

Aspects of the Kiribati grammar

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1 Introduction

Kiribati is a Micronesian language spoken by 120,000 people in the Republic of Kiribati. Kiribati is a small island state in the central Pacific Ocean and became a sovereign republic in 1979. Kiribati is situated astride the Equator and the International Date Line, and comprised of 33 islands of which 32 lying coral islands and one raised coral limestone, Banaba. The nation has a total land area of 811 square kilometer with an Exclusive Economic Zone (EEZ) of 3,441,810 square kilometers. The 33 islands of Kiribati are grouped into the Gilbert Islands, Phoenix Islands, and Line Islands with the capital island Tarawa, located in the Gilbert group (Figure 1).

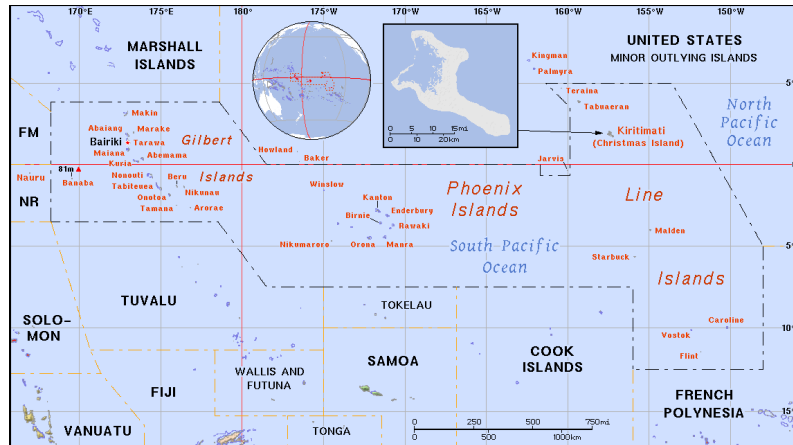


Figure 1. Map of Kiribati (public domain)

Kiribati resources include a grammar (Cowell 1951) and a grammar guidebook written in Kiribati (Ministry of Education of Kiribati (n.d.)). A language learning material was produced by the Peace Corps (Trussel 1979), and a dictionary (Oliva 1971) also exists. Additional work on Kiribati includes analysis of stress patterns (Blevins et al. (1999) and investigation of geminate nasals (Sato 2009a, b, 2011).

This paper reports on various aspects of Kiribati grammar based on the findings during sessions with the second author, who served as a consultant for the Kiribati language in the field method course at the International Christian University in spring 2018, while he was pursuing a higher degree in Japan. He is a native speaker of Kiribati in his 40's who uses Kiribati in all domains of his life. The sessions with the consultant were conducted after investigating words using the Swadesh list in order to develop better understanding of the grammar of Kiribati.

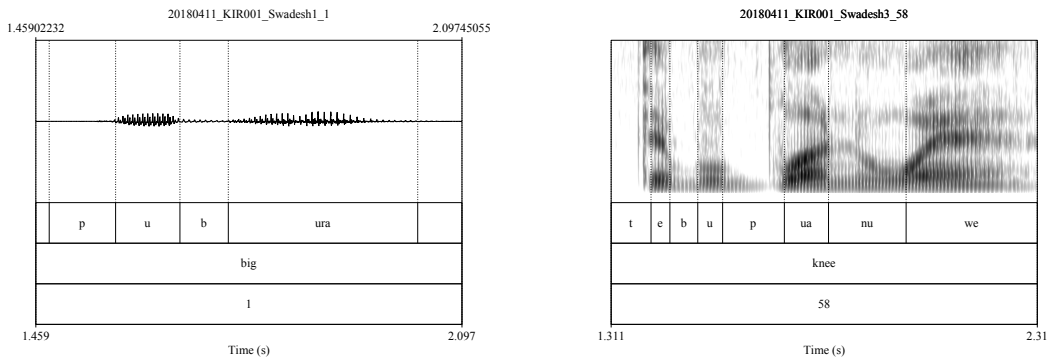
This squib is structured as follows. First, the phonetics part reports acoustic findings of consonants, vowels and stress of Kiribati. In the phonology of Kiribati section 3, syllable structures as well as previously underreported phonological alternations are presented. The morphology of section 4 focuses on numbers, prepositions and plural formation. Aspects of syntax are reported in section 5 where the basic word order and questions as well as the DP structure are investigated.

2 Kiribati Phonetics

2.1 Consonants The elicitation of the Kiribati Swadesh list resulted in discussion of the following aspects of Kiribati; (a) the status of the spelling ‘b’, which is often produced as a voiceless labial plosive [p], (b) a weak glottal fricative before vowel initial words, and (c) fricativization of /k/. Preliminary observations concerning these four aspects of Kiribati consonants are introduced in this section.

In the Kiribati orthography, ‘t’, ‘k’, ‘b’ are the plosives. One unique aspect of the plosive series in Kiribati is the absence of ‘p’. The absence of ‘p’ is uncommon but not rare as Arabic doesn’t have a /p/ either (Shariq 2015: 148). Recordings of words with the spelling ‘b’, however, reveal that the phonetics of the ‘b’ symbol is not simply a voiced sound. Two examples *bubura* ‘big’ and *te bubuanuwe* ‘the knee’ demonstrate that the Kiribati speaker does not always produce a phonetically voiced labial plosive. The initial ‘b’ of *bubura* ‘big’ and the word-initial ‘b’ of the second word in *te bubuanuwe* ‘the knee’ are both closer to a phonetic [p] sound. In Figure 2, the absence of voicing in the waveform in *bubura* ‘big’ and the discontinuation of the voicing bar in *te bubuanuwe* ‘the knee’ suggest that both sounds are closer to a voiceless plosive. In the intervocalic position, the ‘b’s are produced as voiced [b], as shown in the waveform as well as the spectrogram.

- (1) Examples with ‘b’
 [pubura] *bubura* ‘big’
 [te bupuanuwe] *te bubuanuwe* ‘the knee’



a. [pubura] ‘big’
 b. [te bupuanuwe] ‘the knee’
 Figure 2. Two realizations of the labial plosive

Vowel-initial words are sometimes produced with a glottal fricative [h] as in figure 3. The waveform preceding the word-initial vowel in /apue/ ‘warm’ demonstrate the presence of the weak [h], shown with a slight frication noise.

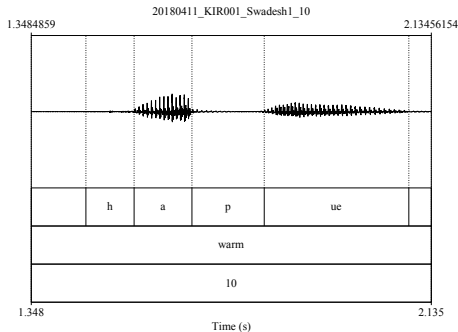


Figure 3. Waveform of the vowel-initial word [hapue] ‘warm’

Finally, we mention the contrast between the uvular fricative and the aspiration of the velar plosive, which has been previously unreported: The word [puaʁaʁa] ‘bad’ has a uvular fricative, which contrasts with

the word [puak^hak^ha] ‘rotten’ that has an aspirated velar plosive.

2.2 Vowels Kiribati spelling employs five different vowel symbols ‘a, e, i, o, u’. An examination of the Kiribati vowel system shows 7 monophthongs [i, e, a, o, u, ε, æ] (figure 4). Additionally, one diphthong [ao] was found in the speech of the second author. The diphthong is in free variation with the mid back round lax vowel [ɔ], which was mainly observed in connected speech.

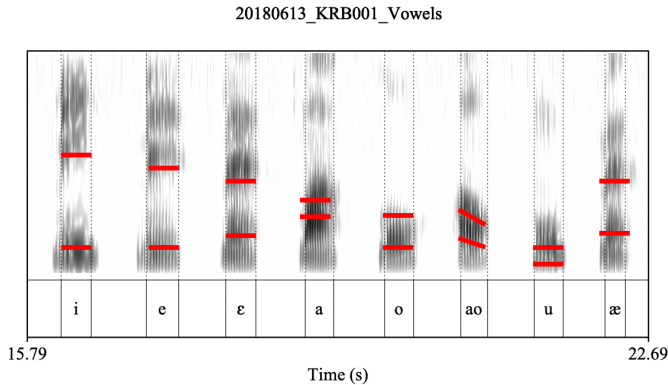


Figure 4. The first formant and second formants of vowels in Kiribati.

High vowels after a voiceless obstruent are optionally shortened. In figure 5a, the duration of the high vowel [i] is short after the [s], compared to that of the high vowel [i] in figure 5b. This duration difference could be interpreted as a difference between an epenthetic vowel in [sino] ‘snow’ and an underlying vowel in [sina] ‘mother’.

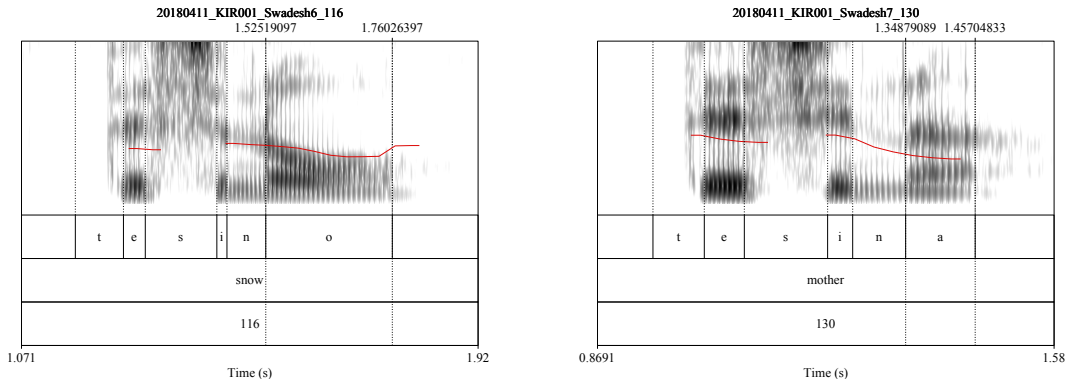


Figure 5a. short duration of a high vowel

b. longer duration of a high vowel

2.3 Stress Stress in Kiribati is presented in terms of increased intensity. Kiribati stress is quantity-sensitive: heavy syllables (with a coda consonant) are stressed. When there are sequences of light syllables, the first syllable is stressed. A stressed syllable has stronger intensity and this difference is shown in figure 6. When the final syllable of a word is heavy as in figure 6a, that syllable has the strongest intensity. In *kimwa* [k^hima] ‘sharp’ with two light syllables (figure 6b), the syllable with a stronger intensity is the first syllable, reflecting the location of word stress. In three light syllables, the stress comes on the first syllable as well. As shown in figure 6c, the first syllable has the strongest intensity.

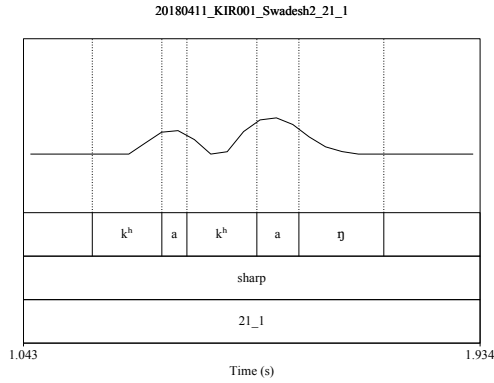
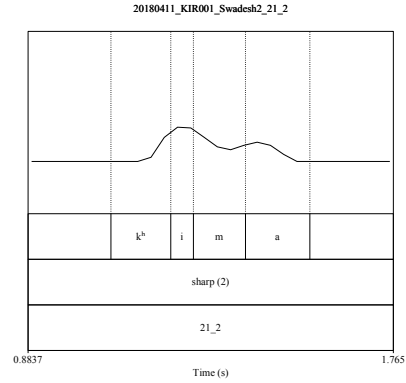
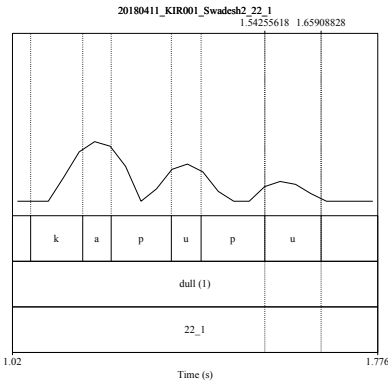


Figure 6a. a final heavy syllable



6b. two light syllables



6c. three light syllables

3 Kiribati Phonology

3.1 Syllable structure Kiribati allows various types of syllable structures: an onset is not required and a coda is not prohibited in monosyllabic words as shown in (2a). The nucleus of a syllable can be long with a long vowel or with two vowels. Closed syllables can also have a long vowel (2b). Disyllabic words in (2c) show that they can be formed with two open syllables or an open syllable with a heavy syllable (either a long vowel or a coda consonant).

(2) Examples of Kiribati syllables

a. Monosyllables

V	[i]	‘I’	[e]	‘s/he’
VC	[un]	‘to fight’	[am]	‘yours’
CV	[pa]	‘because’		
CVC	[mɛŋ]	‘animal, beast’ (STR007)		

b. Monosyllables with a long vowel

CV:	[mɛ:]	‘and’ (STR001)
CVV	[mɛo]	‘sour’ (STR003)
CV:C	[mɛ:ŋ]	‘long duration’ (STR008)

c. Disyllabic words

CVCV	[mɛmɛ]	‘shy’ (STR005)
CVCCV	[mɛmmɛ]	‘breast’ (STR009)
CV:CV	[mɛ:mɛ]	‘moonlight’ (STR004)
CVCV:	[mɛmɛ:]	‘chew food for babies’ (STR006)

3.2 Alternations Three types of phonological alternations are observed: [t~s] alternation, vowel merger and glide formation. The occurrence of [t] is prohibited before the high front vowel [i] in northern dialects of Kiribati, in which [t] alternates with [s]. Thus, ‘Kiribati’ is pronounced [kiribasi]. In southern Kiribati dialects, the alternation occurs before high vowels (both [i] and [u]).

The merger of monophthongs is also a feature of the phonological system of Kiribati. The sequence [a] and [e] are merged as [æ] in natural Kiribati speech. The sequence of [a] followed by the [o] results in [ɔ].

In the word-initial position, the high front vowel [i] is often realized with a palatal glide [j]; in careful speech what is [iai] is pronounced as [jai] in normal speech.

4 Morphology

4.1 Numbers In the Kiribati language, numbers are expressed through affixation. There is a default counting system, but when objects of counting change, different types of classifier-like elements are used to express what is being counted. These classifiers form the root of a numeral as shown in (3). The cardinal numeral is [ua], which is used by default in counting objects. When counting a person [mɛŋ] is used, while counting a tree requires the numeral [kai]. Transportation methods such as a canoe uses [wa:], and a stick-like object is counted with [ai]. These specific forms are only used for counting items between one and nine. For counting more than ten objects, this semantic-based system is not used.

(3) Number system in Kiribati

Meaning	a. cardinal [ua]	b. person [mɛŋ]	c. tree [kai]	d. transport [wa:]	e. stick [ai]	Number
one	tewana	temɛŋna	tekaina	tewa:na	teaina	te ... na
two	uoua	uomɛŋ	wakai	uowa:	wa:i	uo-
three	teneua	tenimɛŋ	tenikai	teniwa:	tennai	ten-
four	aua	amɛŋ	akai	awa:	a:i	a-
five	nimeua	ni:mɛŋ	nimekai	ni:mewa:	nime:i	nime-
six	onoua	onomɛŋ	onokai	onowa:	oneai	ono-
seven	isiua	isimɛŋ	isikai	isiwa:	isiai	isi-
eight	wanua	wanimɛŋ	wanikai	waniwa:	wannai	wan-
nine	ruaiua	ruamɛŋ	ruakai	ruawa:	rua:i	rua-
ten	tebwina	tenaun	tenaun	tenaun	tenaun	te-

Several morphophonological alternations are observed in the paradigm. The number one has glide formation of the high back vowel [u]: [tewana] (*[teuana]). The number nine shows vowel insertion between sequences of vowels: [ruaiua] (*[ruaua]). Counting a person is expressed with [mɛŋ]. When a number ends with a consonant, such as [ten-] ‘three’ or [wan-] ‘eight’, the [i] vowel is inserted: [tenimɛŋ] (*[tenmɛŋ]) The same pattern is shown in counting trees or transport: [tenikai] (*[tenkai]) ‘three trees’ and [teniwa:] (*[tenwa:]) ‘three transport’.

The vowel-initial count word [ai] shows multiple vowel alternations: (i) glide formation and merger in [wa:i] (*[uoai]) ‘two sticks’, (ii) nasal geminates in [tennai] (*[tenai]) ‘three sticks’, (iii) vowel merger to [a] in [a:i] (*[aai]) ‘four sticks’ and [rua:i] (*[ruaai]) ‘nine sticks’, and (iv) vowel deletion with compensatory lengthening [nime:i] (*[nimeai]) ‘five sticks’.

4.2 Prepositions Kiribati has prepositions that express the positional relationship of a noun. When the object of a preposition is a common noun, the noun must be accompanied by the definite article [te] as in (4).

(4) Prepositions in Kiribati

- a. e tekateka *i rarikin* te mataroa
 3sg sit at door ‘He sits at the door’
- b. are *inanon* te auti te mane
 (he) is inside house man ‘The man is inside the house’

- c. e maeka *n* te auti te mane
(he) live in house man 'The man lives in the house'
- d. e roko *mai* Tarawa
he come from Tarawa 'He comes from Tarawa'
- e. e nako *ma* ngai
he go and/with me 'He goes with me'
- f. i nako *nakon* te pootaki
I go to party 'I go to the party'

When the following three prepositions are used with a personal pronoun, the pronouns appear as an agreement suffix. The 1st person object pronoun is *ngai* 'me' (4e), but after the three prepositions [nako] 'to', [meiro] 'from', and [iro] 'by', it takes the suffix form [-u] as in (5a).

(5) Personal pronouns as an agreement

		to ... [nako]	from... [meiro]	by... [iro]	Agreeing morpheme
a.	1 sg	nakoju	meirou	irou	-u
b.	2 sg	nakoim	meiroum	iroum	-m
c.	3 sg	nakon	meirouna	irouna	-na
d.	1 pl	nakoira	meiroura	iroura	-ra
e.	2 pl	nakoimi	meiroumi	iroumi	-mi
f.	3 pl	nakoia	meirouja	irouja	-ja

4.3 Plural formation Plurals are formed by lengthening the penultimate syllable as in (6) (cf. Blevins et al. 1999 for further discussion). Plural-by-lengthening is a pattern limited to disyllabic words with two light syllables. Alternatively, plurals can be expressed using [taian], without lengthening.

(6) Penultimate lengthening

- a. [ato] 'liver' [a:to] / [taian ato] 'livers'
- b. [kai] 'a stick' [ka:i] / [taian kai] 'sticks'
- c. [nei] 'a lake' [ne:i] / [taian nei] 'lakes'

Kiribati doesn't have true diphthongs, and the lengthening pattern in plurals supports this description. In (6b) and (6c), the first vowel is lengthened in the plural form showing that the vowels form two syllables. As shown in (7), if the two vowels in (6b) and (6c) were to form a diphthong, we do not expect lengthening of the vowel to form plurals.

When a Kiribati word does not meet the condition of disyllabicity with two light syllables, plurals can only be formed by adding [taian] if a noun is countable. Examples are shown as follows: (7a) a monosyllabic word, (7b) disyllabic word with a heavy syllable, (7c) three light syllables, or (7d) more than three light syllables.

(7) The plural article [taian], when lengthening is not possible

- a. [te aŋ] 'a wind' [aŋ] '(the) winds' (monosyllabic)
- b. [te puro:] 'a heart' [taian puro:] '(the) hearts' (final heavy syllable)
- c. [te karawa] 'a sky' [karawa] '(the) skies' (three syllables)
- d. [te aomata] 'a human' [taian aomata] '(the) humans' (more than three syllables)

5 Syntax

5.1 Word order The basic word order of Kiribati is VOS. In (8), the verb is preceded by a subject agreement marker [e], which agrees with the subject *Meere* ‘(personal name)’.

(8) Declarative sentence (VOS)

e nori maninnara Meere
3SG see mosquitoes Meere ‘Meere sees mosquitoes’

Yes-No questions in Kiribati have three different patterns but they all have a sharp pitch rise in the final word. The question in (9a) has an identical word order as a declarative sentence in (8), but the intonation has a sharp pitch rise in the final word *Meere* ‘(personal name)’. The second method of building a yes-no question is adding the phrase *e koaua ae* ‘true’ in front of a declarative sentence as in (9b). Literally, the sentence in (9b) means ‘Is it true that Meere sees mosquitoes?’. The third pattern in (9c) adds *eng* ‘yes’ at the beginning. The question elements in (9b) and (9c) also raise the pitch, signaling a sentence as a question.

(9) Question ‘Does Meere see mosquitoes?’

- a. e nori maninnara Meere / e nori Meere maninnara
 3SG see mosquitoes Meere
- b. e koaua ae e nori maninnara Meere / e koaua ae e nori Meere maninnara
 true 3SG see mosquitoes Meere
- c. eng e nori maninnara. Meere / eng e nori Meere maninnara
 yes 3SG see mosquitoes Meere

5.2 Relative clause and agreement Relative clauses in Kiribati DP show agreement in numbers. The relative clause marker is *ae* when the head is a singular noun, and *aika* when the head is a plural. Coupled with the verbal agreement (*e* for singular subject and *a* for plural subject), the agreement pattern has an unexpected distribution, which will be illustrated with the phrase ‘two black mosquitoes’. In (11), agreement patterns that are allowed are marked ‘ok’ in the first column, while agreement patterns that are not allowed are marked with ‘no’.

(10) Example of a Kiribati DP

womeŋ (te) maninnara ae/aika e/a pupura
two SG mosquito REL.SG/REL.PL SBJ.SG/SBJ.PL black
‘two black mosquitoes’ (literally, ‘two mosquitoes that are black’)

(11) Agreement patterns

		Num ‘two’	N ‘mosquito(s)’	Rel ae ‘sg’/aika ‘pl’	Agr e ‘sg’/ a ‘pl’	Adj ‘black’
ok	a.	pl	pl	pl	pl	black
ok	b.	pl	(te sg)	sg	pl	black
ok	c.	pl	(te sg)	pl	pl	black
no	d.	pl	(te sg)	sg	sg	black
no	e.	pl	(te sg)	pl	sg	black

The pattern in (11a) shows plural agreement in all the elements inside the DP; for most languages this agreement pattern is the only one that is allowed in this type of construction. In (11b), the head noun and the relative marker are singular while the numeral and the subject agreement marker agree in terms of plurality. In (11c), only the head noun is singular, while the relative marker and the subject agreement are in the plural form, agreeing with the numeral ‘two’. Other mismatches in (11d) and (11e) are ungrammatical in Kiribati.

The generalization that emerges from (11a-c) is that when the numeral is plural, the subject agreement must be *a*, the plural form, but the head noun and the relative clause marker can optionally be used in a

singular form. DPs with a mismatch between the numeral ‘two’ and the subject agreement are not allowed in Kiribati.

5.3 Yes-no questions and adverbs In this section, the word order of elements in yes-no questions will be discussed with three types of adjuncts: (12a) a full PP, (12b) a temporal adverb, and (12c) a locative adverb. What was striking was that these adjuncts showed distributional restrictions when used in a full yes-no question.

(12) Three types of adjuncts

- a. *i nanon te ausi* ‘in the house’ (full prepositional phrase, full PP)
- b. *ni katoatai* ‘often’ (temporal adverb)
- c. *ikai* ‘here’ (locative adverb)

In (13-15), the (a) example is a declarative sentence corresponding to the yes-no question in (b-d).

(13) Full PP adjunct

- a. *e nori maninnara Meere i nanon te auti*
‘Meere sees mosquitoes in the house’ (YNQ020, declarative)
- b. *e nori maninnara Meere i nanon te auti?*
‘Does Meere see mosquitoes in the house?’ (YNQ021)
- c. *e nori maninnara i nanon te auti Meere?*
‘Does Meere see mosquitoes in the house?’ (YNQ022)
- d. **e nori i nanon te auti maninnara Meere?*
‘Does Meere see mosquitoes in the house?’ (YNQ023)

(14) temporal adjunct

- a. *e nori maninnara Meere ni katoatai.*
‘Meere often sees mosquitoes.’ (YNQ024)
- b. **e nori maninnara Meere ni katoatai?*
‘Does Meere often see mosquitoes? (intended)’ (YNQ027)
- c. *e nori maninnara ni katoatai Meere?*
‘Does Meere often see mosquitoes?’ (YNQ026)
- d. *e nori ni katoatai maninnara Meere?*
‘Does Meere often see mosquitoes?’ (YNQ025)

(15) locative adjunct

- a. *e nori maninnara Meere ikai.*
‘Meere sees mosquitoes here.’ (YNQ028)
- b. *e nori maninnara Meere ikai?*
‘Does Meere see mosquitoes here?’ (YNQ031)
- c. *e nori maninnara ikai Meere?*
‘Does Meere see mosquitoes here?’ (YNQ030)
- d. *e nori ikai maninnara Meere?*
‘Does Meere see mosquitoes here?’ (YNQ029)

A full PP only occurs after a verb phrase: either after the subject (13b) or before the subject (13c). When a full PP appears internal to a VP (V-A-OS), the resulting sentence is ungrammatical. A temporal adjunct occurs between the VP and the subject (14c) or inside a VP (14d). It cannot appear in the sentence-final position (14b). The locative adjunct has the most distribution because it can appear after a sentence (15b), between VP and subject (15c) as well as in a VP-internal position (15d). No adjuncts can appear in the sentence-initial position. The distribution of adjuncts in a yes-no question is summarized in (16).

(16) Distributional restrictions of the three adjuncts

full PP	time adverb	locative adv	
(13b) VOS-A	(14b) *VOS-B	(15b) VOS-C	after the subject
(13c) VO-A-S	(14c) VO-B-S	(15c) VO-C-S	between VP and Subject
(13d) *V-A-OS	(14d) V-B-OS	(15d) V-C-OS	VP internal
*A-VOS	*B-VOS	*C-VOS	Pre VP

(V: verb, O: object, S: subject, A: full PP, B: temporal, C: locative)

5.4 Wh-questions Content questions in Kiribati are formed by fronting the question word, either from the object position (17a) or the subject position (17b). The wh-word in a content question cannot remain in the situ position as shown in (17c).

(17) Content questions

- a. *tera ae e noria Meere?*
 what COMPL 3SG see Meere ‘What did Meere see?’ (WHQ001)
- b. *antai ae e nori maninnara?*
 who COMPL 3SG see mosquitoes ‘Who did see mosquitoes?’ (WHQ003)
- c. **e nora tera Meere?*
 3SG see what Meere (intended “What did Meere see?”)

6 Conclusion

This squib has presented aspects of Kiribati grammar that were observed during the elicitation sessions held from April to June 2018. The findings reported in this squib show that the grammar of Kiribati needs further investigation in order to understand how the grammar is formed. Along with two other papers in this volume, this squib provides new lines of inquiry that can be pursued in future research projects.

Acknowledgements

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