informs that Ponapean is spoken in the State of Ponape (or Pohnpei) in the Federated States of Micronesia (the FSM hereafter).² In addition, Johnstone and Mandryk (2001) reported that the population of Ponapean speakers is approximately 29,000.

According to the information provided by the FSM government³, historically, the Portuguese arrived in the Yap and Ulithi Islands in the current FSM in the beginning of the 16th century in search of the Spice Islands (in Indonesia). After that, several countries, such as Spain, Germany, and Japan, administrated the Pacific insular areas until World War II ended. Later, the United Nations (the UN hereafter) created the Trust Territory of the Pacific Islands (the TTPI hereafter) in 1947. Ponape, Truk, Yap, Palau, the Marshall Islands, and the Northern Mariana Islands together constituted the TTPI. The United States (the US hereafter) accepted the role of Trustee of this territory. The TTPI remained under the civil administration of the US Navy Department until 1951. In 1979, the US

recognized the establishment of the FSM national and state governments upon implementation of the FSM Constitution.

Currently, there are several native languages used in the FMS, such as Ponapean, Yapese, Ulithian, Woleaian, Chuukese, Kosraean, and Nukuoro. Rehg (1999 personal communication) made a comment such that various aspects of the effect of the US administration still remained although the FSM was recognized as an independent nation by the UN. According to Rehg (2006), English language is currently considered as the official language and lingua franca of the nation. Rehg (1998) also reported that far more Ponapean people have become able to speak English in the State of Ponape, and not at just a minimal level, but fluently, and with confidence, while Ponapean language is less used, especially by children. Regarding this point of view, Rehg also suggests that the language is currently in danger of extinction. Rehg (personal communication 1999) mentioned that the Government of the Ponape State started making an effort to preserve Ponapean since the native language is an important cultural inheritance or asset for the people in the state. He added that schools in the Ponape State currently offer some Ponapean language classes to preserve the language in the society.

The purpose of this paper is to provide various kinds of data of the endangered Ponapean language. The data in this paper was originally collected in the course of Linguistics 630, entitled “Field Methods,” at the University of Hawaii at Manoa in 1999. I personally did not have an opportunity to formally summarize it within a paper although we collected a large amount of data and learned many important techniques regarding the data collection of this natural language. Moreover, the language still has not been deeply researched yet, and I believe that the data obtained from a native speaker of the language is very valuable for various kinds

of research in linguistics. Therefore, this paper attempts to reanalyze and recapitulate the Ponapean data as an important record.

The data given in this paper is based on the class discussion in the course of Field Method and this paper will illustrate the basic linguistic structure of the Ponapean language.⁴ First, Section 2.1 will show the phoneme inventories and some phonological characteristics of this language. In addition, the relations between the phonemes and the orthographical system of Ponapean will be discussed in Section 2.2. Next, Section 3 will present the morphological structure of the language. After that, the syntactic properties of Ponapean will be described in Section 4. Next, several unsolved questions on the data analysis will be pointed out in Section 5, and finally, Section 6 will give the conclusion of this paper.

2. Phonological Structure and Orthographical System

2.1 Phonological Structure

Utilizing the list of the Swadesh 200-word basic vocabulary, we attempted to identify phones and phonemes in Ponapean. Some of the examples of the phonetic descriptions are illustrated in (1):

- | | | | | | | |
|-----|----|----------|-------------------------------|----|---------|---|
| (1) | a. | hand | [pɛ:] | f. | skin | [ki:l] |
| | b. | left | [pæli səkɔ:yək ¹] | g. | to come | [ko:to] |
| | c. | right | [pæli kɔ:yək ¹] | h. | to turn | [wət] |
| | d. | leg/foot | [ne] | i. | to swim | [p ^h ɛp ¹] |
| | e. | to walk | [aʔlu] | j. | dirty | [p ^w iər p ^w iər] |

Based on the observations, we assumed that there are 14 phonemes for consonants and 7 phonemes for vowels in this language as illustrated in (2). (Note that American English generally has 26 consonants and 12 vowels (Stewart and Vaillette (2001), and there are 25 consonants and 5 vowels in common Japanese (Koizumi 1993)).

(2) **Consonants and vowels in Ponapean**

Consonants				Vowels	
p	p ^w	t	T	i	u
			s ^j	e	o
m	m ^w	n		ɛ	ɔ
		l	ŋ		
		ɾ		a	
w			y		

Moreover, some phonological rules are found within the data as listed in

(3):

(3) **Phonological Rules:**

- a. $\begin{pmatrix} -\text{syn} \\ +\text{son} \\ +\text{cont} \end{pmatrix} \rightarrow [-\text{voiced}] / _ \#$
 e.g. /kowru:ɾ/ → [kowru:ɾ̥] ‘to laugh’
- b. $\begin{pmatrix} -\text{syn} \\ -\text{son} \\ -\text{cont} \end{pmatrix} \rightarrow [+ \text{released}] / _ \#$
 e.g. /mi:k/ → [mi:k^l] ‘to suck’
- c. [+nasal] → [+syl] / #_ [-syl]
 e.g. /nTa/ → [ŋTa] ‘blood’
- d. $\begin{pmatrix} +\text{nasal} \\ +\text{dental} \end{pmatrix} \rightarrow [-\text{dental}] / _ \begin{pmatrix} +\text{syl} \\ +\text{back} \end{pmatrix}$
 e.g. /no:ŋo/ → [no:no] ‘mother’
- e. $\begin{pmatrix} +\text{syl} \\ \alpha \text{ back} \end{pmatrix} \rightarrow \begin{pmatrix} +\text{syl} \\ \alpha \text{ back} \end{pmatrix} / _ \begin{pmatrix} -\text{syl} \\ \alpha \text{ back} \end{pmatrix}$
 e.g. /lop/ → [lɒp] ‘to cut’
 e.g. /keŋ/ → [kəŋ] ‘sharp’

2.2 Orthographical Structure

It is important to mention that Ponapean does not have its own original orthographical system. However, the alphabetical writing system was adopted

to describe the language. We examined letters which are used in Ponapean texts, and we found that the following alphabetical letters are currently utilized:

(4) **The list of letters:** d, g, h, k, l, m, n, p, r, s, t, w, y, a, e, i, o, u

When we compare the phonemes and the orthographical system, some phonemes and letters seem to correspond to each other. However, there are several cases where other phonemes and letters are not matched one to one. This situation is natural in some ways because the sounds in this language have adopted corresponding alphabetical letters in order to demonstrate their similar pronunciation to sounds in English. For instance, both the phonemes /p^w/ and /m^w/ do not occur with single corresponding letters. Instead, they occur with letters *pw* and *mw*, respectively. In addition, two (or maybe more) phonemes seem to correspond to a single letter, such as the phonemes /e/ and /ɛ/ versus the letter *e*; and the phonemes /o/ and /ɔ/ versus the letter *o*. Moreover and interestingly, vowel lengthening is triggered by expressing the letter *h*. In sum, the following list shows the assumption of how the phonemes and letters generally correspond to each other.

(5) **The relations between phonemes and letters**

Consonants and their corresponding letters

/p/	p
/p ^w /	pw
/t/	d
/T/	t
/k/	k
/s ^j /	s
/m/	m
/m ^w /	mw
/n/	n
/ŋ/	g

Vowels and their corresponding letters

/i (i:)/	i (ih)
/u (u:)/	u (uh)
/e (e:)/	e (eh)
/ɛ (ɛ:)/	e (eh)
/o (o:)/	o (oh)
/ɔ (ɔ:)/	o (oh)
/a (a:)/	a (ah)

/l/	l
/r̄/	r
/y/	y
/w/	w

Some orthographical examples with their phonetic descriptions are illustrated in (6):

- | | | | | | | | |
|--------|-------|---------|-----------|----|-------|-----------------------------------|----------------------|
| (6) a. | peh | [pɛ:] | ‘hand’ | d. | nta | [n̄Ta] | ‘blood’ |
| b. | kohdo | [ko:to] | ‘to come’ | e. | nda | [n̄ta] | ‘to say’ |
| c. | nohno | [no:no] | ‘mother’ | f. | pwoud | [p ^w o ^w t] | ‘husband/
spouse’ |

Note that the corresponding relations between sounds and alphabetical letters in Ponapean are actually more complex than those shown in (5). For instance, [ɔ:sʷ] ‘roof’ is represented as “oahs” and [pæli səkɔ:yək¹] ‘left’ is shown as “pali soakoahiek” in writing. Thus, we need further examinations with care to describe the relations between sounds and the writing system in this language.

3. Morphological Structures

We will focus on the morphology in Ponapean in this section. In order to analyze the morphological systems in Ponapean, we examined words in a written text in Ponapean. (From this section, I will adopt the writing system in Ponapean which we discussed in the previous section.) Specifically, this section will provide the information on possessive forms implying ‘my (something)’ and the numeral system.

3.1 Possessive Forms

The following observations are made with possessive forms illustrating ‘my (something).’ Interestingly, there are various ways to express someone’s possessions as summarized below:

- (7) The morpheme order with a possessive form (a bound morpheme /

a suffix) within a noun seems “a noun form plus a possessive morpheme.”

e.g. One word with the bound morpheme ei (or i) ‘my’ (a noun plus a suffix)

edei	‘my name’	kempoakepahi	‘my girl/boy (my dear friend)’
semei	‘my father’	owei (or ewei)	‘my mouth’
pehi	‘my hand’	sapwei (or sahpw)	‘my land’

- (8) A noun form with the bound morpheme ei ‘my’ occurs with another bound morpheme -n ‘of.’

piten moangei	‘my hair’
pwoaren mesei	‘my eyes’

- (9) There are single possessive expressions without the possessive morphemes ei or i ‘my.’

tih ‘my bone’

- (10) There is another way to express a possessive form. When a noun form (a free morpheme) occurs with a possessive form (a free morpheme), the morpheme order would be “a possessive form plus a noun form.”

e.g. two words with the free morpheme ei ‘my’ (a free morpheme plus a free morpheme)

ei pahpa	‘my father’	ei likou	‘my clothes’
ei sounpadahk	‘my teacher’	ei wehi	‘my country’
ei pwoud	‘my spouse’	ei ouraman	‘my dream’
ei serepein	‘my girlfriend’	ei limpoak	‘my love (concept)’
ei suht	‘my shoes’	ei mwohnlimpoak	‘my love (person)’

- (11) Besides ei or i, there are several other ways to express ‘my (something).’

a. With the free morpheme nei ‘my’

nei kidi	‘my dog’	nei kilahs	‘my glasses’
nei seri	‘my body’	nei kuloak	‘my watch’
nei pwutak	‘my son’	nei kehs	‘my fishing pole’
nei serepein	‘my daughter’		

- b. With the free morpheme dowei ‘my’
dowei sehr ‘my chair (the one which I am sitting)’
- c. With the free morpheme ahi ‘my’
ahi sehr ‘my hair (the one which one owns)’
ahi pahpa ‘my father (informal)’
- d. With the free morpheme werei ‘my’
werei sidohsa ‘my car’ **werei** wahr ‘my canoe’
werei weren nansapw ‘my car’ **werei** pwaisikel ‘my bicycle’
- e. With the free morpheme riei ‘my’
riei serepein ‘my sister’ **riei** putak ‘my brother’
- f. With the free morpheme imwei ‘my’
imwei ihmw ‘my house’
- g. With the free morpheme kenei ‘my’
kenei mwenge ‘my food’

Based on the data above, we can make the following observations:

- (12) a. A single word containing ei (or i) is used for something which has a close relationship to a person. (It is used for something which belongs to a person physically or psychologically.)
- b. Ei as a free morpheme seems to be used for something which a person owns with a close relationship. (We could call this as “the primary relationship.”)
- c. Nei seems to be used for the objects which belong to a person. (We could call this as “the secondary relationship.”)
- d. Werei seems to be used for something related to transportation.

Thus, there might be some hierarchy of the possessive forms according to how close they are to the speaker.

3.2 Numeral Systems

The primary hypotheses regarding the numeral system in Ponapean will be discussed in this section. First, the expressions for general numbers

are listed in (13):

(13) General numeral expressions

sero	‘zero’	siluh	‘three’	wenew	‘six’	duwau	‘nine’
ehu	‘one’	pahieu	‘four’	isuh	‘seven’	eisek	‘ten’
riau	‘two’	limau	‘five’	weleu	‘eight’		

epwiki	‘one hundred’	rar	‘one million’
kid	‘one thousand’	depw	‘ten million’
nen	‘ten thousand’	sapw	‘one hundred million’
lop	‘one hundred thousand’	lik	‘one billion’

Second, we found a difference between the forms ‘a (noun)’ and ‘one (noun).’ The former occurs accompanying the suffix -ieu and the latter occurs along with the free morpheme ehu ‘one.’ Some examples are shown in (14):

- (14) a. pwuhkieu ‘a book’ c. **ehu** pwuhk ‘one book’
b. usuhieu ‘a star’ d. usu **ehu** ‘one star’

Third, both the cardinal system and the ordinal system are used in Ponapean. The ordinal system is expressed along with the prefix ke- (or ka-) and this prefix attaches to numbers.

- (15) a. ehu pwuhk ‘one book’
pwuhk riau ‘two books’
pwuhk siluh ‘three books’
pwuhk pahieu ‘four books’
- b. pwuhk **keieu** ‘the first book’
pwuhk **keriau** ‘the second book’
pwuhk **kesiluh** ‘the third book’
pwuhk **kaphieu** ‘the fourth book’
- (16) a. wahr oapwoat ‘one canoe’
wahr rioapwoat ‘two canoes’
wahr silipwoat ‘three canoes’
wahr pahpwoat ‘four canoes’
- b. wahr **keiuo** ‘the first canoe’
wahr **kerioapwoato** ‘the second canoe’
wahr **kesilipwoato** ‘the third canoe’

wahr **kapahpwoato** ‘the fourth canoe’

Fourth, plural markers do not appear in Ponapean as we can observe in (15) and (16). (Compare with “book” versus “books” in English.) Instead, plurality can be described with some other morphemes, such as numbers attached to nouns, or with plural demonstrative expressions as shown in (17). In (17), the bound morpheme -ngk- is a plural marker.

- (17) a. pwuhk ‘book’
b. pwuhket ‘this book (by a speaker)’
pwuh**ngka**(t) ‘these book (by a speaker)’
c. pwuhko ‘that book (away from both a speaker and a listener)’
pwuhken ‘that book (by a listener)’
pwuh**ngkoa** ‘those books (away from both a speaker and a listener)’
pwuh**ngkan** ‘those books (by a listener)’

As we can see in (17), depending on the person who indicates the object, the suffixes are distinguished.

Fifth, classifiers generally appear with some nouns in numeral systems in some cases, either as free morphemes or bound morphemes.

- (18) With -pwoat ‘long object’ (The word nih implies ‘coconut.’)
nih **pwoat** ‘one coconut tree’
nih rio**apwoat** ‘two coconut trees’
nih silip**woat** ‘three coconut trees’

- (19) With -emen ‘animate’
emen ‘one man’
riemen ‘two men’
silimen ‘three men’

Sixth, there is no clear distinction between countable and uncountable nouns in Ponapean. Instead, classifiers imply properties or abstract features of each nominal object.

- (20) oapwoat pwoatol ‘(literally) one bottle’
oapwoat pihru ‘one beer’

We have observed several aspects regarding the morphological structures in Ponapean. In the data above, we can also realize that many words in Ponapean are actually borrowed from English. For instance, pwuhk means English ‘book’ and pihru implies English ‘beer.’ Also, it is said that some Japanese words are currently used since Ponape was under the administration of the Japanese government during World War II (Rehg, personal communication 1999). Thus, we can see that Ponapean has been politically affected by other languages.

4. Syntactic Structure

4.1 Word Order

First, the basic word order in Ponapean is “Subject + Verb + Object” and it is the same as that in English.

- (21) a. I (kin) kang rais rahn koaros. ‘I eat rice every day.’
 I (habitually) eat rice day all
- b. I onop aio. ‘I studied yesterday.’
 I study yesterday

Second, degree words, such as udahn ‘very,’ precede adjectives.

- (22) E **udahn** kadek. ‘He is very kind.’
 he very kind

Third, wh-words can be placed either in the initial position of a sentence or the position in which the noun is replaced by a wh-word.

- (23) a. **Ia** edomw ‘What is your name?’
 what name-your
- b. Ke kohla **ia**? ‘Where did you go?’
 you go where
- c. **iawasa** ke kohlaie? ‘Where did you go?’
 where you go
- d. **Dahme** serio wadek ‘What did the child read?’
 what child read

Fourth, mahs ‘please/first’ is used after a verb.

- (24) a. Wahdo **mahs** ehu pwuhk. ‘Please bring one book.’
bring please one book
- b. Wahdo **mahs** pwuhk ehu. ‘First, bring one book.’
bring please/first book one

4.2 Tense and Aspect

First, the tense differences between past and present do not appear within verb forms. Instead, the tense distinction appears with other expressions, such as time expressions like ‘yesterday’ and ‘today.’

- (25) a. I (**kin**) kang rais rahn koaros. ‘I eat rice every day.’
I (habitually) eat rice day all (=21a)
- b. I kang rais **aio**. ‘I ate rice yesterday.’
I eat rice yesterday

Second, progressive forms appear along with the reduplication of the verbs.

- (26) a. I kang rais aio. ‘I ate rice yesterday.’
I eat rice yesterday (=25b)
- b. I **kang-kang** rais aio. ‘I was eating rice
I eat-eat rice yesterday yesterday.’

Third, perfective forms are expressed with bound morphemes attached to the end of verbs.

- (27) a. I kang-**ehr** mwahmw. ‘I have eaten fish.’
I eat-up fish
- b. I kang-al-**ahr** mwahmw. ‘I have already eaten fish.’
I eat-completion-perfective fish

4.3 Syntactic Expressions and Other Related Issues

This section will explore some other syntactical issues. First, the difference between transitive and intransitive expressions appear with certain bound

morphemes, such as iki, and ada.

- (28) a. I onop aio. 'I studied yesterday.'
I study yesterday
- b. I onop**iki** linguistiks aio. 'I studied linguistics
I study linguistics yesterday yesterday.'
- (29) a. I nting aio. 'I wrote yesterday.'
I write yesterday
- b. I nting**ada** kisin likou kei aio. 'I wrote letters yesterday.'
I write letter plural yesterday

Second, sohte and kaidehk are used as negative forms.

- (30) a. I **sohte** kin kang mwahmw. 'I do not habitually eat
I not habitually eat fish fish.'
- b. I **sohte** kak pap. 'I cannot swim.'
I not can swim
- c. Ih **kaidehk** sounpadahkmen. 'He is not a teacher.'
he not teacher

Third, causative morphemes are used as prefixes, and they attach to the beginning of verbs:

- (31) I **ka**-nekel-ahr nei doarepwei hu 'I have finally finished my
I cause-finish-perfective my paper term paper.'

Fourth, double object constructions exist. Two objects are placed after verbs:

- (32) I kihong Sohn pwaukieu. 'I give John a book.'
I give-to John a-book

Fifth, command forms are used with or without a subject:

- (33) a. Ked deh kohla. 'Do not go.'
you not go
- b. Dehr kohla. 'Do not go.'
not go

Sixth, conjunctions do not appear when two adjectives are used in a single sentence:

- (34) E ahitikitik reirei ‘He is tall and skinny.’
 he tall skinny

Seventh, locative expressions occur in different ways. On one hand, they appear as prepositions in front of nouns. On the other hand, they occur within verb forms.

- (35) a. Pwuhk-o mihmi **pohn** tehpel-o. ‘The book is on the table.’
 book-det exist-at on table-det
- b. E lusila **pohn** kehlo. ‘He jumped over the fence.’
 he jump over fence
- c. E **aluhlahng** kehlo. ‘He walked toward the fence.’
 he walk-toward fence

Finally, in order to make yes/no questions, people change intonations of declarative sentences.

- (36) a. Serio wedi pwuhk. ‘Did the child read a book.’
 child read book
- b. Serio wedi pwuhk? ‘The child read a book?’
 child read book

5. Further Research Questions

Various kinds of data were represented so far. However, several analyses have not been completed yet. This section will point out some of the unsolved questions in the Ponapean data collection.

5.1 Phonology

Three unsolved questions will be shown in this section. First, there is a hypothetical phonological rule regarding centralizing some sounds:

- (37) [+labial] → [+centralize] / _ (+syl)
 (+round)
- e.g. /pok/ → [p̥ok] ‘to hit (with a stick)’

In this case, it is not clear whether “+labial” sounds refer to either a

consonant or a vowel, or both.

Second, there are several phones which cannot be described with allophonic rules. Some examples are illustrated in (38):

(38) a.	consonants	[pʲ]	[pʲa:pʲa]	‘father’
b.	vowels	[ɨ]	[pʲɨʔap]	‘to steal’
		[ɪ]	[pæɪɪ]	‘section’
		[ʌ]	[sʲʌŋ]	‘to cry’
		[æ]	[pæɪɪ]	‘section’
		[ɑ]	[ŋtɑ]	‘to say’

Third, it is difficult to determine if the vowel lengthening in Ponapean is triggered by certain phonological rules. There might be a possibility such that some of them are and some of them are not. Some examples are shown below:

(39) a.	[i]	[lopɪti]	‘section (of a land)’
	[i:]	[mi:kʰ]	‘to suck’
b.	[u]	[patuk]	‘to plant’
	[u:]	[Tu:kɛ]	‘(a wooden) stick’
c.	[e]	(no relevant data)	
	[e:]	[kape:t]	‘belly’
d.	[o]	[ron]	‘to hear’
	[o:]	[mʷo:ŋti]	‘to sit down’
e.	[ɛ]	[mɛʔr]	‘to sleep’
	[ɛ:]	[kapɛ:t]	‘someone to see’
f.	[ɔ]	[rɔŋ]	‘over cooked/burned’
	[ɔ:]	[ɔ:sʲ]	‘thatch/roof’
g.	[a]	[pʲa:pʲa]	‘father’
	[a:]	[a:tʰ]	‘name’

5.2 Morphology

This section will present three kinds of unsolved morphological problems. First, as we previously discussed in Section 3.1, the form ei ‘my’ is used

- b. lakapw pahn kemehnpeu 'Tomorrow will be cold.'
 tomorrow (will?) cold

Second, the word tohn is used with nouns to refer some conditions or status of nouns. However, the syntactic category of tohn is uncertain.

- (46) a. ngehi **tohn** sukuhlmen. 'I am a student.'
 I inhabitant student
- b. Kowe **tohn** sukuhlmen. 'You are a student.'
 you inhabitant student

There are several other puzzles regarding the linguistic structure of this language. In order to solve them, I need further assistance by native speakers of this language. I would like leave them as future research questions at this point.

6. Conclusion

This paper has described the basic linguistic structure of the Ponapean language spoken in the Federated States of Micronesia. Section 2 illustrated some phonological characteristics and the orthographical system in Ponapean. The morphological structures of the language were discussed in Section 3, and then, some syntactic properties of Ponapean were explained in Section 4. As Section 5 pointed out several unsolved research questions, I would like to attempt further investigation of this language.

Notes

1. I am grateful to Dr. Kenneth Rehg at the University of Hawaii at Manoa for giving me the great instruction and many important comments. Moreover, I thank Paul Crane at the Nagoya University of Foreign Studies for his editorial help with this paper. Needless to say, all the mistakes and shortcomings in this paper are mine.
2. Ethnologue provides "an encyclopedic reference work cataloging all of the world's 6,912 known living languages" on the Internet, in publication, and with computer software. See the following web site regarding Ethnologue for details: <http://www.>

ethnologue.com.

3. The information on the FSM and the Ponape State is cited from the following website: <http://www.fsmgov.org/info/culture.html>.

4. Although a large amount of data was collected in this course, the data presented in this paper is very limited, and this paper only provides the data which seems to be relevant to support the analysis.

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