Linguistic Sketch of Hatohobeian and Sonsorolese:
a study of phonology and morphology

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1 Introduction

The South-West Islands are a group of small, remote islands to the South-West of the Republic of Palau, represented in the Palauan government as Sonsorol State, which includes the islands of Sonsorol (Dongosaro), Fanna, Merir and Pulo Anna, and Hatohobei State, formerly Tobi State, which includes Hatohobei and the for al intents and purposes uninhabited Helen Island. In some sense, they are outer islands of Palau, dependend upon the Republic politically and economically. But culturally and linguistically, they have very little in common with the rest of the Palauan archipelago. What separates them from Palau is first and foremost the great blue ocean: the island group of Sonsorol, Fanna, Merir and Pula Anna is located approximately 300 km away from Koror, Palau, and Hatohobei is at a distance of 484.1 kilometers. But equally important is that the Hatohobeians and Sonsorolese have a distinct cultural identity and linguistic heritage, closely related to that of the Carolinian islands, which include Woleaian, Ulithian, Saipan Carolinian and Chuukic.

Sonsorol and Hatohobei were at one time densely populated islands with a thriving indigenous culture. In 1909, a European visitor counted a population of 968 (Eilers, 1936, p. 55). Much has changed since then, and the islands of Sonsorol and Hatohobei now house a population of around 25 and 5 respectively. What started out as a temporary refuge when a typhoon had ravaged the island (personal communication, 2014), turned into a mass migartion of allmost all of the original South-West islands (approximately 300 in total) to the hamlet of Echang (pronounced E'ang) just outside of Koror, Palau's most urbanized island. Migration to Echang has brought with it exposure to globalisation, westernisation and urbanization. Those who live in Echang still remember a more traditional way of life, but now that traditional clothes, houses and earth ovens have disappeared, many of these memories are only accessible through their language, which is also the clearest marker of their separate identity as South-West islanders.

Culture and language influence each other so strongly, that any study of these two island languages must take into consideration this history of migration. For instance, word lists that are intended to elicit universally relevant words may fail to register some of the most important items in island vocabulary, such as coconut and canoe. But adaptations are not straight-forward when it is unclear how much the vocabulary has already transitioned away from traditional island life. For example, Sonsorolese and Hatohobeian have extensive networks of lexical items for fish species and fishing practices which are being recorded and archived by community members[1], but these words may not be in use any more. A second example of how deeply culture penetrates language is the South-West islander's approach to narrative. In an oral culture, information that can be used to determine family relationships or entitlement to land or inheritances is contained in stories, memorized by elders and passed down to following generations. Such stories, including the names for places, people or positions they contain, can take on an official status, similar to written contracts or testimonies in a literate society. As a result, historically important stories cannot always be

[1] See non-academic sources in section 2

shared with others, especially if the consultant fears them may not be able to give a complete and fully accurate account. As the habit of listening to story-telling is replaced by television watching, fewer and fewer speakers exist who have memories of stories at all, and a perfectly logical reluctance to share anything but complete and correct information suddenly becomes an unhappy factor in language death.

There is a more pressing reason, however, to keep sociocultural factors in mind while reading about the linguistics of this island community. Changes in lifestyle caused by migration to Palau have had important, undeniable effects on the way South-West Islanders use their languages. As a small minority within westernised Palauan society, South-West islanders have needed to develop a way of discussing many new concepts, such as their office jobs, the education of their children and the political institutions by which they are governed. This process of adaptation involved extensive borrowing of Palauan and English words. Meanwhile, a new generation of South-West Islanders is growing up who have never lived in or even been to the South-West Islands and who are living their lives in Palauan and English as they experience youth culture with Palauan classmates. It is not difficult to imagine how such developments would cause language change towards Palauan and English as well as marked intergenerational difference that are relevant to a synchronic study of Hatohobeian and Sonsorolese.

A second immediate effect of sociocultural developments is the mixing of the South-West Island dialects as a result of the South-West Island communities' living situations on Palau. Locals can recall a time when speakers from Merir could be recognised from their distinct intonation patterns, while Pulo Annese pronounced 'd' in words that contain 'f' in present-day Sonsorolese. But no speakers were found who speak distinct Merilese any more and the last remaining speaker of Pulo Annese now lives in the United States, so the islands surrounding Sonsorol can be said to share a single language (p.c. 2014). Hatohobeian and Sonsorol were once very distinct and even mutually unintelligible (p.c. 2014), but in the village Hatohobeians and Sonsorolese communicate regularly and effectively. At present the distinction between people of Hatohobeian and Sonsorolese descent is still a very important one linguistically and psychologically, but this may change.

Language contact in the Echang village is largely an effect of Sonsorolese on Hatohobeian, as the Sonsorolese are larger in number. Personal communication throughout this study revealed that Hatohobeian speakers of all ages drop regional words for 'common' ones, that is, words that are a part of both Hatohobeian and Sonsorolese vocabulary or that were historically Sonsorolese but that have been borrowed by Hatohobeians relatively recently. Hatohobeian speakers were often unable to say whether a word of doubtful origin was a loan from Sonsorolese or not. This may be because Hatohobeians have had so much exposure to Sonsorolese words that they no longer appear 'foreign'. As a result of this exposure, it is to be expected that phonetic, phonological and grammatical features of Sonsorolese will eventually seep into Hatohobeian, as is already happening in the speech of children. Young speakers appear to make virtually no distinction between the two languages, using then Hatohobeian forms, then Sonsorolese forms. This way of speaking by incorporates features of both languages is sometimes described as 'Echangese'.

The linguistic situation in Echang is an interesting case of language contact, but to learn anything of

the transformation Hatohobeian and Sonsorolese are undergoing one must first understand the grammar of these languages. Hatohobeian has not been the focus of linguistic research before, and there is only one available sketch of Sonsorolese with some notes on Hatohobeian (Capell, 1950). This report on an explorative study of Hatohobeian and Sonsorolese aims to fill this gap in Micronesian linguistics and to serve the members of the Echang community by informing revitalization efforts.

Because the similarities between Hatohobeian and Sonsorolese are striking and numerous and because they are only expected to increase, both dialects will be discussed together. Chapter 2 looks at relevant literature and places Hatohobeian and Sonsorelse into the context of the Chuukic continuum. Chapter 2 introduces the data that supports any further claims. Chapter 3 presents the phoneme inventory, while Chapter 4 and 5 discuss the morphology of the noun phrase (Chapter 4) and the verb phrase (Chapter 5). Some issues of orthography are discussed in Chapter 6.

The intention that motivated the data collection and that steers analysis is three-fold. The first aim is to give as much linguistic information as possible of two highly endangered languages. The second aim is to increase understanding of the morphophonology of the verb phrase by providing a complete set of paradigms for two languages that may contrast with other members of the Chuukic language family. This choice is motivated by the fact that the internal structure of the verb phrase is one of the more complex aspects of Chuukic grammar. The third aim is not academic in nature and is related to an application of this research to orthographical problems which the community is seeking solutions for. An overview of the phoneme inventory, the most important word categories, the most frequent function words and morphemes and the structure of the verb phrase should be very helpful to any community member involved with the creation of spelling rules or written works in Hatohobeian and Sonsorolese. It is also important to state, as a disclaimer, what this study is not intended to be. It is not possible for this research to produce an exhaustive treatment of Hatohobeian and Sonsorolese grammar. The writer thus apologizes for descriptions of the syntactic behaviour and semantic content of morphemes which may lack in detail or precision, but hopes that what ever information this study can provide will nonetheless contribute to the study of Micronesian languages and to the welfare of the communities who speak them.

2 Literature on the South-West Islands

Hatohobeian (HAT) and Sonsorelese (SON) form the western-most group within a group of languages often referred to as 'Chuukic' that spans to the east as far as Satawal. This dialect chain thus spans across a very large area, a testimony to the remarkable sea-faring capabilities which enabled Micronesians to migrate and to maintain relationships with far-away islands. Most Chuukic languages have not been studied in detail as individidual languages. For example, the series of Pacific and Asian Linguistics Institute's (PALI) language texts sponsered by the University of Hawai'i contained a number of grammars of Micronesian language, but only two of them for Chuukic languages (the Woleian Reference Grammar (Ho-min Sohn, 1975) and Yapese Reference Grammar (Jensen, 1977)). Factors that influence the amount of knowledge about Chuukic languages are the fact that the populations of speakers for each of these languages is small (e.g. ethnologue reports 45,900 inhabitants of Chuuk lagoon (http://www.ethnologue.com/language/chk, accessed 24 Jan 2014)), and the fact that governmental instutions in the region for even the larger languages are only in the first stages of developing a language policy (e.g. the Republic of Palau has recently begun efforts to standardize Palauan spelling (personal communication, 2013)).

Compared to their neighbours within the Chuukic continuum, Hatohobeian and Sonsorolese have received least attention from linguists. The one study dedicated solely to Sonsorolese and Hatohobeian (Tobian) grammar and vocabulary was conducted by Arthur Capell as part of the Coordinated Investigation of Micronesian Anthropology (CIMA). Capell does not give much information about his field work, except that 'in the course of the investigation CIMA field work was conducted in Guam and in islands of the Trust Territory in Micronesia (1947-49)' (Capell, 1951, p. 2). It appears then, that no linguist has traveled to these islands for research at any point, with the possible exception of Sachiko Oda, whose Syntax of Pulo Annian (1977) unfortunately could not be retrieved as a source for this study. Data from speakers from the South-West Islands was also collected by Edward Quackenbush (1968) to determine the degree of closeness between Chuukic languages. Quackenbush collected words which he used to establish vowel and consonant phonemes. Frederick Jackson (1983) made use of this information gathered by Quackenbush (1968) and Oda (1977) to draw conclusions about the relationships between Chuukic languages, the relationship between Chuukic and other Micronesian subgroups, and the relationship between present-day Chuukic and the proto-languages spoken many generations ago. A number of other sources contain only anecdotal linguistic information[2].

Because academic coverage of these languages is minimal, it is necessary to mention non-academic resources that this study has had to rely on. For Sonsorelese, this is the www.sonsorol.com website which is used by community members to post announcements and celebrate Sonsorolese history and culture, and which includes a brief discussion of language. For Hatohobeian, this is the website www.friendsoftobi.org, which is managed by Peter Black, anthropologist and expert of Hatohobeian culture and history and which

[2] For a more detailed overview of literature on the Chuukic continuum, see Ellis (2012)

contains a wealth of anthropologic information as well as a collection of word lists and narratives, all accompanied by audio fragments.

Although individual Chuukic languages have not been documented exhaustively in their own right, valauble linguistic work has been done studying the Chuukic language family as a whole. Research has found that the Chuukic family is characterized by a high degree of similarity in grammar, consistent reflections of proto-phonemes (Jackson, 1983) and a large number of shared cognates (Quackenbush, 1968). As noted in Quackenbush (1968), languages with the Chuukic continuum tend to be mutually intelligible in a chain-like fashion. This means that a given language A may be mutually intelligible with its neighbouring language B, but not with language C, even though speakers of language B and C understand each other. The outer islands of Yap are geographically closest to Sonsorolese and Hatohobeian, and thus most likely to be grammatically and phonologically similar. Furthermore, South-West Island folklore suggests that the first people to arrive in the South-West come from these eastern neighbours. Different origin tales do not agree on a single island, but they usually refer to one of the islands of Ulithi atoll (e.g. Mogmog), or to the island of Woleai. Figure 1 shows the geographical location of these islands.

Efforts have been made to determine the genetic status of Chuukic within Micronesian (Jackson, 1983). Using phonological, lexical, grammatical and lexicostatistical measure, it has been argues that Chuukic (formerly Trukic) is a subgroup within Micronesian, which is a family of Oceanic languages and which includes, besides Chuukic, the Ponapeic languages Ponapean, Mokilese and Pingelapese, and the separate languages Marshallese, Gilbertese and Kosraean, as depicted in figure 2. A further subgrouping of Chuukic is made possible by a procedure by Krishnamurti et al., which calculates which order of splits from a single proto-language into a current set of languages postulates the fewest 'repeat' applications of phonologic rules that are known to have occured[3]. This procedure, based on known phonological rules, yeilded the tree in Figure 3 as the most likely genetic structure. This tree contradicts origin stories that derive the people of Pulo Anna, Sonsorol and Hatohobei to the Ulithi area, but phonological, lexical and lexicostatistical evidence all confirm this closer relationship to Woleaian (Jackson, 1983, p. 232).

[3] For example, if language A and B devoice final vowels that were voiced in their shared proto-language, it is more parsimonous to suggest that language B inherited this feature from language A, than to suggest both languages developed this feature independently.

Figure 1. Boundaries of the Chuukic continuum (Quackenbush, 1968)

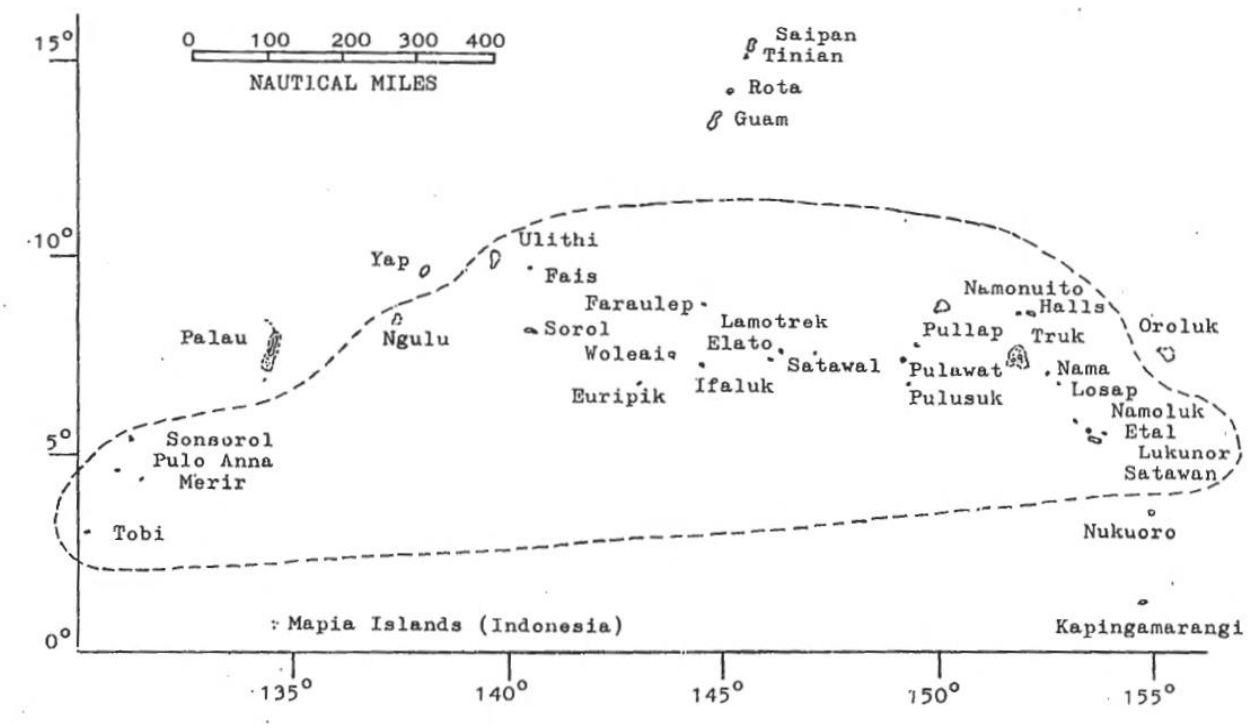

Figure 2. Possible historical relationships within Micronesian (Jackson, 1983, p. 433)

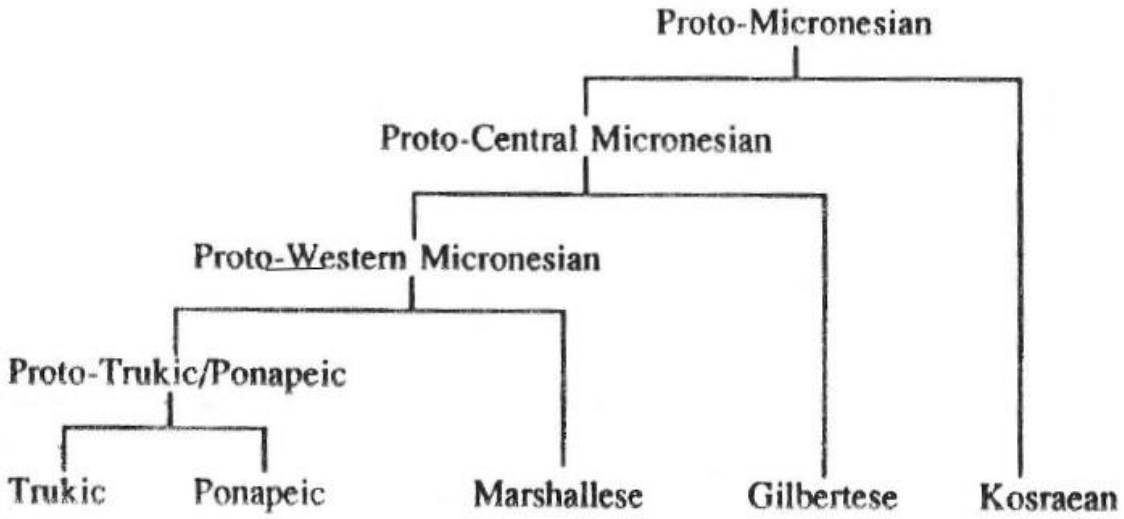

Figure 3. Genetic tree of Chuukic, based on diachronic phonological information (Jackson, 1983)

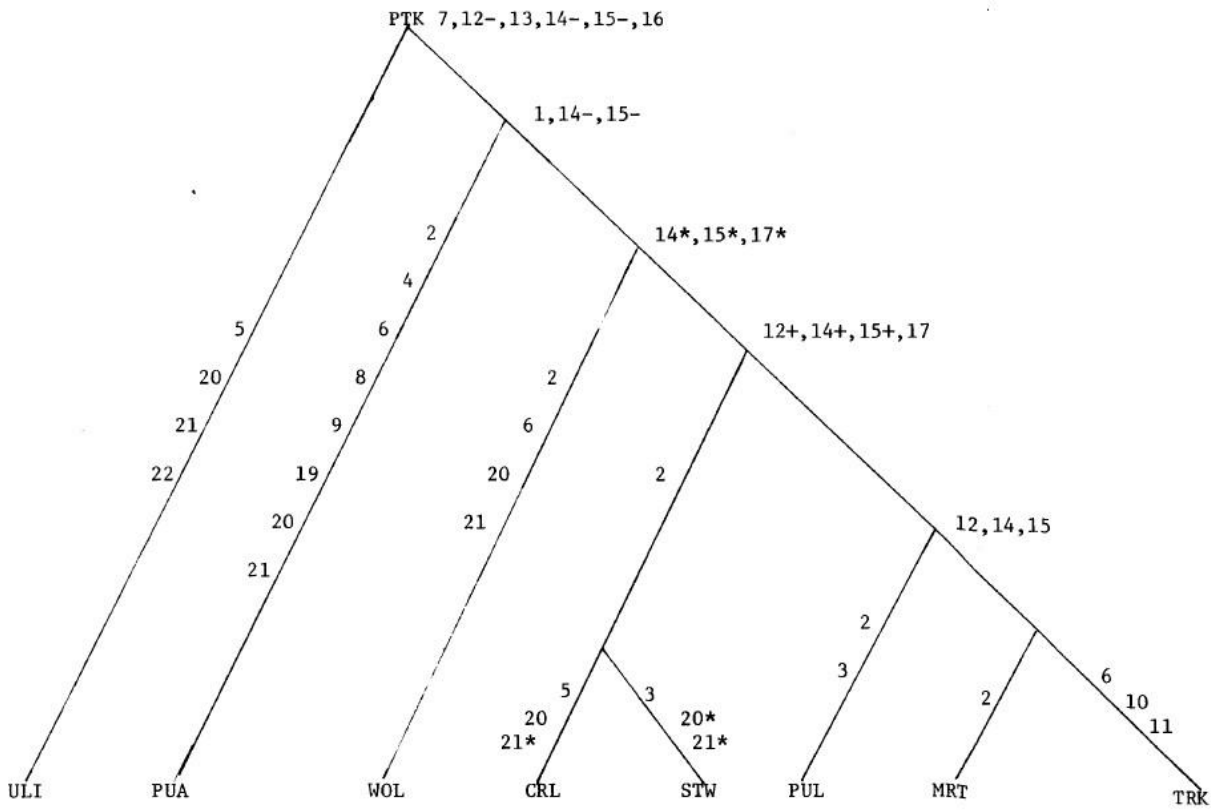

Figure 3 does not provide direct information about HAT and SON, but it does show that PUA underwent a number of phonological rules that Ulithian (ULI) and Woleaian (WOL) did not, which suggest that PUA and other South-Western dialects may have been isolated from other communities for an extensive period of time. Considering its remote location and lack of structural contact with other islands (e.g. these islands did not pay tribute to the kingdom of Yap), it is likely that SON and HAT, too, show signs of linguistic isolation. This would explain certain features to be discussed in the rest of this paper, such as the retention of final vowels and the development of the lateral velar consonant 'gl' in Sonsorolese described in Capell (1969), both of which are striking divergences from WOL and ULI. Lexical data confirms that, compared to the rest of the continuum, Sonsorolese and Hatohobeian have many more lexical items that are unique to their own language and have relatively few shared vocabulary items with Ulithian (Quackenbush, 1968, p. 83).

Even though there are many regular correspondences in grammatical constructs and phonemes, Chuukic languages that are similar grammatically tend to nonetheless sound very different due to variation in prosody and vocabulary (Ellis, 2012). And although HAT and SON are Chuukic languages, the close proximity of the islands of Palau is likely to have influenced these langauges as well. Several cognates between Palauan (PAL), Yapese, Sonsorolese and Hatohobeian have been found, as well as grammatical

similarities that point to some shared development. An example is the word for rainbow: PAL *rekim* SON *glahiim* (Sukiyama, 2004).

Hatohobeian and Sonsorolese, then, are to be understood as an isolated subgroup within the Chuukic language continuum, related to one another much more closely than to their neighbours to the east. They are likely to be grammaticaly similar, but phonologically distinct, and may have developed noteworthy innovations. This study hopes to help determine what these innovations might be.

While the aforementioned studies focused on the family relationships between Micronesian languages, other studies have been conducted which analyse particular aspects of a single language or which have compared the expression of a single feature across a number of Micronesian langauges (e.g. Rehg, 1984). A feature of particular interest to the study of Micronesian linguistics is the internal structure of the verb phrase. Generally speaking, Micronesian verb phrases are a combination of clitics that mark for person and number of the subject and/or object, free morphemes that are marked for tense and/or aspect, free adverbial morphemes and a verb root which may undergo a number of morpheme-forming processes to achieve transitivization or changes in aspect. The exact syntactic properties of each of these morphemes is a matter of debate, as are their semantics on the word level and the discourse level (Sugita, 1973). A lack of understanding of these morphemes has a negative impact on orthography, as locals may be unsure of when and where to write morpheme breaks. Therefore, this study will primarily describe the Hatohobeian and Sonsorolese verb phrase and follow up this description with an orthographic recommendation.

3 Data collection

Data content

The data for this study needed to be provide a basis for a sketch of the Hatohobeian and Sonsorolese Chuukic verb phrase (with a discussion on morphemes of the noun phrase being desirable but not a prerequisite) and needed to enable a study of phonology that was deep enough to solve pertinent orthographical issues. In order to meet the demand for the kind of phonetically detailed research, it was crucial to supplement existing written data on the languages (i.e. word lists (Quackenbush, 1968) and treatments of grammar (Capell, 1951) with high-quality audio material. The allotted time for making recordings was a three-month period from August until December in the year 2013. The location was the village of Echang near Koror, Palau's main island.

Recordings were made of a list of 200 basic vocabulary items, of all known paradigms of inflectional morphemes, of an additional selection of derivational morphemes, of the full set of demonstrative pro-forms and relational nouns, and finally of a limited set of narratives. The choice for a word list fell on the Austronesian Basic Vocabulary Database[4] which contains amongst others simple verbs, body part terms and

[4] http://language.psy.auckland.ac.nz/austronesian/

kinship terms. The collection of words was the first step in the data collection process because it required least language speaking abilities on the part of the researcher. A phonetic description was made of each word using a chart of the International Phonetic Alphabet[5].

In order to map the noun phrase and verb phrase,, relevant paradigms were elicited and then recorded to allow accurate representation of their phonetic forms, and to allow future studies of assimilations processes between morpheme and stem. Effort was made to create a natural environment in which paradigms could appear. For example, illustrations and role-playing schemes were used to elicit the uses of 'this house over here', 'this house over there', etcetera. Unfortunately, attempts to simulate spontaneous language use were very often met with confusion on the part of informants, who seemed to find it counter-intuitive to imagine a word or a phrase as spoken in a fictional context. As such, many of the recorded paradigms are either responses to English prompts or the outcome of conversations conducted in English.

Finally, recordings were made of a number of narratives, some of which were then transcribed with the aid of locals. These narratives did not have a fixed purpose. Rather, it was felt to be a matter of academic responsibility to make recordings of natural speech of a pair of languages that is, in effect, moribund or at least highly threatened. Furthermore, the difficulty encountered when attempting to elicit example sentences led to a lack of natural contexts for the morphemes that were the object of study. The small corpus of narratives turned out to fulfil a crucial role in allowing investigations into the use of certain morphemes in phrases. The collection of narratives was the last task that was undertaken during the three-month stay in Echang, as this task required a good report with informations, some of whom spoke little English. Some complications during the collection of narratives were encountered that involved cultural factors. It appeared to be very important to Hatohobeian and Sonsorolese speakers to avoid misrepresenting people or events by giving 'wrong' versions of a story. Informations would prefer not sharing a story over making a mistake and inviting criticism. This explains why the number of traditional stories and historical accounts that could be collected was somwhat lower and the number of informal anecdotes is somewhat higher than one would prefer for a database of a language that is rapidly losing traditions and the words associated with them.

The processing of the data involved the following steps: all the words and paradigms were added to a database in the software program called Flex. If a transcription had been made of a narrative, this narrative would be processed in ELAN and then added to the Flex corpus for searches. Metadata was kept in on OpenOffice database. All recordings were stored in the Kaipuleohone digital ethnographic archive of the University of Hawai'i[6].

A total of 23 informants were gathered who lived in the village and were on good terms with the locals who had invited the researcher into their community. Some informants were atypical of their community, including a young semi-lingual, a second language speaker originally from Yap, and a speaker known for combining Sonsorolese and Hatohobeian. Although these informants are not the norm, they are

[5] http://web.uvic.ca/ling/resources/ipa/charts/IPAlab/IPAlab.htm

[6] http://scholarspace.manoa.hawaii.edu/handle/10125/4250

representative of the diversity of the communities and of the state of flux that characterizes their language.

Table 3. Overview of informants

	HAT				**SON**			
Time spent	Education							
on island	Element./HSchool		College		Element./HSchool		College	
	M	F	M	F	M	F	M	F
0-2 years			1		1	1		1
3-10 years		1					2	
10+ years			1		1		1	
15+ years	1	1	1	3	2	2	2	

Table 3 is based upon what seemed to be most the best predictor of fluency, 'amount of time spent on own island'. People who had spent considerable time on the island of Hatohobei or Sonsorol were more likely to be older, were less likely to have attended a Palauan primary school, were more likely to be concerned with the future of the langauge, and were less likely to identify with Palauan or 'international' culture. All informants consented to being recorded and represented in this paper by signing a consent form.

4 Analysis: Phonology

Many important observations about Hatohobeian and Sonsorolese hinge on how these two languages reflect word-final vowels. At a certain time in history, Chuukic words must have all ended in vowels., but over time, many words in many dialects have shortened long vowels at the end of words and reduced short unstressed vowels, rendering them either voiceless or allowing them to disappear entirely. Sonsorolese reflects these word-final as voiceless vowels. Voiceless final vowels are part of the base form of a word in the native speaker's mind and they affect the pronunciation of the word, because the final consonant will show signs of co-articulation with this vowel. Memorizing the correct voiceless final vowel is crucial to correct pronunciation of Sonsorolese words, even though it may be very hard or practically impossible to determine the voiceless final vowel by ear. Hatohobeian, by contrast, has dropped unstressed final vowels in most words, with only very few words containing voiceless final vowels.

4.1 CV-Pattern

The few texts which discuss the morphophonology of Chuukic languages (Quackenbush, 1970; Quakenbush, 1968; Ellis, 2012) agree that the core vocabulary of all Chuukic languages shows a CV-type structure. It is even claimed that the particular syllable structure of one Chuukic languages applies to any other member of the continuum (Ellis, 2012, p. 133). The ABVD word list (Appendix A) and the word list collected by Quackenbush (1968) show that Sonsorolese and Hatohobeian differ from Saipan Carolinian (SpnCRL), a language spoken on Saipan between a mixed group of migrants from different Carolinian islands and of which the CV-pattern is well-established.

Table 3. Syllable structure of SpnCRL (Ellis, 2012) compared to HAT-SON

	SpnCRL	HAT		SON	
V:	i	i	sbj:1.sg	i	sbj:1.sg
VV:	ii				
CV:	ma	ma	coord.conn	ma	coord.conn
CVV:	maa	ngii	'tooth'	ngii	'tooth'
CCV:	mmasa	cca	'blood'	ssa	'blood'
CVC:	mat	yehamat	'person'	yaglemat	'person'
CVVC:	maat	yaang	'wind'	--	
CCVC:	mmat	ppör	'dirt, soil'	--	
CVCC:	makk	rapp	'big'	--	
VC:	aw	--		--	

VVC:	aaw	iih	'fish'	iih	'fish'
VCC:	aff	--		--	

Two differences between SpnCRL, HAT and SON are apparent. Firstly, of the three Sonsorolese is the strictest in allowing only CV-type syllables. This is the result of the retention of final vowels in SON: 'wind' is *yaangi*, 'dirt, soil' is *pöru* and 'big' is *rappa*. Although Hatohobeian seems to allow a wider variety of syllable types, all double consonants in Table 3 are geminate consonants and clusters of two different consonants occur only in borrowed words like *skuur* 'school'. Furthermore, consonants in the coda of isolated words are often 'reunited' with the final vowel that disappeared from their form when the word is pronounced in running speech before another word or before a suffix (e.g. HAT *iimw* 'house', *imwara* 'that house'). Although these re-appearing vowels represent the original vowel that used to be in word-final position, native speakers may not be certain of which vowel is supposed to appear, and so in many cases unwanted consonant clusters are broken up by schwa-like 'pauses', rather than a fully pronounced phonemic vowel.

A second difference between SpnCRL on the one hand and HAT-SON on the other hand, is the occurrence or lack thereof of VC, VVC and VCC syllables. In both HAT and SON, syllables with vowel onsets do, exist (e.g. HAT *iimw* 'house', SON *iimwa* 'house', HAT *iiy* sbj pronoun 3 sg, SON *iya* sbj pronoun 3.sg). However, two rules prevent such syllables from being anything other than VVC-type. One rule states that a consonant coda in a CVC or VC syllable will always be re-segmented as the onset of a new second syllable in running speech. So even though the HAT forms *itei* 'my name', *itomw* 'your name' and *itar* 'his name' have a CV-type stem *it*, in practice the final *t* forms new syllables with the possessive morphemes and the result is pronounced *i-tei*, *i-tomw*, *i-tar*. A second rule that prevents VC-type syllables is a type of compensation rule that lengthens vowels in words that are monosyllabic in Hatohobeian and bi-syllabic but with the second vowel being silent in Sonsorolese. Therefore, words that can be proven to have short vowels in the stem (e.g. HAT *sir* in *siresir* 'mother', *sirei* 'my mother', SON *tap* in *tapahi* 'to cut/hack wood tr.'), will be pronounced with a long vowel when elicited on their own (e.g. HAT *siir* 'mother', SON *taapa* 'to cut, hack'). It is possible that with a larger data set and a careful weeding out of the influence of these rules, one might be able to find underlying VC and VCC syllables in both HAT and SON.

4.2 Phonemics

The amount of data on Hatohobeian and Sonsorolese is not vast enough to provide a set of pure minimal pair that might clearly and exhaustively prove the validity of each candidate phoneme. However, given the occurrence of basic sounds in words, given conversations with native speakers, and given the available information about the phonological developments throughout the Chuukic continuum, it is most likely that Hatohobeian has 24 phonemes of which 7 vowels and 17 consonants, and that Sonsorolese has 28 phonemes of which 7 vowels and 21 consonants. Table 4 shows each phoneme, its pronunciation as symbolized using

the International Phonetic Alphabet and an example of a minimal pair that differs only in one formal aspect or a semi-minimal pair that reveal a difference in vowel quality but that also differ in another formal aspect. The number of each example word in the ABVD word list (Appendix A) is also given.

4.2.1 Vowels

Table 4. Vowel phonemes of Hatohobeian and Sonsorolese

Phoneme		Example		Contrasting example	
Orth.	IPA	ABVD	HAT/SON	ABVD	HAT/SON
i	ɪ ~ i	#63	*iit / iita* 'name'	#133	*üüt* / *üüta* 'rain'
u	u	#116	*bwuung / bwuungü* 'flower'	#38	*ngüüng / ngüüngü* 'chew'
		#92	*suuhi / duuhi* 'to stand'	#52	*süteh / dütehi* 'to open'
ü	ɨ ~ ʉ	#38	*ngüüng / ngüüngü* 'chew'	#116	*bwuung / bwuungü* 'flower'
e	ɛ	#188	*meta / meta* 'what'	#45	*matai* / *matai* 'my eye'
ö	ə	#66	*höhö- / höhö-* 'tie up, fasten'	#207	*hüra / hüra* 'know'
o	o	#169	*hotsou* / *hosou* 'rain cloud'	#77	*heiheh / heglihegli* 'scratch'
a	ɐ	#89	*hamwaatsu* / *hamwasu* 'grab'	#77	*heiheh / heglihegli* 'scratch'

The phonemes /i/ is a close front unrounded vowel like the 'ee' in 'fleece', but in its short form it is always less tense than IPA /i/ (HAT [si:ɾ] 'mother' [sɪresɪɾ] 'the/a mother'). The vowel /ü/ is also close and unrounded, but central, and resembles Japanese 'u'. Phonetically it lies in between [ɨ] and [ʉ], although in certain Sonsorolese words the vowel quality is closer to [ʏ] (e.g. #52 SON dü [θʏ:] 'stand'). The vowel /u/ is a close back rounded vowel like the 'oo' in 'goose'. In the diphthong comprised of /o/ + /u/, it is pronounced [ʊ] (#169 SON [xosoʊ] 'rain cloud'). The vowel /e/ is a open-mid front vowel like the 'e' in 'dress', but in the diphthong /e/ + /i/ it is pronounced [e] (SON [ɾiweisi̯] 'child'). The vowel /ö/ is a mid central vowel, pronounced like the 'a' in 'countable'. The vowel /o/ is a close-mid back vowel, similar to the 'o' in British English 'hot'. The vowel /a/ generally appears as an open central vowel like the 'a' in 'law', but shows complex allophonic variation that requires a closer look, which will be given after a discussion of /ö/.

Mid central vowel /ö/

Some elaboration is required on the description of the sound /ö/. This sound's status as a phoneme is difficult to prove. The literature on Chuukic languages, including on Woleaian (Sohn, 1984) and Pulo Annese (Oda, 1977) , suggest that Chuukic languages are likely to have a mid central vowel in their phonologies (written 'é' in Quackenbush (1968)). However, although the sound was encountered during the recording and transcriptions of words, there were indications that it might not be phonemic. For one, natives were very obviously unaware that they were producing a sound that was uncommon to native speakers of other languages (at least, uncommon in a stressed position). They also did not show any desire to spell the sound

as different from other vowels, and wrote and preceived the letter as 'o' (i.e.Orth HAT hoho-, Orth SON hoho- 'to tie up, fasten') and occasionally as 'a'. Moreover, it seems that Hatohobeian, and to a lesser extent Sonsorolese, regularly reduce vowels. It is therefore sometimes difficult to decide whether a schwa-like sound should be interpreted as an instance of phoneme /ö/ or a reduced /o/ in a word like #1 HAT *humwots* 'hand'. This is aggravated by the fact that locals spell both sounds with the same letter in most cases, and by the fact that inconsistencies in the spelling of nuclei is common, particularly for unstressed syllables. For all these reasons, it is worth considering whether the sound /ö/ is not in fact an allophone of another phoneme.

An examination of words containing /ö/ reveals that very many of them can be proven to have a final vowel 'ü' or 'u' in either the surface form or an underlying form, e.g. HAT *hatösü* / SON *hatödü* 'truly, true', HAT *söruw* / SON *doruuw* 'three', and HAT *söhu* / SON *döglu* 'to say'. Although these forms are spelled with a first vowel 'o', pronounced [ə] in the South-West, a look at Woleaian reveals that the form for 'to say' in that language is 'serú', and a look at the Proto-Chuukic numerals given in Jackson (1983) shows that the stem for 'three' in Proto-Chuuki was 'seru'. Inconsistencies and cases that cannot be solved this way do exist, of which *hatösü* / SON *hatödü* 'truly, true' is one, but the most likely explanation seems to be that /ö/ is not a contrastive phoneme, but a sound which developed from /e/'s that assimilated to close central and back vowels. Therefore, in the summary of vowels given in Figure 4 given below, 'ö' is given in parentheses to mark it as a contestable phoneme.

Low central vowel /a/

The vowel /a/ in Hatohobeian and Sonsorolese is a complex case. In most words, /a/ is an open central vowel like the 'a' in 'law'. However, in many words a written /a/ will be pronounced [æ], like the 'a' in 'trap', or [a], which is more frontal as well as tenser than the more common pronunciation [ɐ]. Compare for example:

ABVD	HAT		SON		ENG
#146	*farang*	[fɐɾɐŋ]	*faranga*	[fɐɾɐŋᵍ̊]	'ash'
#5	*feter*	[fætæɾ]	*fatare*	[fɐtɐɾɕ]	'to walk'
#45	*maat*	[maːt]	*maata*	[maːt̪ᵍ̊]	'eye'
#46b	*hakene*	[xakæn]	*kakanne*	[kækannɛ]	'to see'

Many cases which involve [a] and [aː] rather than [ɐ] involve open syllables and words of one syllable, but it is not certain what the exact relationships between these instances of low vowels is.

As far as the occurence of [æ] is concerned, it seems that nearly all such occurrences take place in the context of a low vowel being followed by either /i/ or /e/. Often this /i/ or /e/ is a final vowel that has disappeared in HAT, but has left a trace on the remaining nucleus:

ABVD	HAT	SON	ENG
#5	*feter*	*fatare*	'walk'
#81	*keng*	*kangi*	'sharp'
#75	*mes*	*maade*	'dead'

Evidence for this explanation of [æ] comes from Woleaian, for which a rule exists which states that /a/ is raised before /i/, /e/ and /a/ (Sohn, 1984). Based on this rule, [æ] might be represented better in IPA as [ɐ̟] and orthographically as 'ä'. However, the /a/-raising rule leaves many forms unexplained, as some /a/'s that appear before other /a/'s and before high vowels do not undergo raising: #91 SON *tagl**ä**hi* [tagˈæxi] 'open', but #70 SON *h**a**dihi* [haðihi̯] 'spear'. Others are pronounced with an open, low vowel quality in isolation, but undergo raising when used in a phrase or in a compound: #136 HAT *yaang* 'road', *raangi* 'sky' and *taati* 'ocean', which appear respectively in the combinations *wori yer* 'on the road', *weireng* 'heaven', *reteti* 'at sea'.

Part of the difficulty in assessing the systematicity behind alternations in [ɐ], [a], [æ] lies in the fact that the transcriptions may not be fully reliable. For one, no second researcher was available to compare transcriptions with. Secondly, the length and quality of a vowel is often difficult to asses because the vowels in Hatohobeian and, to a lesser degree, Sonsorolese words stay within a relative narrow range of variation. Therefore, the difference between /a/ and /ae/ and /e/ is subtle to begin with. Furthermore, co-articulation with surrounding consonants and amplification or weakening effects of stress seem to change the quality of /a/ in a way that resembles the effect of vowel harmony with following high vowels. Thus, more research is needed to establish the rules that transform underlying phoneme /a/ into its different surface forms. Because no contrastive pairs were found to suggest that [ɐ], [a], [æ] are not allophones of the same morpheme, the following summary of vowels only contains a single phoneme /a/.

Figure 4. Phonemic vowel diagram of HAT and SON

	Front	Central	Back
Close	i	ü	u
Mid	e	(ö)	o
Open		a	

On a final note, although vowels most commonly occur as short and in word-medial position, it seems that all these vowels except /ö/ can also appear in word-final position in SON, although the difference between /u/ and /ü/ in their voiceless forms is very difficult to hear. Secondly, all vowels also occur in long forms.

Finally, there exists a number of diphthongs, most obviously /au/, which is always pronounced [ɐʉ] (#37 HAT+SON *mwangaü* 'to eat'), /ei/ (#194 HAT+SON *feita* 'to do how') and /ou/ (#169 HAT [xot͡ʃoʊ] SON [xosoʊ] 'rain cloud'). Another diphthong that appears in the word list is 'ae' in #79 SON *iiglae* 'stick' and #170 SON *wangaet* or *ingaet* 'when', but no proto-forms for these words were found that could exclude the possibility that these forms are more accurately described as *iiglaye*, *wangayeta*, and *ingayeta*. The same applies to the 'eü'-like sounds in #163 HAT+SON *taiföü* 'new'(probably from *taifewü*), #141 HAT *nnöw* 'wet' (probably from *nnew*) and #189 HAT+SON *itöü* 'who'. In fact, superficially straightforward cases of 'au' could also be analysed as a VCV-sequence 'awü', based on Quackenbush' analysis of #37 HAT+SON *mwangaü* 'to eat' as *mwangawY*, in which 'Y' is a voiceless /ü/. This confirms Jackson's (1983, p. 221) observation that vowel clusters in Chuukic are influenced by complex vowel assimilation rules which do not fall within the scope of this study.

4.2.2 Consonants

The inventory of consonants is possibly the one linguistic aspect in which Hatohobeian and Sonsorolese are least similar. Hatohobeian has 17 consonants in total, of which 13 single phonemic consonants, and 4 geminates. The Sonsorolese phomenic inventory is larger, with a total of 22 consonants, of which 15 single sounds and 7 geminates. The fourteen sounds which appear in both languages with roughly the same phonetic qualities are given in Table 5 and discussed first, followed by a discussion of sounds unique to each language, which are shown in Table 6 and Table 7.

Table 5. Consonants that appear in both Hatohobeian and Sonsorolese

Phoneme		**Example**		**Contrasting example**	
Orth	**IPA**	**ABVD**	**HAT/SON**	**ABVD**	**HAT/SON**
p	**p**	#96	*piris / pirisi* 'dog'	#59	*siresir / diredire* 'mother'
		#153	*rap / tarappara* 'big'	#128	*raangi / raangi* 'sky'
pp	**p:**	#140	*ppere / ppare* 'to dry'	(#100)	*paur / paur* '(his) hand'
bw	**bʸ**	#116	*bwuung / bwuungü* 'flower'	#38	*ngüüng / ngüüngü* 'to chew'
		#4	*huubw / huubwe* 'leg'	#137b	*uuhu / uuhu* 'to blow with the mouth'
m	**m**	(#97)	*marü / maarü* 'animal'	#54	*mwar / mwaare* 'man'
mw	**mʸ**	#54	*mwar / mwaare* 'man'	(#97)	*marü / maarü* 'animal'
mm	**m:**	#188	*meta / meta* 'what'	#33	*mmeri / mmari* 'to laugh'

f	**f**	#200	*fauw / fauwa* 'four'	#72	*wautu / wautu* 'to hit'
t	**t**	#34	*teengi / taan*gi 'to cry	#21	*mengi / mangi* 'to think'
tt	**t:**	#50	*ttar / ttara* 'to dream'	#34	*teengi / taan*gi 'to cry
s	**s**	#59	*siresir /* n.a 'mother'	#80	*tirettir /* n.a. 'to split (tr.)'
		#26	n.a. */ siimw* 'head'	#61	n.a. */ iimw* 'house'
h	**x**	#4	*huubw / huubwe* 'leg'	#14	*uubw / uubwa* 'belly'
r	**ɾ**	#40	*rüür / uurü* 'to drink'	#14	*uubw / uubwa* 'belly'
ng	**ŋ**	#38	*ngüüng / ngüüngü* 'to chew'	#116	*bwuung / bwuungü* 'flower'
w	**w**	#72	*wautu / wautu* 'to hit'	#27	*bautü / bwaautü* 'nose'
y	**j**	#30	*yaaw / yaawa* 'mouth'	#180	*taawa / taawa* 'far'

Shared consonants

Hatohobeian and Sonsorolese share the bilabial consonants /p, bw, m, mw, mm/ . The first of this, /p/, is an unvoiced bilabial plosive that can appear contrastively in word-initial and word-final position. The consonant /bw/ is a voiced bilabial plosive that is velarized. In Sonsorolese /bw/ the lips are pressed together with less force, and in some cases transcription as [β] is appropriate. Bilabial nasals can be divided into a bilabial nasal /m/, a velarized bilabial nasal and a geminate bilabial nasal /mm/. The status of geminate consonants will be commented upon separately. The final bilabial, /f/, and the voiceless alveolar plosive /t/ are pronounced just like English /f/ and /t/ and require no further comment.

The sounds /bw/ and /mw/ are velarized consonants. What this means is that while the lips are positioned for /b/ and /m/, the tongue-root is raised as it is during pronunciation of /u/. This combination of /b/ and /u/ is simultaneous, but to a non-native listener it may sound like a sequence 'bw'. It would be possible to represent this consonant as /b/ instead of /bw/, because no non-velarized /b/ exist. However, [mʸ], [bʸ] and [pʸ] are written 'mw', 'bw' and 'pw' to avoid confusion.

The next consonant, /s/, occurs in both Hatohobeian and Sonsorolese frequently, but rarely in the same environments. The word for 'dog' is a word in which both languages have /s/: #96 HAT *piris*, SON *pirisi* 'dog'. In most other words, Sonsorolese /s/ corresponds to the Hatohobeian affricate /ts/ which is described in the section on Hatohobeian sounds (#59 HAT *tsiimw* SON *siimw* 'head'). In most Hatohobeian words that have /s/, this corresponds to /d/ in Sonsorlese (#59 HAT *siresir* SON *diredir* 'mother'). These two correspondences, HAT /ts/ = SON /s/ and HAT /s/ = SON /d/ , were considered by locals to be by far the most obvious and salient way to distinguish Hatohobeian from Sonsorolese.

The sound /h/ is a voiceless velar fricative similar to 'ch' in German 'ich'. It occurs in both languages, but in Hatohobeian it is also the correspondent to Sonsorolese /gl/ which will be described in the section on

uniquely Sonsorolese sounds (#129 HAT *maham* SON *maglam* 'moon'). Intervocalically, this voiceless fricative may take on the voicing of the surrounding vowels. Preceding a high vowel, it is usually pronounced with very little friction (e.g. SON *tapahi* [tapahi] 'to cut/hack wood tr.').

The consonant /r/ is not a trill as in English or a retroflex like in Woleaian, but a voiced alveolar tap like the 'tt' in 'better' in American English.

The sound /ng/ is a velar nasal that can occur in both the coda and the onset of syllables.

The two glides, /w/ and /y/, often occur in Chuukic onsets that were empty in a previous state of the language (Quackenbush, 1969). They are respectively a voiced labial-velar approximant and a voiced palatal consonant.

Of these consonant, some may also be doubled to form versions of the consonant that are pronounced with more force and that are lengthened, e.g. #50 HAT *ttar /* SON *ttara* 'to dream'. In the case of /tt/ the geminate form contrasts with the single /t/. In other cases a geminate is the result of a morphophonological process, as for example in the following phrase, where a vowel disappears, leaving two /r/'s beside each other, which surface as the alveolar nasal [n].

(1)a	mware + ri + Hatohobei	→ (1)b	/mwani Hatohobei/
	man + of/from + Hatohobei		man -of Hatohobei
			Hatohobeian man

Similarly, a verb whose stem begins with /h/ may be reduplicated, resulting in the sequence /h/+V+/h/, in which case the vowel disappears and /h/ + /h/ become [k]. The geminate of /r/, then, is not /rr/ but /n/ and the geminate of /h/ is not /hh/ but /k/, but these geminates are not phonemic. Something similar seems to be the case for the only occurernce of /tt/ in #110 HAT *rittobwuhaha* SON *rihatabwoglagla* 'spider'. Other geminates, such as /ff/ have only been found in Sonsorolese, but may be found in Hatohobeian as well in a larger database.

Hatohobeian consonants

Table 6. Consonants that appear only in Hatohobeian

Phoneme		**Example**		**Contrasting example**	
Orth	**IPA**	**ABVD**	**HAT/SON**	**ABVD**	**HAT/SON**
TS	**t͡ʃ**	#26	*tsiimw* 'head'	#61	*iimw* 'house'
TTS	**t͡ʃ:**	#23	*ttsa* 'blood'	#122	*tsaar* 'water'

The sound /ts/ is an affricate that begins as the palatal stop [c] and is released as the palatal fricative [ʃ]. The choice to write this sound as 'ts' rather than 'ch' or 'tsh' is a matter of habit within the community, and is related to the fact that the dominant language Palauan uses 'ch' for its glottal stop. The affricate /ts/ uniformly

corresponds to Sonsorolese /s/, e.g. #26 SON *siimw* 'head' and #23 SON *ssa* 'blood'.

Sonsorolese consonants

Table 7. Consonants that appear only in Sonsorolese

Phoneme		**Example**		**Contrasting example**	
Orth	**IPA**	**ABVD**	**HAT/SON**	**ABVD**	**HAT/SON**
D	**ð**	#92	*duuhi* 'to open, uncover'	#137b	*uuhu / uuhu* 'to blow with the mouth'
GL	**gˡ**	#124c	*mataw* 'ocean'	#129	*maglam* 'moon'
SS	**s:**	#23	s*sa* 'blood'	#122	*saarü* 'water'
NNG	**ŋ:**	#28	*nngada* 'to breathe'	#182	*ngaangü* 'pers. pron. 1.sg'
KK	**k:**	#81	*kkangi* 'sharp'	p.c.	*kato* 'to bring'
FF	**f:**	p.c.	*ffehi* 'offering'	#84	*faato* 'plant'
PP	**p:**	#83	*ppao* 'to pound'	#121	*piiya* 'sand'
PW	**pʸ**	#39b	*hapwesi* 'heat up'	#152	*happara* 'small'

The consonant /d/ is a voiced interdental fricative identical to 'th' in English 'father'. In some but not all of the words containing /d/before a high vowel the consonant is devoiced, e.g. #123 higlidi [xigˡiθ̟i] 'to flow'. Words with /d/ in SON are always /s/ in HAT (#59 HAT *siresir* SON *diredir* 'mother').

The sound /gˡ/ is a stop that is made by raising the tongue-root to the velum as in [g] in 'good', while curving down the sides of the tongue to allow a lateral release of air as in [l] in 'left'. Younger speakers may substitute this sound for a lateral approximant [l]. The choice to analyse this sound as a lateralized velar [gˡ] instead of a velarized lateral [ɬ] is motivated firstly by the fact that the analysis as [ɬ] fails to recognise this sound as a stop, and secondly by the fact that /gl/ is reflected as a velar fricative in HAT (#129 HAT *maham* 'moon').

The final six sounds, /ss/, /nng/, /kk/, /ff/, /pp/ and /ppw/ are geminates that occurred in these Sonsorolese words but not in their Hatohobeian translations. In the case of /ss/, the Hatohobeian translation always contains /tts/. In the case of the /pp/ in #83 *ppao,* the Hatohobeian translation is not etymologically related to the Sonsorolese word. In the case of /kk/ in #81 *kkangi* , the Hatohobeian translation *keng* contained a short /k/. For the word *ffehi* 'offering', the Hatohobeian translation is unknown. These examples show that it is difficult to explain why a geminate consonant appears in a certain place and to do so would fall outside of this study's scope.

The findings on consonants in HAT and SON can be summarized in consonant charts, which are giving in Table 8, 9, 10 and 11.

Table 8. Phonemic consonant chart of HAT

	Bilabial	Velarized Bilabial	Alveolar	Palatal	Velar
Plosive	**P**	**BW**	**T**	**TS**	**(K)**
Nasal	**M**	**MW**	**(N)**		**NG**
Tap			**R**		
Fricative	**F**		**S**		**H**
Approximant	**W**		**Y**		

Table 9. Phonemic geminate consonants of HAT

	Bilabial	Velarized Bilabial	Alveolar	Palatal	Velar
Plosive			**TT**	**TTS**	**(K)**
Nasal	**MM**	**MW**	**(N)**		

Table 10. Phonemic consonant chart of SON

	Bilabial	Velarized Bilabial	Inter-dental	Alveolar	Velar	Lateralized Velar
Plosive	**P**	**BW**		**T**	**(K)**	
		PW	**D**			
Nasal	**M**	**MW**		**(N)**	**NG**	
Tap				**R**		
Fricative	**F**			**S**	**H**	**GL**
Approximant	**W**			**Y**		

Table 11. Phonemic geminate consonants of SON

	Bilabial	Velarized	Alveolar	Velar

		Bilabial		
Plosive	**PP**		**TT**	**(K) (KK)**
Nasal	**MM**	**MW**	**(N)**	**NNG**
Fricative	**FF**		**SS**	

5 Analysis: morphophonology

In the previous section, data was analysed to find the smallest units needed to make words in Hatohobeian and Sonsorolese: individual sounds. Although sounds like /m/ and /a/ are important for spelling purposes, they do carry their own meaning. Combined, however, /m/ and /a/ form *ma* which has the meaning 'and' in the sentence *ngaangü ma John* 'I and John'. The linguistic term for the smallest *meaningful* units within a language is 'morpheme'. Morphemes combine into words, which combine into phrases, which form clauses, which form sentences, the complex meaningful units that we are used to speaking and writing in.

Linguists receive special training to detect small meaning-carrying parts within lexical units, but native speakers analyse language at the level of the word. For example, in the English sentences '*he dislikes cookies*' readers perceive the word '*dislikes*' as an independent unit and do not normally think about the fact that is is comprised of the morphemes '*dis+like+s'*. A good orthography reflects this by placing spaces between each word and not between each morpheme. Making this distinction is far from straight-forward, as it relies just as much on the perception of native speakers as on recognizable characteristics of the unit, and these two factors do not always align neatly. The purpose of this chapter is to give an incomplete, but hopefully insightful idea of how Hatohobeian and Sonsorolese morphemes may be classified, and what consequences that may have for how locals want to write them.

In Hatohobeian and Sonsorolese, as in many languages, the most important groupings for morphemes are the group 'noun' and 'verb'. It is relatively easy to determine whether a word is a noun or verb or neither, because verbs in HAT and SON can (and in most cases *must*) take subject markers, whereas nouns cannot and do not, as in (1), where the word *fatare* takes the subject marker *e*, while the noun *mware* does not:

(1)	SON	*mware*	*e*	*fatare*
	HAT	*mware*	*ye*	*feter*
		man	(he)	walk
		noun	subj:3.sg	verb
		the man walks		

Aside from nouns and verbs, Hatohobeian and Sonsorolese employ a number of affixes, both prefixes and suffixes, as illustrated in (2). An affix is any meaningful unit that is felt to be a secondary part of the meaning of the word and that cannot by separated from its stem.

(2) SON *mwana e wautüyai*

HAT *mwana ye wautüyei*

mwa(re)	-na	e	wautü	-yai
man	that	(he)	hit	me
stem	suffix	subj:3.sg	stem	suffix

that man hit(s) me

Aside from nouns, verbs and affixes, some Hatohobeian and Sonsorolese lexical units behave in ways that are neither typical of stems nor of affixes. Subject markers are a good example. On the one hand, they are perceived by native speakers as an obligatory part of the verb. Asking a speaker to give the Hatohobeian or Sonsorolese for 'walk', 'bathe' and 'hit' will invariably elicit the reponses *e fatare* '(he/she) walk(s)' , *e tütü* '(he/she) bathe(s)'and *e wautu* '(he/she) hit(s)' (SON) and *ye feter* '(he/she) walk(s)', *ye tütü* '(he/she) bathe(s)' and *ye wautü* '(he/she) hit(s)' (HAT). On the other hand, speakers are allowed to place a pause or an 'ehm' between the subject marker and the verb, which is not allowed between verb stems and object markers like *-yai*. Also, tense markers may separate the subject marker from the verb stem, as in the Sonsorolese example (3). This behaviour is typical of a proclitic, a morpheme that attaches to whatever comes to its right.

(3) SON hosa wautüyai

ho	sa	wautü	-yai
you	then	hit	me
subj:2.sg	tense	v. stem	obj:1.sg

Aside from verb, noun and affix, most other common terms in the description of English and European languages, such as 'preposition' and 'adjective' are quite problematic when applied to these languages. The level of grammatical similarity between these word categories in English and the words that fulfil the same function in Hatohobeian and Sonsorolese ones is very low, to the point where it is clearer and more objective to choose new terms. The terms that will be used from here on out are based on the terminology used for Woleaian by Ho-min Sohn (1975), who posits eleven parts of speech for Woleaian based upon the concepts of head, modifier and connector. Only those parts of speech that are relevant to the focus of this study will be discussed.

5.1 The noun phrase

Nouns

Nouns are names, as it were, for objects, people and states, and less stereotypically also for anything else that the speakers wants to name, including actions, events, and so forth. Nouns can be modified by other words, which means that they can be preceded or followed by elements that add meaning to the noun. A noun and

the words that modify it are together called the noun phrase. Nouns are an open category, which means that the possible amount of different nouns is endless, as long as they are in accordance with the CV-pattern from section 4.1 and contain the phonemes from section 4.2, and bearing in mind the differences in final vowels between Hatohobeian and Sonsorolese. Examples of Hatohobeian and Sonsorolese nouns include:

HAT *iimw* SON *iimwa* 'house'
HAT *tsaarü* SON *saarü* 'water'
HAT+SON *Meriiken* 'America'
HAT+SON *rarow* 'yesterday'
HAT+SON *skuul* 'school'

One type of phrase that can be made with Hatohobeian and Sonsorolese nouns is a combination between a noun and a numeral. Numerals themselves are compounds of numeral stems and a numeral classifiers, which show interesting morphophonological interaction. In Chuukic languages there are usually a great number of classifiers: ones that should be used when counting animals and people, when counting long objects, short objects, etc. To give a full overview of possible classifiers would exceed the scope of this study, and it would also be exceedingly difficult, because both in personal communication and in the collected narratives complex counting was almost always done using English numerals. Therefore only the paradigm of the general counter classifier morpheme *-uwa* is given in Table 12. The numerals in Table 12 are given as the phonetic transcriptions that can be found under ABVD numbers 197 until 206 from which a phonemic version needs to be established. Numeral roots were constructed for HAT and SON based upon what is most logical given (a) the historical root in Proto-Chuukic/Trukic (PTK), (b) the contemporary equivalents of the root in Pulo Annese (PUA) and Woleaian (WOL) and (c) the most likely contraction rules for a given vowel V and a following vowel /u/ in *uwa*.

Table 12. Numbers and counting classifiers of HAT and SON compared to Proto-Chuukic/Trukic, Proto-Oceanic, PUA and WOL, based on Jackson (1983)

	Hat: IPA	Hat Phonemic	Son: IPA	Son: Phonemic	PTK: numeral roots	POC	PUA	WOL
1	sɛ:w	se(e)-	ðɛ:wᵱ	de(e)-	*e, *te (/ _ class) *-da	*(n)sa	-tA	-tA
2	xuow	huwa-	gˡʊwo:wᵱ	gluwa-	*rua	ruwa-	ruwa-	rúwa-
3	səɾuw	seri-/serü-	ðoɾu:wᵱ	deri-/derü-	*telú	*tolu	déni-	seli-

4	faːw	faa-	faːwᵱ	faa-	*faa-	---	daa-	faa-
5	ɾimow	rima-	ɾimoːwᵱ	rima-	*lima	*lima	nima-	lima-
6	woɾow	woro-	woɾoːwᵱ	woro-	*ono-	*ono	ono-	wolo-
7	fisuw	fisi-/fisü-	fɵðuːwᵱ	fidi-/fidü-	*fitú-	*pitu	didi-	fisi-
8	waɾuw	wari-/warü-	waɾuːwᵱ	wari-/warü-	*walú	*walu	wanú-	wali-
9	tiwow	tiwa-	tiwoʊwᵱ	tiwa-	*diwa	*(n)siwa	diwa-	tiwa-
10	sɛix	seih	ðeixɛtiwo̱	deihetiwo				

This overview of numeral show that the following phonological rule is at play in the formation of these words. This rule means that a sequence '/e/ + consonant + /ü/' will turn into a sequence '/ö/ + consonant + /u/' if it is followed by the morpheme *-uwa*.

(1) eCü → öCu / _uwa example: HAT *seli+uwa = söruw* SON *deli+uwa = döruuwa* 'three'

This data also gives evidence for these two contraction rules:

a + o = o example: HAT rima+uwa = rimow SON rima+uwa = rimouwa
i/ü + u = uu example: HAT fisuw SON fiduuwa

Difficult to explain are the contraction rules that give rise to the forms for 'one' and 'four':
?se+uwa = seew
?faa+uwa = faaw

Relator nouns

A subgroup of nouns is made up of what can be called 'relator nouns' (RelN). Relator nouns that behave as convey a locational meaning, similar to the meanings of English prepositions such as 'under', 'on', 'behind', etcetera. Grammatically, they behave as nouns do. That is to say, they take the general attributive suffix *-ri* as well as possessive pronominal suffixes (see the section on possessive suffixes), and they can be used

independently. In this regard, they are similar to English forms like 'on top (of)', '(on) the inside (of)' and 'underneath', which can be used prepositionally or without the prepositional phrase 'of X'.

What distinguishes relator nouns from regular nouns is their relative meaning. Saying that you are standing 'on the chair' does not require any additional cues about your location. But saying that you are standing 'on the top' inevitably evokes the question 'on top of what?', or 'on top relative to what?'. Another way to explain the relativity of relator nouns is to use the example 'in front'. If three people called Alice, Bob and John are standing in alphabetical order, Bob is 'in front' relative to Alice, but 'behind' relative to John.

Relator nouns are very typical of Chuukic languages and are semantically speaking a very interesting group of words. What is more, their phonology is complex, consisting of a morpheme 'i' at the beginning of the word of which the function is unclear, a core morpheme and a suffix that agrees with the object or person the Relator noun is related to. Because these relator nouns are so crucial to the understanding of many Hatohobeian and Sonsorolese sentences, an overview of the 8 relator nouns confirmed by informants is given in Table 13. It must be noted that the phonemic base forms as well as the shortened forms before *-ri* are often difficult to give with certainty. The form *ifar* was given differently by different informants, some of whom claimed 'ifa', 'faar' and 'ifari' were all allowed as abbreviations of *ifar.* The forms for 'near', TOB *hahep* SON *haglepa,* and the related forms for 'next to', TOB *isehe* SON *ideglae* (not given in the overview), may be relator nouns, but they could also represent an exceptional use of two otherwise regular verbs 'be near' and 'be next to'. These and other issues surrounding relator nouns will need to be discussed in a future study with a broader scope.

The core morphemes given in Table 13 can be accompanied by several other morphemes. In the context of a phrase or sentence, relator nouns may be preceded by the preposition HAT+SON *ma* 'from, of' or the prefix HAT+SON *ni-* 'at'. They are also often followed by the attributive suffix *-ri* which links what precedes it with what follows (I), although they can also appear independently (II) or followed by an agreeing possessive pronoun (III).

	HAT	SON	Eng
I	*bira sü imwihiri tebar*	*bira dü imwigigliri tebar*	'go stand behind the table'
	bi -ra sü imwihi -ri tebar	bi -ra dü imwigli -ri tebar	
	go -away stand behind of table	go -away stand behind of table	
	v -suff v2 RelN-suff N	v -suff v2 RelN-suff N	
II	*bira sü imwih*	*bira dü imwigli*	'go stand in the back'
	bi -ra sü imwih	bi -ra dü imwigli	
	go -away stand behind	go -away stand behind	
	v -suff v2 RelN	v -suff v2 RelN	
III	*bira sü imwihi*	*bira dü imwigli*	'go stand behind me'
	bi -ra sü imwihi	bi -ra dü imwigli	
	go -away stand behind me	go -away stand behind me	
	v -suff v2 RelN-suff	v -suff v2 RelN-suff	

Some forms will be pronounced differently if they are followed by *-ri* and part of quick, running speech. An example is SON *uwowora* '(on) top', which can be used in a sentence in two different forms:

	SON	Eng
Ia	*iteta uwowori tebar*	'put it on the table'
	ite -ta uwowo -ri tebar	
	put -away on top of table	
	v -suff v2 RelN-suff N	
Ib	*iteta wori tebar*	'put it on the table'
	ite -ta wo -ri tebar	
	put -away on top of table	
	v -suff RelN -suff N	

Table 13. Overview of relator nouns

Meaning	Hat	*+ -ri*	SON	*+ -ri*
behind	*imwih*	--	*imwigli*	--
in(side)	*iran*	*reni*	*iran*	--
in front	*imow*	*imoweri*	*imowara*	--
middle (of island, group, etc.)	*ren ruuhar*	*ruheri*	*roppuwara*	*puwari*
centre (of body or object)	*ren puwar*	*puweri*	*roppuwara*	*puwari*
near	*(ni)hahep*	--	*(ni)haglepa*	--
on, above	*iwoor*	*wori*	*uwowora*	*wori*
outside	*iruhur*	--	*uruhura*	*ruhuri*
under	*ifaar*	*ifari*	*ifaar*	*fari*

Pronouns

As their name implies, pronouns can stand 'for' or in place of a noun. Grammatically, they take the place of the noun but they do not carry as specific a meaning. Instead, they refer to nouns that have either been mentioned elsewhere in a conversation or that are obvious from the context. For example, the meaning of the pronoun HAT+SON *ngaangü* in HAT+SON *ngaangü i bwe mwangau* 'I am going to eat' refers back to the speaker and thus depends on who the speaker of the sentence is.

A number of different types of pronouns exist, amongst them question words (i.e. HAT+SON *meta* 'what', *iteü* 'who', *iya* 'where', HAT *ingeet* SON *ingaet* 'when (unmarked)' and *wangaet* 'when (past)', but also demonstrative pronouns formed with the stems *i-* and *mar-* (HAT *itere* 'here' HAT+SON *mena* 'that'), and personal pronouns, which will be discussed in the section on demonstrative affixes. In this section, only the paradigms for personal pronouns will be given.

Emphatic personal pronouns

Personal pronouns in Hatohobeian and Sonsorolese come in 3 persons (first, second and third) and 2 numbers (singular, plural) and, in the case of the first plural pronoun, in an inclusive and exclusive form. The meaning of the inclusive form can be paraphrased as 'I and mine, including you, the hearer', while the exclusive form mean 'I and mine, but not you, the hearer'. These personal pronouns are emphatic, because they are only used in contexts that for pragmatic reasons require an emphasis of who the subject of the phrase is. Grammatically, the subject marker that is included in the verb phrase is sufficient to make a well-formed clause. The morphological base forms for the personal pronouns are given in Table 14 and have been deduced by comparing the phonetic descriptions in ABVD# 182 to 187 to the forms from Proto-Chuukic/Trukic (PTK), PUA and WOL retrieved from Jackson (1983), and determining the most likely vowel length and quality. Differences between HAT and SON stand out clearly, such as the lack of VFVs in the Hatohobeian forms and the resulting compensatory lengthening in the forms *heer* 'you', and a-raising in the form *ngaamem* 'we excl.'.

Table 14. Overview of emphatic personal pronouns

	HAT	SON	PTK	PUA	WOL
1 p incl	*ngaang*	*ngaangü*	**gagú*	*ngangÚ*	*gaangÚ*
2 p	*heer*	*hera*	**ke(e)na*	*kenA*	*geelA*
3 p	*iiy*	*iiya*	**ia*	*iA*	*iiyA*
1 p incl	*hiits*	*hiisa*	**kica*	*kisA*	*giishA*
1 p excl	*ngaamem*	*haamami*	**kaamami/ *kami*	*kamamI*	*gaamamI*
2 p	*ngaami*	*haami*	**kaamii*	*kaamii*	*gaamii*
3 p	*iih*	*iigla*	**ira*	*IlA*	*iira*

Possessive suffixes

In the previous section it was mentioned that relator nouns may be marked for person by a suffix. Suffixes which mark for person also appear after certain adverbs (e.g. HAT *urutar* SON *urutara* 'all of it' vs. HAT *urutaah* SON *urutaegl* 'all of them') but they are most commonly associated with possessive constructions. In a possessive construction, a morpheme is added to a noun phrase to indicate that the person or entity denoted by the noun belongs to some other person or entity. In English this is done by using pronouns before the noun like 'my', 'your', 'his' and 'hers'.

In Hatohobeian and Sonsorolese it is done very differently and involves the distinction between inalienable and alienable possession. Inalienable possession is a form of possession whereby something inherently belongs to you and cannot be separate from you, such as your own body parts, the people who are

biologically related to you, your own thoughts, feelings and actions, and referential objects (e.g. a book about you, a photograph of you). Any kind of possession that can be transferred to another person is 'alienable possession'. What is important about this is that Hatohobeian and Sonsorolese allow the speaker to show ownership of possession by attaching a possessive suffix directly to the noun only in cases of inalienable possession:

Suffix		HAT	SON	Eng
-i	1 sg	*mamai*	*mamai*	'my mother'
-mi	2 pl	*paumi*	*paumi*	'your hands (plural)'

In case of alienable possession, however, the suffixes cannot be attached directly to the target noun, but have to be attached to a noun classifier that precedes it. Some Chuukic languages have as many as 20 noun classifiers. Personal communication with informants seemed to indicate that in Hatohobeian and Sonsorolese the number is much smaller, and some are in the process of becoming obsolete. The classifiers HAT *taha-* SON *tagla-* 'belt' and HAT *hiye-* SON *hiye-* 'sleeping map' were not recognised as classifiers by a younger informant. This is not surprising, as it no longer a custom among the South-West Islanders to wear traditional garments that require belts or to sleep on sleeping mats.

In all other situations in which a relationship of 'belonging' between two full nouns needs to be expressed the attributive morpheme *-ri* is used. For example:

HAT *wari mwani Woreyai*
wa -ri mwa(r)-(r)i Woreyai
canoe -of man -of Woleai
N -suff N -suff N
'the canoe of the man from Woleyai'

This morpheme is pronounced [ru] when it appears before the semi-vowel *w*, and the phonological rule that double *r* becomes *n* also applies.

HAT *moumou ri weireng*	pronounced: moumou ru weireng	'the kingdom of heaven
HAT *mware+ri Woreyai*	pronounced: mwani woreyai	'man from Woleiai'

Table 15. Overview of possessive suffixes

	HAT	SON		HAT	SON
1 sg incl	*-i*	*-i*	1 pl incl	*-ts*	*-sa*
1 sg excl			1 pl excl	*-mem*	*-mami*

2 sg	*-m*	*-mu*	2 pl	*-mi*	*-mi*
3 sg	*-r*	*-ra*	3 pl	*–:h*	*-$^{i/e}$gla*

During the data collection phase, these suffixes were elicited in the context of example words that they were attached to. This revealed a number of phonological processes that were the result of the interactions of these suffixes with the final vowels of the stems they were attached to. The most important rule is independent of the stem and can be seen in Table 15: the possessive suffix for the third person plural lengthens the preceding vowel in Hatohobeian and inserts an /i/ or /e/ in Sonsorolese (e.g. HAT *mamaah* SON *mamaegla* 'their mother'). Other stem-dependent rules are listed here:

Rule	Example		
	HAT	SON	Eng
Final /a/ becomes /e/ before *-i*	*rimei*	*rumei*	'my drink'
Final /a/ becomes /o/ before *-mwu*	*imwomw*	*iimwomwu*	'your house'
Final /ü/ becomes /u/ before *-mwu*	*raumw*	*raumwu*	'your child'

Demonstrative affixes

Languages use demonstratives to point out things and distinguish them from other things, usually in terms of how close they are to the people speaking. In Hatohobeian and Sonsorolese demonstratives follow the nouns they go with. Although demonstratives in Woleaian and Saipan Carolinian are treated as separate words, this paper chooses to treat them as suffixes at least within this study, for the sole reason that all but one informant chose to spell them as such in their own writing. Four demonstrative distinctions were recognised in the data[7]:

	Meaning	Hat.	Son.	Son. emph
1	this (near speaker)	*-ye*	*-ye*	*-yera*
2	that (near hearer)	*-ra*	*-ra*	
3	close to neither	*-raye*	*-rara*	
4	close to neither, not in sight	*-we*	*-we*	

The meaning of the form *–we* requires some elaboration. This form tends to be used when the thing that is referred to is not visible to those involved in the discourse. As such, it often means something like 'that thing we were talking about' or 'that person I mentioned before'. In a sense, this is quite close in meaning to the English determiner 'the'. Thus, *faifinawe* is often more accurately translated as 'the woman' than as 'that women'.

[7] One young Hatohobeian informant seemed to instead make a three way distinction of 'this' (*-ye*), 'that' (*-ra*) and 'that over there' (*-raye*, *-we*). This could be idiosyncratic, but it could also be a characteristic of Echangese.

These four demonstrative affixes can be combined with a plural affix HAT *-ka-* and SON *-ha-*, which can in turn take the four suffixes shown above. In Sonsorolese, the affix *-ra* at the end signals emphasis of the whole noun[8]. This affix is usually pronounced with barely a hint of its final vowel, while the first /a/ is lengthened. The longest possible demonstrative, then, is formed like this:|

SON *imwaharara*
[imʏɐxɐɾa:ɾ]
imwa -ha -ra -ra
N -pl -dem -emph

Attached to the defective pronouns *i-* and *mar-* the affixes given above create demonstrative pronouns. In Hatohobeian these words can also be used for people and as interjections. Forms for these pronouns will be given here because they are very different from the paradigms given in Capell (1950).

Table 16. Pronouns for objects and entities

	HAT	SON	Notes
singular	*mere*	*merera / mere*	
	mena	*mena / menna*	
	menaye	*menara*	
	marawe	*morowe*	(usage extends to 'that time', 'that place')
plural	*mwakaye*	*mwarahara*	
	mwakara	*mwarahara*	
	mwakaraye	*mwaraharara*	

[8] In other Chuukic languages, the set of demonstrative suffixes is very different, including the form for 'that, close to neither'. It seems to be the case that the emphatic meaning is the original meaning of the SON suffix *-rara*, which then came to be the common form for 'that, close to neither, in sight'.

	makawe	*mwarahawe*

Table 17. Pronouns for places (in English: here, there, over there)

	HAT	SON	Notes
singular	*itere*	*ihara*	
	itona	*ihira*	
	itonaye	*ihirara*	
	(iterokaraye)		may be out of use

Table 18. Pronouns for men and women (essentially the nouns + demonstrative suffixes)

	Hat		Son	
	males	females	males	Females
singular	*mwareye*	*faifireye*	*mwarera*	*faifirera*
	mwana	*faifina*	*mwana*	*faifina*
	mwanaye	*faifinaye*	*mwanara*	*faifinara*
	mwarawe	*faifirewe*	*mwarewe*	*Faifirewe*
plural	*mwarakaye*	*faifirakaye*	*mwarehara*	*faifirehara*
	mwarakara	*faifirakara*	*mwarehara*	*faifirehara*
	mwarakaraye	*faifirakaraye*	*mwareharara*	*faifireharara*
	mwarakawe	*faifirakawe*	*mwarehawe*	*faifirehawe*

Conclusion

Using the various forms given in this section on the noun phrase, Hatohobeian and Sonsorolese are able to create counting constructions made of a counting classifier and a noun, relator noun phrases, possessive constructions, attributive constructions using *-ri*, and demonstrative forms made with demonstrative suffixes or with independent demonstrative nouns. The basic forms that are used in each of these constructions are given, as well as the most pertinent of the morphophonological rules that are involved in word-forming. Undoubtedly, much more can be said about each of these word categories.

Particularly interesting is the category of demonstratives. For one, the forms that were found are not common to Chuukic languages and were not noted in Capell (1950). Secondly, while studying the demonstrative pronouns, it was found that these engage in unusually complex demonstrative constructions, such as SON *iyewe*

hei fitehiwe 'that him that worker'. This unexpected and as yet unexplained example gives an indication of the further discoveries on Hatohobeian and Sonsorolese that are still waiting to be discovered.

5.2 The verb phrase

Verbs

In Chuukic languages, sentences are either equational or predicative, that is, they either only contain two noun phrases that are equated with one another (HAT+SON *mena piris* 'that is a dog'), or they contain a main verb (HAT *piris ye mwangau* SON *piris e mwangau* '(the) dog eats'). Verbs are all words that can be the head of a verb phrase and which typically describe actions, events and states. In Hatohobeian and Sonsorolese as well as English, the most important distinction that can be made within the group of verbs is that between intransitive and transitive verbs.

Transitive verbs like 'kill' and 'make' describe situations in which one person, animal or thing (the subject) is doing something to another person, animal or thing (the object). Intransitive verbs like HAT *masüh* 'sleep' and *bwito* 'come' only require the involvement of one person, animal or thing and hence take no object marker. In intransitive sentences, HAT and SON appear to favor a postpositioned subject (i.e. HAT *ye mwangau piris* SON *e mwangau piris* '(the) dog eats'). A subgroup of intransitive verbs exists can be used to modify a noun. For example, depending on the context, HAT *mere* e *maho* could mean either 'this is good' or 'this good thing' and HAT *mware e rap* could be used to mean either 'the man is big' or 'a big man'. Some verbs, such as *mwangau* 'eat', and *fasüfas(ü)* 'weave' can be used both in a transitive and intransitive sense. In most cases, the transitive form of a verb is morphologically different from the intransitive form. The intransitive form is usually shorter and is used when the object is either not mentioned or not that important. The transitive form of the verb usually ends in 'i' and is used whenever a specific object is meant.

Subject markers

Hatohobeian and Sonsorolese predicative sentences require only a verb and a subject marker which indicates the grammatical subject. Thus, SON *gla kakamo* 'they played', *iigl gla kakamo* '(as for them,) they played' and *riweisikawe gla kakamo* 'the children played' are all well-formed Sonsorolese sentences. These subject markers are listen in Table 19. Interestingly, in some of the analysed narratives, subject markers were dropped in fast speech.

Table 19. Ovierview of subject markers compared to PTK, PUA, WOL data from Jackson (1983)

	Hat	Son	PTK	PUA	WOL
1 sg incl	*i*	*i*	*ú	i	i
2 sg	*ho*	*ho*	*ko	ko	go

3 sg	*ye*	*e*	*e	e	ye
1 pl incl	*si*	*di*	*ti	di	si
1 pl excl	*hei*	*hai*	*kai,ú	kaI	gaI
2 pl	*hau*	*hau*	*kau	kaÚ	gaI
3 pl	*ha/he*	*gla/gle*	*re	le	re

Table 19 shows that the Hatohobeian and Sonsorolese markers follow neatly from the forms reconstructed for PTK and collected for PUA and WOL (Jackson, 1983). It also shows that the 3rd plural marker HAT *ha* SON *gla* may undergo a-raising.

Object markers

Hatohobeian and Sonsorolese transitive verbs are followed by an object suffix that agrees in number and person with the object. This object marker is obligatory, so it is not possible to translate the English 'kill' without specifying whether there was only one victim or more and whether the victim was you, me or another person. The translation HAT *riiy* SON *riiya*, then, means 'kill him/her/it', rather than just 'kill'. The actual stem meaning 'kill' is *ri-*, with the hyphen indicating that this is a bound stem, a stem that never appears without a suffix. Placing this object pronoun after intransitive or neutral verbs has the effect of giving them a transitive meaning. Other ways of transitivizing verbs are by prefixing them with *ha-*.

SON	*fada*	'to live'
	hafada	'to give birth to'
HAT+SON	*tama*	'father'
	hatamatama	'to be a father to'

Table 20 compares the forms found in HAT and SON to PTK, Proto-Micrionesia (PMC), PUA and WOL (Jackson, 1983). It shows that the first person singular form *ai (PTK) takes /y/ in modern-day HAT and SON, likely to break vowel clusters and maintain a strict CV-patterns. In the third person, the vowel has disappeared in Hatohobeian and has remained in Sonsorolese only where it is preceded by /y/ or /w/. The rules that determine which glide will appear are these:

a obj:3.sg → -:ya / i_

b obj:3.sg → -:wa / u_

The colon represents lengthening of the preceding vowel. The by now familiar process of a-raising is encountered in SON *-hemi* 'obj:2.pl' and SON *-i/egla* 'obj:2.pl' indicated the appearance of /i/ or /e/ in between stem and suffix. The third person plural of the object marker is also the only suffix that distinguishes between animate and inanimate referents.

Table 20. Overview of object markers of HAT and SON compared to PTK, Proto-Micronesian (PMC), PUA, WOL data from Jackson (1983)

	Hat	Son	PTK	PMC	PUA	WOL
1 sg	*-yei*	*-yai*	**ai*	**(y)ai*	*-ei*	*-yaI*
2 sg	*-h(o)*	*-ho*	**ko*	**ko*	*-kO*	*-gO*
3 sg	*-Ø*	*-Ø / –:ya / –:wa*	**a*	**a*	*-A*	*-A*
1 pl inc	*-hits*	*-hisa*	**kica*	**kit, t'a*	*-kisA*	*-gishA*
1 pl exc	*-hamem*	*-hamami*	**kamami*	**kamami*	*-kamamI*	*-gemamI*
			**kami*	**kami*		
2 pl	*-hami*	*-hemi*	**kamii*	**kamii*	*-kamii*	*-gamii*
			--	**kam'u*		
3 pl	*–^{i}h* *-:n (inam)*	*-$^{i/e}$gla* *–:n (inam)*	**ira*	**ira*	*-ilA*	*-VrA*

Tense and aspect markers

While verbs include information about what type of action, event or state a sentence is about, other morphemes give information about the tense and aspect of the verb phrase. Tense has to do with the time frame within which the described action, event or state occurred. Aspect has to do with whether an action, event or state has just begun or has been going on for a while and whether it is finished or not. For example, in the sentence 'John has peeled the orange', the morpheme '-ed' tells us the peeling happened in the past, and the word 'has' tells us that the orange has been fully peeled and is ready to be eaten. In Hatohobeian and Sonsorolese, all relevant distinctions are made by a limited number of tense/aspect markers (TAM) that always appear in between the subject markers and the verb stem. These markers are not obligatory and in their absence, the time and aspect of the verb has to be derived from the context. The TAMs given below suggest that the two languages are very similar in their treatment of tense and aspect, but further research might reveal subtle differences in use and meaning.

Table 21. Ovierview of tense aspect markers in HAT and SON

TAM meaning	HAT	SON

resultative	*sa*	*da*
prospective fut.	*bwe*	*bwe*
immediate fut.	*rau*	*rau*
perfective	*mour*	*mori*

The first form HAT *sa* SON *da* 'resultative' is the most difficult form to define. It is almost certainly a reflex of Trukic *-ta, which Jackson glosses as 'perspective; change-of-state; hortative' (1983, p. 55). This is not very helpful, because no definition or examples for the interpretation of these labels is given. In other dialects, including WO the meaning of the reflex of *-ta includes a component of 'past-ness' or 'finished-ness'. This does not seem to be the case for HAT *sa* and SON *da*, which can quite easily be used for actions that are happening now or that are going to happen in the future. There is also no indication in the data that HAT *sa* and SON *da* say anything about whether the action or state is finished or about how it relates to the present. Instead, what constraints the use of HAT *sa* SON *da* is whether the phrase in which it is used is closely connected to the sentence that precedes it. This means that sequence (a) is much more likely than the sequence of sentences in (b)

(a) HAT *ye bito wori faruyara, ye sa mir*

ye	bi -to	wo	-ri	faruya -ra	ye	sa	mir		
sbj:3.sg	go hither	on top of		island that		sbj:3.sg	???	stay	
sbjm	V -suff	RelN -suff	N		dem sbjm	TAM	V		

(b) HAT ?*ye sa bito wori faruyara, ye mir*

ye	sa	bi -to	wo	-ri	faruya -ra	ye	mir	
sbj:3.sg	???	go hither	on top of		island that	sbj:3.sg	stay	
sbjm	TAM	V -suff	RelN -suff	N		dem sbjm	V	

The depicted situation of someone arriving on an island and staying there could take place in a story situated in the past, but it could also be a description of a plan for the future, or a narration of something taking place right now. A possible interpretation of this TAM is that it indicated that whatever state, action or process is described by the verb was the logical result of whatever came before it. That would be in accordance with the description given in Capell (1950) and it would explain why phrases in isolation do not allow HAT *sa* SON *da*, while sequences of connected events in stories favor the use os *sa / da* in every sentence.

Sentences which describe things that will happen in the future, especially things that the speaker intends to do, take HAT+SON bwe, the marker of the 'prospective future'. A translation of the sentence HAT *ye bwe mangau* SON *e bwe mangau* could be, depending on the context 'he is going to eat' or 'he will eat', and implies the meaning 'He has decided that he will eat'. For an event that is going to happen in the very near future, the form HAT+SON *rau* is used, which is etymologically related to the verb *raho '*to go'

(probably HAT *rau* 'to go' and SON *raho* 'to go'). For example: HAT *si rau chüh* 'we are going to go', 'we are about to go', or even 'let's go'.

To emphasize the completion of something the perfective form HAT *mour* SON *mori* is used. It's meaning can usually be accurately paraphrased with the English adverb 'already', as in SON *e mori mas* 'he has died' or 'he is (already) dead'.

Negatives

To negate a verb in Hatohobeian or Sonsorolese a negator particle (neg) must be placed in between the subject marker and the verb. Chuukic languages can be very different in how many negator particles they use and what syntactic rules govern their usage. Jackson calls negatives in Ulithian, Pulo Annan and Woleian 'problematic' (1983, p. 233) and gives the following forms, to which have been added forms found in this study's data of SON and HAT:

Table 22. Ovierview of negator particles in HAT and SON compared to ULI, WOL and PUA (Jackson, 1983)

Neg. meaning	SON	HAT	ULI	PUA	WOL
'no longer'	*tai/tei*	*tai/tei*	tay	taaI	taaI
'not yet'	*tösu*	*??*	teed	--	teitI
future 'will not'	*towai*	*towai*	towe	towaI	tewaI
future 'will no longer'	--	--	--	--	tewaaI
future 'will not yet'	--	--	--	--	tewaitI

In Woleaian another form is said to exist on top of the ones listed above, namely the particle 'ta', which appears only in front of certain verbs insead of *tai* (Sohn, 77). Short forms of *tai* have been found in HAT and SON, also. They occur in the following environments: (1) before SON *wogla* 'to exist', (2) before SON *süya* 'to leave' and (3) before HAT+SON *hüra* 'to know'. That no *ta* before HAT *woh* 'to exist' and HAT *chüh* 'to leave' was found is likely only due to a lack of HAT narratives and not a reason to assume that this is impossible in HAT. Interestingly, locals write negated forms of these three verbs as one word (e.g. SON *e tawogla yaglemat* 'there are no people). This is probably because these verbs and their negated forms are very frequent and shortening them is convenient. Syntactically, negator particles cannot be combined with TAM. Instead, the negator HAT+SON *towai* carries the prospective meaning associated with HAT+SON *bwe*, while *tai* is unmarked for aspect or tense. When used in imperative sentence, *tai* may be prohibitive (i.e. HAT+SON *ho towai* ... 'don't …'or 'you should not …').

Two things are still unclear about negation in the Hatohobeian and Sonsorolese verb phrase. Firstly, it is not certain whether Hatohobeian and Sonsorolese know other negator particles that code meanings such as 'not yet' or 'not even'. Capell (1950) states that Sonsorolese and Hatohobeian also use 'teiti' and 'tosu' for 'not yet'. The word 'teiti' did not occur in the data, and 'tosu' (SON *tösu*) was only found in Sonsorolese. This

is unexpected, because *tösu* was not recorded for PUA, which is very closely related to SON.

Secondly, it is uncertain why *tai* and *ta* alternate with the forms *tei* and *te*. One would expect this alternations to be an example of a-raising before /i/ and /ü/ or /a/, but only some of the data clearly confirms this (e.g. SON e *te hüra* 'he doesn't/didn't know'). Capell (1950) also discusses variation in the negator particle dependent on the subject marker *preceding* it. From the Sonsorolese sentences below, he concludes that 'tei' appears after 1sg, 1inclpl, 1 exclpl, 2pl and whenever subject and negative are separated by another particle, giving these examples, following his orthography:

i tei matahü
hagle ho tai matahü
ie e tai matahü
di tei matahü
hai tei matahü
hau tei matahü
igle gle tai matahü
i da tei matahü

This claim has been tested against all the spellings of locals in available transcriptions, which revealed that for some reason most of the written Sonsorolese reflects 'e tei' rather than 'e tai'. Some of the HAT data confirms the observations (a), but counter evidence was also found (b):

	HAT	Source (informant, story, line in Flex)
(a)	*etai mwar* (sic)	(Obita, Mohumoh, 95)
	ye tai mwar	
	sbj:1.sg neg man	
	sbjm neg N	
	it was not a man	
	etai ppou (sic)	(Obita, Mohumoh, 99)
	ye tai ppou	
	sbj:1.sg neg strong	
	sbjm neg Vintr.	
	she was not strong	
	ho tei ffatohini (sic)	(Rosa, Matthew 25, 50)
	ho tei ffatohini	
	sbj:2.sg neg plant	
	sbjm neg V	

you did not plant it

i tei fotohini (sic) (Rosa, Matthew 25, 57)

i	tei	ffatohini
sbj:1.sg	neg	plant
sbjm	neg	V

I did not plant it

(b) *ye teiwei mere* (sic) (Obita, Mohumoh, 112)

ye	tei	wey	mere
sbj:3.sg	neg	like	this
sbjm	neg	Vcop	dem.pron

it was not like this

It is possible that this is a case of a-raising caused by a preceding vowel /i/, with the 1st person singular *i* and the 1st person plural HAT *si* SON *di* triggering *te*i. It is also possible that *tei* is an example of internal vowel harmony or a-raising caused by the /i/ in the diphthong, as tends to happen in the word HAT *faifir* which is often pronounced *feifir*, and that it is therefore a matter of free spelling variation.

Directional affixes

Another category of morphemes that appear in the verb phrase are directionals (dir). These are suffixes that may be attached to verbs that involve movement to indicate the direction of this movement. The directions that have been lexicalized are typical to the island context and include a separate word for 'away from the center of the island, towards the sea' and 'towards the center of the island', as well as more universal directions (Table 23).

Table 23. Ovierview of directional affixes in HAT and SON

Directional meaning	HAT	SON
'away from the speaker'	*-ra*	*-raho*
'towards the speaker'	*-to(h)*	*-to(h)(o)*
'up, to the east'	*-teh*	*-tahe*
'down, to the west'	*-tiw*	*-tiwo*
'into, to the (center of the) island'	*-rong*	*-rango*
'outward, seaward'	*-wow*	*-wowu*
'thither, toward'	*-woü*	*-woü*

It is difficult to decide on a base form for each of these directionals, as two instances of a directional may differ slightly in the degree to which the final vowel influences the first vowel (e.g. HAT *tahe* vs *teh* 'up, to the east'). The appearance of a final vowel and an /h/ in the forms for 'away from the speaker' and 'towards the speaker', especially in SON, points toward the conservative phonology of this dialect, as they reflect a consonant /k/ that used to appear in the proto-language and that has since disappeared in Chuukic languages to the East. On a final note, it may be necessary to either postulate a variant of HAT+SON *-wou* 'thither, toward' or to postulate an extra directional, because several sentences like (a) were found, in which the verb takes a suffix that is almost certainly a directional, but that does not fit with the afore-mentioned directionals formally:

(a) HAT+SON *itewau ma iruhur*

ite	-wau	ma	iruhur
take	out	from	outside
Vstem	dir	prep.	RelN

Directional suffixes combine with object suffixes in the order [V -objm -dir]:

(a) SON *hadiglarango*

hadi	-gla	-rango
take	them	in
V	objm	dir

take them inside

Phonologically, directionals can affect the stem they follow. In this example the /w/ in HAT+SON *-wou* 'thither, toward' has a rounding affect on the preceding /i/:

(a) HAT+SON *bwito*

bwi	-to
move	hither
Vstem	dir

(b) HAT+SON *bwuwou*

bwi	-wou
move	thither
Vstem	dir

Adverbs

At their core, adverbs are a group of words that modify the verb phrase in some way. In 'He ate the apple slowly', 'slowly' says something about how the speed of eating. There are very many words that modify nouns and pronouns as well as whole clauses and sentences that are also grouped with adverbs into a sort of 'dustbin' category. In Hatohobeian and Sonsorolese it is possible to categorize adverbs by where they appear in the sentence. Some occur in sentence-initial position (e.g. HAT+SON *unga*, *I bwe raho* 'yes, I will go') or sentence-final position (e.g. HAT *iiy ye bwe bwito warasur* 'he is coming tomorrow'), but only those that appear inside the verb phrase will be discussed here, and of this type there are two:

Position	HAT	SON
pre-verbal position	*iiy ye bwar bwito*	*iiya e pwara bwito*
	iiy ye bwar bwi -to	iiya e pwara bwi -to
	sbj:3.sg sbj:3.sg again come	sbj:3.sg sbj:3.sg again come
	Pron sbjm Adv V dir	Pron sbjm Adv V dir
	he came again	he came again
post-verbal position	*ha ta hüra fangaih*	*gla ta hüra fangaigla*
	ha ta hüra fanga -ih	gla ta hüra fanga -igla
	sbj:3.pl neg know together them	sbj:3.pl neg know together them
	sbjm neg V Adv objm	sbjm neg V Adv objm
	they didn't know eachother	they didn't know eachother

Pre-verbal adverbs are somewhat difficult to elicit and characterize, and in fact only HAT *bwar* SON *pwara* was found. The post-verbal adverbs are either more numerous or more frequent, and include at least the following. The meanings assigned to them are tentative.

Adverb meaning	HAT	SON
'please'	*-mo*	*-mo*
'just'	*-söhü*	*-söhü*
'together'	*-fangani*	*-fangani*
'back'	*-tafari(ye)*	*-tafari(ye)*
'all'	*-uruta-*	*-uruta-*

As shown in the example of HAT *fangaih* SON *fangaigla* 'together -3.pl' some adverbs can take suffixes marked or number and person.

Conclusion

The classes of morphemes that exist in the Hatohobeian and Sonsorolese verb phrase are verbs, subject markers, object markers, tense aspect markers, directionals and adverbs. This taxonomy of forms, the syntactic and semantic characteristics of the forms, as well as the actual phonological shape reveal Hatohobei and Sonsorol to be quite typical for Chuukic languages, as it is quite easy to map the forms in these language to equivalents in other dialects.

Some of the more surprising findings include the fact that subject markers, which are otherwise very regular, are sometimes dropped in fast speech and that object suffixes begin with glides in the first person in HAT and SON and the third person in SON in some environments despite such glides not appearing in any proto-forms or neighbouring dialects. In the area of tense and aspect, it was found that Hatohobeian and Sonsorolese know only a handful of TAMs, of which one seems to code logical results of a previous state or action, a semantic development which is probably unique to HAT and SON. Somewhat less surprising was the fact that the set of negator particles and their meaning was not entirely conclusive. Particularly uncertain were the status of the short forms of *tai* in both HAT and SON, the supposed existence of more negator particles and an unexplained alternation between *tai* / *ta* and *tei / te*. Directionals were somewhat easier to describe, and their forms pointed to a very clear trend towards conservative phonology in these two dialects. Finally, adverbs were found to appear before the verb and after the verb, with the latter group being able to take suffixes.

Although many questions still exists about all of these categories, it is unlikely that other categories exists besides these. A brief overview of Hatohobeian and Sonsorolese morphemes can thus be given:

6 Orthography

The specific structure of Chuukic languages brings with it specific challenges for the creation of a useful orthography. The number of phonemes exceeds the number of English letters that Hatohobeian and Sonsorolese have adopted, so decisions need to be made about the representation of the additional vowels /ü/ and /ö/ and the consonants that are unknown to English or Palauan.

Once this has been decided, a choice needs to be made for an orthography that either takes as its point of reference the phonemic base forms of words, or their phonetic surface form (Sohn, 1984). For example, the underlying form for name is HAT *ita-* SON *ita-* as can be deducted from the forms HAT+SON *itar* 'his name', but the phonology prefers for words in isolation to be long in both langauges, and to have no final vowel in Hatohobeian, which means the isolated word for 'name' is HAT *iit* SON *iita* 'name'. Speakers must decide to either write 'iit(a)' and teach writers to shorten the first vowel in the form 'itar' 'his name', or to write 'it(a)' and expect writers to know that the word is pronounced with a long vowel in isolation.

Another challenge is the representation of word breaks and morpheme boundaries. The different morphemes of the verb phrases show various degrees of dependency and attachment between one another. For example, the short negator particle *ta* is more closely attached to its frequent verbs SON *wogla* 'to exist', *hüra* 'to know', *süya* 'to leave', than the particle *tai* is to regular verbs. A good way to symbolize this for readers is to write a space after *tai* but not after *ta.* Deciding whether to write spaces for all of the other morphemes in the verb phrases, e.g. TAM markers and verbs, is far from straight-forward.

Dialect-specific recommendations

The most important difference between HAT and SON that influences spelling is that Sonsorolese morphophonology has retained the original final vowels for each morpheme. The suffix *–hamami* and the word *fatare* are thus pronounced with a voiceless final vowel that is almost audible, because the mouth makes the shape for *i* and *e* and the preceding consonant is pronounced exactly the same as before a voiced *i* or *e.* Sonsorolese speakers are in many cases very certain of which vowel the final voiceless vowel is and they prefer to write it out. Although the final vowel affects the preceding vowel (*-hamami* sounds a bit like '-hamemi' and *fatare* sounds a bit like 'fatere') speakers tend not to notice this change and tend not to let it affect their spelling.

This is not true for Hatohobeian. In the speech of many Hatohobeians, words and morphemes have either lost their final vowels entirely, or have not retained enough information about the final vowel for the speaker to know exactly which vowel the word is supposed to end in, and so they are more likely not to spell them. Secondly, the process whereby a final vowel changes the quality of a preceding vowel seems to be more advanced in Hatohobeian. Informants were less certain than their Sonsorolese colleagues of what the second vowel in *-hamam(i)* or *fatar* should be, and are much more likely to spell *-hamem* and *feter*.

It is not unthinkable that language contact with Sonsorolese is the reason why Hatohobeian informants seem to be unsure of the presence of a voiceless final vowel or the quality of preceding vowel.

After all, Capell's description of Hatohobeian seems to indicate wide-spread omission of final vowels. It is possible that the intuitions of speakers about voiceless final vowels may be evolving into a more conservative state as a result of influence of Sonsorolese phonology.

Given the importance of final vowels in Sonosorolese, writers of this dialect who are currently allowed not to write final vowels are recommended to pay very careful attention to the correct spelling of all voiceless final vowels. Information about the sound quality of these vowels can easily be lost if the younger generation is left to its own devices. It could be very helpful to them to be exposed as much as possible to written forms that contain the original final vowel. As for the effects of the final vowel on the preceding vowel, this effect is entirely regular and predictable and therefore does not necessarily need to be reflected in spelling. In fact, doing so may be unhelpful, as it can obscure the relatedness between, for example, words like *raho* 'go' (pronounced 'roh') and the particle *ra* 'future tense'. The spelling of Sonsorolese in this essay and the appendix is an attempt to apply this principle.

In the case of Hatohobeian, instructions to spell out voiceless final vowels will likely be very difficult for speakers to follow consistently. Because speakers in many cases do not have an clear internal representation of the voiceless final vowel, learners in particular may not intuitively know that or understand why *-hamam(i)* ought to be pronounced 'hamem'. A good orthography for Hatohobeian may need to more phonetic ('write it as you say it'). Examples are given below:

	Hat.	Son.
'fear'	matah	matahü
'come inside'	bwirong	bwirango
'he goes'	ye roh	e raho
'look/see'???	hakenne	kakanne
'want'	mweseri	mwasari

The difficulty is that while Hatohobeian allows for CVC syllables in isolated words (that is, morphemes that end in consonants), it still very much avoid consonant clusters at syllable boundaries. That means that when one of the words above is followed by a syllable with a consonant as its onset, the voiceless final vowel will re-appear. So *imw* 'house' becomes *imwakawe* 'the houses' revealing the final vowel *a*. It would seem that the Hatohobeian writer must then choose between:

1) Always writing VFVs: *imwa* *imwakawe*

2) Only writing linking VFVs: *imw* *imwakawe*

In the second case, teaching learners which linking vowel to use may pose a challenge. It is important to know, then, that there is a third option:

3) Never writing VFVs : *imw* *imw kawe*

The reason that this is a viable alternative is that linking vowels are very often reduced to a schwa. Also, vowel harmony rules predict assimilation of the linking vowel to the surrounding vowels to the point where

its quality is quite predictable from the context. In other words, it is possible to pronounce 'imw kawe' correctly without knowing the original final vowel of HAT *imw* 'house'. Furthemore, other languages in the region, including Woleaian, already treat demonstrative morphemes like 'ka' and 'we' as separate words.

7 Discussion

Limitations

For every bit of information that has been provided here stand countless unanswered questions and possibilities for further research. Two methodological caveats must be made to shed light on some of the shortcomings of this work. The first relates to a lack of data, especially for Hatohobeian. Too many of the claims in this article are based on tentative impressions from a limited amount of informants, who showed considerable inter-informant variation, due to the complex sociolinguistic factors that may influence any individual's speech, but especially the speech of an individual in such a fluid, fast-changing linguistic environment. Without the efforts of a linguist with a higher proficiency in the local language or a more extensive network of contacts in the community, it will be not possible to collect the right amount of high-quality, high-relevance data that is necessary to test whether all the claims made in this study hold consistently across the speech of the whole community. Thankfully, an effort is under way to collect a large amount of video and audio data for Hatohobeian, but that does mean that without investment of community members, the development of a database or dictionary of Sonsorolese will fall behind.

A second caveat relates to a lack of linguistic awareness across the board. Informant-researchers conversations were most likely hindered by the fact that the researcher had beginner knowledge of the field of Micronesian linguistics, while the informants almost always seemed to feel insecure about their knowledge of their own language. This is not at all surprising. Linguistic knowledge is inherently subconscious and very difficult to explain to outsiders, unless specific training has taken place. First language acquisition of Hatohobeian and Sonsorolese takes place almost exclusively in informal settings that require no conscious awareness of linguistic features. What is more, due to the erosion of the oral culture and traditional decision-making in the modernized Echang culture, listening to complex stories or speaking for a long time is rarely needed. Formal schooling for the younger generations especially is in Palauan and English, so comprehension of written HAT and SON and technical and creative writing skills are neglected. If the community had had the opportunity to invest in education of Hatohobeian and Sonsorolese, for example by teaching vocabulary and grammar after school, or by developing small books containing spelling rules or well-written stories, community members would perhaps have been able to respond more spontaneously and confidently in conversations about language.

Further research

There are many ways in which Hatohobeian and Sonsorolese phonetics, phonology, morphology, syntax and

pragmatics merit further research, but two especially salient elements will be highlighted. Firstly, both languages showed a very unexpected tendency towards complex noun phrases consisting of a nominal demonstrative and a regular noun phrase that might, as far as the researcher is aware, include attributive *-ri* construction, possessive constructions, compounds and demonstrative affixes. For example, the noun phrase in (a) is taken from a context in which it means 'that worker':

(a) SON *iyewe hei fitehiwe*
iya -we hei fitehi -we
sbj:3.sg that person work that
Pron dem N N dem
'that him that worker'

This type of phrase is not possible in any other Chuukic language, so it begs the question whether this is an ungrammatical construction that appears as noise in the data for an unknown reason, or whether it is a grammatical noun phrase and if it is, how its structure should be analysed.

A second suggestion for further research is the internal structure of the transitive verb stem and how intransitive, transitive and neutral forms of verbs differ in meaning and usage. Some data was collected on this topic and archived with the rest of the material in the Kaipuleohone digital ethnographic archive of the University of Hawai'i[9]. , but time constraints prevented proper study of the collected phrases.

8 Conclusion

The languages of the South-West Islands arose as isolated Chuukic dialects, but now that its speakers have moved to an urbanized, westernised area, they have become the ingredients in an interesting linguistic soup of which the final result is unknown. The Sonsorol dialect is slowly blending with and overtaking the Hatohobeian dialect, while both are rapidly losing the vocabulary associated with a traditional way of life. These developments cause variation in speech between individuals and between generations that make it difficult to determine whether an occurrence of a word or structure represents a feature that was present in the language as it was spoken historically, or an innovation, or even a case of idiosyncratic speech.

To enable a systematic study of these as of yet still distinct dialects, data was collected between August and November 2013 in the village of Echang on Palau, by recording of list of 200 basic vocabulary items, recording all known paradigms of inflectional morphemes and a selection of derivational morphemes, all demonstrative pro-forms and relator nouns, and a small collection of narratives.

In terms of phonology, the most important observation on the difference between Hatohobeian and Sonsorolese was their different treatment of word-final vowels. Memorizing the correct voiceless final

[9] http://scholarspace.manoa.hawaii.edu/handle/10125/4250

vowel is important for pronunciation of Sonsorolese words. Hatohobeian, by contrast, has lost unstressed final vowels in most words. Therefore, Sonsorolese is stricter in allowing only CV-type syllables. Hatohobeian allows syllables which end in consonants, although final vowels re-appear when the word is pronounced in running speech before another word or before a suffix. It was found that Sonsorolese and Hatohobeian share the same vowels, among which the somewhat questionable phoneme /ö/ which probably only appears before a final vowel 'ü' or 'u' in either the surface form or an underlying form, e.g. HAT *hatösü* / SON *hatödü* 'truly, true', HAT *söruw* / SON *doruuw* 'three', and HAT *söhu* / SON *döglu* 'to say'. The vowel /a/ in Hatohobeian and Sonsorolese is a complex case and can appear as [ɐ], [æ] or [a], depending on factors that could not be teased out. The two dialects are much less similar when it comes to consonants. Several phonological changes have taken place between the two dialects, and Sonsorolese has a larger number of different consonants, particularly geminates.

In terms of morphology, Hatohobeian and Sonsorolese differentiate between a number of different word classes that appear in the noun phrases, a number of verb phrase-related word groups, a number of affixes, and an under-analysed group of adverbs. Within the noun phrase, the relevant categories are nouns, numeral stems and numeral classifiers, relator nouns, emphatic personal pronouns, possessive classifiers and demonstrative pronouns. Affixes include attributive suffix *-ri,* possessive suffixes and demonstrative suffixes. Most of the constructions that can be made with these morphemes are phenomena known from other Chuukic languages, with the exception of the mysterious complex demonstrative construction in phrases such as SON *iyewe hei fitehiwe* 'that him that worker'.

Hatohobeian and Sonsorolese predicative sentences require only a verb and a subject marker indicating the grammatical subject. Hatohobeian and Sonsorolese transitive verbs are also followed by an object suffix. Tense and aspect distinctions are made by a limited number of tense/aspect markers that follow the subject markers. Negation in Hatohobeian or Sonsorolese requires a negator particle that takes the place of a tense aspect marker. On the other end of the verb, directionals may occur. These are suffixes that indicate the direction of movement. The final category of forms that appear in the Verb phrase is that of pre-verbal and post-verbal adverbs, of which the latter may take personal agreement suffixes.

The morphophonological system described here comes with specific orthographic challenges. Decisions need to be made about the representation of the vowels and consonants that do not exist in English or Palauan. Morphophonological processes also create a gap between the underlying base forms of words and their surface representation, and writers need to decide where in the spectrum of phonemic and phonetic writing they prefer to be. A final challenge is the placing of spaces or hyphens to symbolize word and morpheme boundaries. The subject marker is a clitic that interacts in a complicated way with the negator particle and the TAMs, which in turn interact with pre-verbal adverbs. Recommendations are given only in that area in which confident suggestions can be given: that of the final vowel problem in Hatohobeian and to a lesser extent Sonsorolese.

This study is but a brief sketch which gives an overview of the phoneme inventory, of the most important word categories and within those categories of the function words and morphemes that are most

frequent in the noun phrase and verb phrase. Although limitations on time and expertise limited the degree to which this essay was able to make cross-linguistic comparisons, it is certain that in their isolation Hatohobeian and Sonsorolese have developed different reflections of proto-forms and proto-structures. Having information on how Hatohobeian and Sonsorolese developed enriches our understanding of other Chuukic languages. This sketch can hopefully form the basis for a more precise and detailed account, and it can serve as a point of reference for the development of written works and educational tools, should the community want to halt or reverse the process of linguistic erosion that is driving their languages towards extinction.

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Appendix A: Word lists in comparison to Quackenbush

Cogn N.	Eng	HAT IPA	HAT Orth.	Quackenbush (1968)	SON IPA	HAT Orth.	Quackenbush (1968)
1	hand	xumᵛot͡ʃ	*humwots-ür*	gumwéc, yr	xumᵛusᵾ	*humwusu*	gumwusU -uri
2	left	xoɾoʊt͡ʃɛxiɾ	*horoutsehir*	goroceegir	xuɾusɛxiɾ̩	*hurusehiri*	guruseegirI
3	right	xoɾoʊmɐxɐ	*horoumaha*	goromaaga	xuɾumagˡa	*hurumala*	gurumaala
4	leg / foot	xuːbᵛ	*huubw -ar*	guubw –er	xuːbᵛɕ	*huubwe*	guubwA –eri
5	to walk	fætæɾ	*feter*	fatar	fɐtɐɾɕ	*fatare*	fatarE
6	road/path	jaːɾɛ / jɛɾ	*yaare*	jaarE	jaːɾᵩ	*yaara*	jaarA
7	to come	bᵛito	*bwito*	bwii-tog	bᵛitox	*bwitoh*	bwii-tog
8	to turn (=veer to the side, as in turning left or right on a path)	wɛxitːɛx	*wehiteh*	sygyn / wégiteg	wɛxitɛxᵾ	*wehitehi*	wegiti / wegitegI
9	to swim	tətə	*tütü*	jaf	tətə(ɾɛtɛt) / yaːfᵩ	*tütü / yaafa*	jafA
10	dirty	bᵛəɾ	*bör*	ppwérY	pᵛərᵩ	*pwörü*	ppwérY
11	dust	yaɾiyɛɾ̩	*yariyeri*	ppwérY	xosixosi / yaɾiyɛɾ̩	*hosihosi / yariyeri*	galaarY
12	skin (bark)	xiːn xinᵾ(ɾəxəɾ)	*hiin*	giin gin		*hiiri / hinirühür*	giirI gin
12b				ryyg -yr	xiːniɾəxəɾ	*hinirühür*	
13	back (body part)	taxəx	*tahüh -ür*	tagygY -yr	tagˡəxᵩ	*taglühü*	talygY –yri
14	belly	uːbᵛ / siiy	*uub / siiy -er*	siij -er	uːbᵛᵩ / ðijᵩ	*uubwa / diiya*	wuubwA -eri
15	bone	t͡ʃi	*tsi tsir*	cii -ri	ssiː	*ssi*	sii -ri
16	intestines (viscera)	taːɾ	*taar*	taar taan	teiː	*teey*	teej teejiri
17	liver	jeːs, jɛsɛɾ	*yees, yeser*	jees -er	jaːðɛ	*yaade*	jaathE -eri

18 breast (chest)	mɐtaɾɪŋəɾɪŋəːn	*mätaringörin gör -an*	wuubwA -er	mɐtaɾɪŋəɾɪŋən	*mätaringa-rüngar*	mataringéryngérY mataringéryngéni
18b breast (female)			tyyt tyytyr	tɵːtɐ̯	*tüütü*	tyytY tyytyri
19 shoulder	jæfɐxɐ̯	*yäfah -ar*	jafag -ar	jɐfɐgˡɐ̯	*yafagla*	jafalA –ari
20 to know (things), be knowledgeable	xɵɾa	*hüra*	gyra	xɵɾa	*hüra*	gyra
21 to think	mɛŋimɛŋi̯	*mengimeng*	mengimeng	mɐŋimɛŋi̯	*mängimengi*	mangimeng
22 to fear	mɐtɐx	*matah*	matag -yr	matɐxɐ̯	*matahu*	matagY -yri
23 blood	t͡ʃːa	*ttsa ttsaar*	cca caar	sːa	*ssa*	ssa saari
24 head	t͡ʃiːm	*tsiim tsimwar*	ciimw -er	fɐðɵxɐ̯	*fädühü*	fathygY –yri
25 neck	ɵːɣɐr	*üüh üühar*	wyyr -er	ɵːj ɵjɐɾ	*üüy üüyar*	wyyjA -eri
26 hair (of the head)	riɛnt͡ʃɪm	*riyentsim*	jancimw -er	siːmʸ	*siimw*	siimwA -eri
27 nose	bɐɵtɐ̯	*bautü*	bwawutU -uri	bʸɐːɵtɐ̯ bʸɐːɵtɵɾ	*bwaautü*	bwawytY -yri
28 to breathe	ŋɐs	*ngas*	ngas	ŋːɐðą̊	*nngada*	ngathA
29 to sniff, smell (it)	təŋɵ, təŋɵtəŋɐ̯	*töngü, töngütöngö*	tééngy	təːŋɐ̯ təːŋətəŋ	*tööngü, tööngütöng*	tééngy
30 mouth	yaːw	*yaaw*	jaaw -ar	jaːwɐ̯	*yaaw*	jaawA -ari
31 tooth	ŋiː	*ngii*	ngii -ri	ŋiː	*ngii*	ngii -ri
32 tongue	nɵnɵsirxɐn	*nünüsirhan*	reew -er	jɐɾɐɾixɐɾą̊	*yararihara*	jararigarA jararigeni / reewE -eri
33 to laugh	mæmæri̯	*mmeri*	mámári	mmɛɾi̯	*mmari*	mmari
34 to cry	tæːtæŋi̯	*teengi tetengi*	táátáng -ir	taːŋi̯	*taangi*	taangI -iri
35 to vomit	mːʸɵt	*mmwüt*	mmwut	Mmʸutą̊	*Mmwuta / mwut*	mmwutA
36 to spit	xɵtɵf	*hütüf*	gutuf	(sɛni̯)gutufą̊	*(säni)hutufa*	gutufA
37 to eat	mʸɐŋɐɵ	*mwangaü*	mangaw	mɐŋɐʏ	*mwangaü*	mangawY

38	to chew (a. general term; if no general term then b. chew betel)	ŋəːŋ / ŋətə	*ngüüng*		ŋəːŋ̩	*ngüüngü*	
39	to cook (a. general term; if no general term then b. boil food)		*buh buha*	gaaw / gaméét			kuukU / gaméétA
39b	to cook b. boil food)	xɐːbʸɛʧ̑ i̯	*haabetsi*	gawbwec	xapʸɛsi̯	*hapwesi*	gawalE
40	to drink	ɾəːɾ	*rüür*	ryyr	əːɾŋ̩	*uurŋ̩*	wyyrY
41	to bite	kək	*kük*		kəkŋ̩	*kükü*	
41b	to bite it		*hüsü*	gysy	xəðŋ̩	*hüdü*	gythy
42	to suck	xaːmit	*haamit*	gaamit	ðoðogˡŋ̩	*dodoglo*	thotholO
43	ear	tɐriŋ	*taring*	taring -er	tɐɾiŋɐ̯	*taringa*	taringA -eri
44	to hear	xoŋoxoŋŋ̩	*hongohongo*	gongO	gˡoŋogˡoŋ̩ŋ̩	*glongoglongo*	longO
44b	to hear	xɐsətɐriŋ	*hasütaring*				
45	eye	maːt	*maat*	maat matar	maːt̪ɐ̯	*maata*	maatA matari
46	to look	mɛiɛmɛi / mɛiɛxi	*(meye)meye / meyehi*	mwej			gapajyygY
46b	to see	xakænɛ	*hakene*	gakáne	kækanne	*kakanne*	kakanne
47	to yawn	moɾ	*mor*		mmaʊɐ̯	*maua*	
48	to sleep	mɐsəx	*masüh*	masyg	maðəgˡŋ̩	*madüglü*	mathylY
49	to lie down (to sleep)	woɾotəx	*worotüh*	woro (-tug)	woɾotiwŋ̩	*worotiwo*	woro (-tiw)
50	to dream	tːɐɾ	*ttar*	ttar	tːɐɾɐ̯	*ttara*	ttarA
51	to sit	moːt	*moot*	maat	maːtŋ̩	*maato*	maatO
52	to stand	səːtɐ	*süüta*	syy	θʏː	*dü*	thyy

53	person/human being	jɐxæmɐt	*yahamat*	jagamat	jagˡɛmɐt̪	*yaglemat*	jalematA
54	man/male	mᵛɐɾ	*mwar*	mwaar mwanni	mᵛɐ:ɾɻ	*mwaare*	mwaarE mwaani
55	woman/female	fɐɪfir	*faifir*	fájifir	fɐɪfiɾɻ	*faifire*	fajifirE
56	child	xaɾiweit͡ʃ	*hariweits*	gariwejic	ɾiweisʲ	*riweisi*	riwejisI
57	husband	xi:	*hii*	giigi giir	gˡɛgˡigˡi	*glegligli*	liili liiri
58	wife	xi:	*hii*	giigi giir			liili liiri
59	mother	sɪɾɛsɪɾ	*siresir*	siir	ðiɾɛðiɾɻ	*diredire*	thiirE
60	father	tɐmɐtɐm	*tamatam*	taamA -ar	tɐmɐtɐmᵑ	*tamatama*	tamatamA tamari
61	house	i:mᵛ	*iimw*	jiimw -er	i:mᵛᵑ	*iimw*	jiimwA -eri
62	thatch/roof	ja:s	*yaas*	jaasO -or	ja:ðᵑ	*yaado*	jaathO -ori
63	name	i:t	*iit*	jiit	i:tᵑ	*iita*	jiitA
64	to say	tapa	*tapa*	tapa	ðəgˡɵ	*tapa*	théélY
65	rope	ta:ɾ	*taar*	taar tánwa	ta:ɾʲ	*taari*	taarI taniwa
66	to tie up, fasten	xəxəx	*höhöh*	géégé / tygytygyg	xəxə-	*höhö-*	gamwasy / tygytygyyjE
67	to sew (clothing)	tei(si)	*tei(si)*	tejiteji teejis	tei(ði)	*tei(di)*	tejiteji teejithi
68	needle	ni:ɣə	*niihö*		niːgˡᵑ	*niiglö*	
69	to hunt (for game)	n.a catch	*hametsi*		n.a catch: ðubᵛugˡʲ	*catch: dubwugli*	
70	to shoot (an arrow)	bᵛɛsi	*bwesi*	pwesi	throw: xa:ɾubᵛ	*haarubw*	pweethI
	spear	xasix-	*hasih-*		q	*hadihi*	
71	to stab, pierce, poke, point	toux	*touh*	towutow	tou-	*tou-*	
71b		(toungeri)			to spear: xaðixi:j		

71b to stab, pierce				faatɐ̟	*faata*	faatA
71c stab it/him	fatari	*fatari*		fatari		
72 to hit (with stick, club)	wautu	*wautu*	wówutu	wautu	*wautu*	wawutuw
73 to steal	piːxɐ/piːxɐf	*piiha / pihaf*	pigaf	pigˡɐf	*piglaf*	pilafA
74 to kill	riij	*riiy*	fajini / riij	riː-	*rii-*	fajini / riij
75 to die, be dead	mɛs	*mes*	mes	maːðɐ̟	*maade*	mathE
76 to live, be alive	fɐs	*fas*	fas	faːðɐ̟	*faada*	fathA
76b to live (reside)			mirE			mirE
77 to scratch (an itch)	xeixɛx	*heiheh*	gejigeg	xɛgˡixɛgˡi	*heglihegli*	geligeli
78 to cut, hack (wood)	sɐpisɐp	*sepisep*	sepisop	Taapɐ̟ / tapahi	*taapa*	taapA
78b	bᵛuɾoxox	*burohoh*				
79 stick (wood)	tɐbᵛəriːxɐ	*teberiha*	tebweriga	iːgˡæɛ	*iiglae*	jilajE
80 to split (tr.)	tiɾɛŋi / tiɾɛttiɾ	*tirengi / tirettir*	tiretir	tit:irɐ̟	*tittire*	tapagi
81 sharp	kɛŋ	*keng*		kɐːŋ̟	*kangi*	
82 dull, blunt	xu	*hu*		xuː	*huu*	
83 to work (in garden, field)	fitɛxi̟	*fitehi*	fiteg (general)	fitexi̟	*fitehi*	fitegI (general)
84 to plant	fɐto	*fato-hi*	fatogi	fːaːtːo̟	*faato*	fatogi
85 to choose	tiwɛɾ	*tiwer tiwereya*	tiwer	tiwɛrɐ̟	*tiwere*	tiwerE
86 to grow (intr.)	xasəːŋ	*hasüüng*		faxoɾɐ̟	*fahora*	
87 to swell (as an abscess)	bᵛobᵛo	*(bo)bo*	bwo	xɐŋətəːjɐ̟	*hangütüüya*	gangytyyj
88 to squeeze (as juice from a fruit)	wongüwong	*wongüwong*	figengi	woŋʊwoŋ̟ɐ̟	*wongüwongü*	fijifijA

89	to hold (in the fist)	kɐmʷɐc (coarticulation)	*hamwatsi*	gamwacy	xamʷa:sɒ̟	*hamwaasu*	gamwasy
90	to dig	kːʲɛɾ	*kker*	kker	kkɛɾi	*kkeri*	kkerI
91	to buy	pɐɾəxɛɾ	*parüher*	paryger	paɾʏjɛɾi	*paruyeri*	paryjerI
92	to open, uncover	su:hi	*suuhi*	suugy	ðu:ɣi	*duuhi*	thuugi
	(uncover)				tagˡæxi	*taglähi*	
93	to pound, beat (as rice or prepared food)	sə:s	*süüs*	syys	ppao	*ppao*	thyythY
93b	pound (anything)		*sepisep*		ðəxə	*dühü*	
94	to throw (as a stone)	xaɾo:bʸ	*harob*		xatiŋ̟	*hatingi*	
95	to fall (as a fruit)	poŋotu	*pongotu*		pəŋətiwɒ̟	*püngütiwo*	
96	dog	piɾisʲ	*piris*	piris	pirisʲ̟	*pirisi*	pirisI
97	bird	maɾʏjɛjɛɾʲ̟	*marüyeyeri*	maryjejer	ma:ɾə / maɾəjɛjɛɾʲ̟	*marüyeyeri*	animal'
98	egg	t͡ʃaxai	*tsahai*	cagaj	saxai	*sahai*	sagaj
99	feather	əəɾ	*üür*	wyyr	ə:xɣ̟	*üühü*	wyygY // wyyrA
100	wing	paʊɾujɛɾ	*pauruyer*		paəɾijɛɾʲ̟	*paüriyeri*	
101	to fly	yɛyɛɾ	*yari yeyer*	jar	ja:ɾʲ̟	*yaari*	jarI
102	rat	xɛ:t͡ʃ	*heets / hatsetsih*	gecc	xɛ:sʲ̟	*heesi*	geesI
103	meat/flesh	fitigɒ̟	*fitiho*	fitigU	fitixɒ̟	*fitiho*	fitigO
104	fat/grease	ʊwij / kɾi:s	*wiiy / kriis*	kriis	ʊwijᵝ̟	*wiya*	giriis
105	tail	pa:t͡ʃ	*paats*	paac	pa:sᵝ̟	*paasa*	paasA
106	snake	ɾabʷut	*rabut*		ɾabʷutɒ̟	*rabwuto*	
107	worm (earthworm)	mʷɐtɐŋ	*matang*		bʷaŋatɒ̟	*bwwangatü*	

108	louse (a. general term, or b. head louse)	xɵ:s	*hüüs*	gyys	xʏ:ðˌ	*hüüdü*	gyythY
109	mosquito	ɾa:mʸ	*raamw*	raamw	ɾa:mʸu̯	*raamwu*	raamwU
110	spider	ɾit:obʸuɣaɣa	*rittobwuhaha*	ritobwugaaga	ɾixətabʸogˡaˌgˡa	*rihätabwoglagla*	rigatabwolaala
111	fish	i:ɣ	*iih*	jiig -er	ji:gˌ	*yiiga*	jiigA -eri
112	rotten (of food, corpse)	bʸɐ	*ba*	bwa	bʸa	*bwa*	bwa
113	branch (the branch itself, not the fork of the branch)	xa	*ha*	ra,raari ciriget	gˡa	*gla*	la,laari sirigetI
114	leaf	ɵ:n	*üün*	wyyn wynni	saaˌ	*saaü*	saawY -yri
115	root	wɐxɐx	*wahah*	wagag -ar	wagˡaxˌ	*waglaha*	walagA -ari
116	flower	bʸu:ŋ	*buung*	bwyyng -yr	βu:ŋˌ	*bwuungü*	bwyyngY -yri
117	fruit	w:at͡ʃiɾigɛtiˌ	*watsirigeti*	wuwa	waɾisiɾixɛti	*warisiriheti*	wuwa
118	grass	fɐtiɾiˌ	*fatiri*	fatir	fɐtiri	*fatiri*	fatirI
119	earth/soil	bʸo:ɾ	*böör*	bwéér	masagˡˌ	*masaglo*	bwéérY
			mötsoh	mecóg			
120	stone	fa:s	*faas*	faas fasyri	fa:ðˌ	*faathü*	faathY fathyri
121	sand	pi:j	*piij*	piij pijer	pi:jˌ	*piiya pijeri*	piijA pijeri
122	water (fresh water)	t͡ʃa:ɾ	*tsaar*	caar	sa:ɾˌ/ʏ	*saarü*	saarY
123	to flow	xaxiis	*hahiis*	sag	xigˡiθiˌ	*higlidi*	thelE
		maɾɵɾox(oɾ)	*marüroh(or)*	sag			
124	sea	ta:tiˌ	*taati*	taat tattir	ta:tiˌ	*taati*	taatI -iri
124c	ocean		*mataw*	mataw		*matawa*	matawA

125	salt	so:ɾ	*soor*	soor			soolO
126	lake	ta:tˌ	*taati*		saniniworǫ̨	*saniniworü*	
127	woods/forest	fafijə / waɾəworǫ̨	*fafije / warüworü*		niworǫ̨ / waruworǫ̨	*niworü / waruworü*	
128	sky	ra:ŋˌ	*raangi*	jewygaar	ra:ŋˌ	*raangi*	raangI
129	moon	mɐxɐm	*maham*	magam	mɐgˡɐm	*maglam*	malamA
130	star	fis:	*fis*	fiis	fi:θˌ	*fiidi*	fiithI
131	cloud (= white cloud; not a raincloud)	xot͡ʃoʊ	*hotsou*	gocow	xosoʊ	*hosou*	gosowU
132	fog		*hahati*		n.a.		
			worohau			*woroglaü*	
133	rain	ɵ:t	*üüt*	wyytA	ɵ:t	*üüt*	wyytA
134	thunder	pa:xǫ̨	*paahü*	paag	pa:gˡ	*paagl*	paalA
135	lightning	fisijɛɾˌ	*fisiyeri*	fisijer	fiðimaɾup	*fidimarup*	marupE
136	wind	ja:ŋˌ	*yaangi*	jaangI	ja:ŋˌ	*yaangi*	jaangI
137	to blow a. of the wind	fiɾɛɾijɛŋˌ	*fire-ri yengi*	pagas	firɛti	*fire-ri yaangi*	firE
137 b	blow b. with the mouth	u:xu	*uuhu*	wuugu	u:xu	*uuhu*	wuugu
138	warm (of weather)	ɾimɐbᵛɛt͡ʃ	*rimebets*	bwec	bᵛɛsˌ	*bwesi*	bwesI / bwesikkal
139	cold (of weather)	xaxifɵ:w	*hahifüw*	fééw	xagˡifəǫ̨	*hagliföü*	fééw
140	dry (a. general term, b. to dry up)	p:ɛɾɛ̨	*ppere*	ppár	ppɐɾ	*ppäre*	pparE
140 b	b. to dry	xap:ɛɾɛ̨ / bᵛɐtɐbᵛɐt	*hapere / batabat*		xap:ɛɾɛ̨	*happäre*	
141	wet	n:ɵ:w	*nnöw*	nnéw	mʏgˡʏtɛxˌ	*müglütehi*	wubwobwU / mylytegI

142	heavy	t͡ʃɐʊ	*tsau*	caw	sːɐʊ	*ssau*	ssaw
143	fire	jaːf	*jaaf*	jaafI	jaafi	*yaafi*	jaafI
144	to burn (tr.)	xaxɵːx	*hahüüh*	gyy	xaxɵːiᵑ̊	*hahüya*	jimagaawa ()
145	smoke (of a fire)	bʷuːxox	*buhoh*	bwugog	bʷugˡoxo̥	*bwugloho*	bwulogO
146	ash	fɐrɐŋ	*farang*	farang	fɐrɐŋᵑ̊	*faranga*	mwaritho
	charcoal					*mwarido*	
147	black	xot͡ʃoxot͡ʃ / xot͡ʃopɵːs	*hotsohots*	gocogoc	gˡosogˡosо̥	*glosogloso*	losolosO
148	white	bʷɛt͡ʃəbʷɛt͡ʃ	*betsebets*	bwecebwec	bʷɛsəbʷɛsᵋ̊	*bwwesebwwese*	bwesebwesE
149	red	xɐŋɐxɐŋ	*hangahang*	gangagang	gˡosaːsa	*glosaasa*	losaasa
150	yellow	t͡ʃɐnjoŋot͡ʃix	*tsanjongotsih*	cánjóngocig	tagˡotoʊwᵑ̊	*taglotouwa*	talotoowa
151	green	xawɐɣɐw	*hawahaw*	gawagaw	xagˡawagˡawᵑ̊	*haglawaglawa*	galawalawA
152	small	paːt͡ʃix	*paatsih*	paacig	xɐpːɐr	*happara*	gapparA
152 b		jɐɣapəɾ	*jahapar*				
153	big	rap	*rap*	rap	taɾɐpːɐr	*tarappara*	taraparA / gogotI
154	short (a. in height, b. in length)	mʷot͡ʃ	*mwots*	mwoc	igˡamʷos / mʷosо̥	*iglamwos / mwosо̥*	mwosO
155	long (of objects)	kamʷɛt͡ʃ	*kamwets*	jaraj	kaːmɪsᵋ̊	*kaamese*	kaamesE / jaraj
156	thin (of objects)	Of rope: jɐʊt͡ʃix of flat objects: mɛ/ɐɾifᵻ̥	*marifi*	marifirif	maɾifiɾifᵻ̥	*marifirifi*	marifI
157	thick (of objects)		*masöösör*	maséésér	maðəɾᵩ̊	*madörü*	mathérY
158	narrow	jɐʊt͡ʃix	*yautsih*	cawycig	sɐɵsixᵻ̥	*saüsihi*	sawysigI
159	wide	t͡ʃɐʊɾap	*tsaurap*	cawyrap	sɐʊrɐpᵑ̊	*saürapa*	sawyrapA

160	painful, sick	xamətəx	*hamätäh*	matág	xa'mɐtæxˌ	*hamätähi*	matagI
	painful					*bwaüsüsü*	
161	shy, ashamed	ma	*ma*		m:a	*mma*	
162	old (of people)	tuxɐfɵ:i	*tuhafai*	pwes (general)	tarɐp:ɐrjagˡɛ mɐt	*tarapparyaglemat*	pwethE (general)
	old man/woman		*Ireh / reheri mwar / reheri faifir*			*mwarenapa / üröürap*	
163	new	taifəɵ	*taiföü*	tajiféwy	taifəɵ	*taiföü*	tajiféwy
164	good	mox	*moh*	mmóg	mmaχ̬o̬	*mmaho*	mmagO
165	bad, evil	teimox / (yarɵsɵ)ta mᵛɐʊ	*teimoh / tamwau*	tamwaawy	tamᵛa:ɵ	*tamwaaü*	tamwaawy
166	correct, true	xatə:s	*hatüüs*		xatə:ðe̬	*hatöödü*	weli/bwyngY
	correct	wɵxi	*wehi*		weigˡii	*wegli*	
	true		*büng*	bwyng			
167	night	(ni)bᵛoŋ	*nibong*	bwoong -ir	bᵛo:ŋˌ	*bwoongi, nibwongi*	bwoongI -iri
168	day	(ni)xa:ɾˌ	*nihaari*	gaarI garir	gˡaɾi	*glari*	laarI lariri
169	year	masirɐp	*masirap*	masirap (year) jaarO (age)	maðirɐpe̬	*madirapa*	mathirapA
			yefeng			*glaahi*	
170	when (question)	iŋɛ:t	*ingeet*	jingáát	wɐŋaɛt / iŋaɛt	*wangaet / ingaet*	wangaajetA
171	to hide (intr.)	xamoro	*hamoro*		xamᵛɐro	*hamwaro*	
172	to climb (a. ladder, b. mountain)	xaxɛtɛx	*haheteh*		tɐɵtæxɛ̬	*taütähe*	
173	at			jiryg-			jijolo-
	next to	isəxɛ	*isehe*			*iranga*	
	next to					*iyoglora*	

174	in, inside	ɪɾɐːn	*iran*	ran (in it)	ɪɾan	*iraan*	jiran (in it)
175	above	ɪwoɾ	*iwor*	wó-	ʊwoworɐ̯	*uwawora*	wuwawo
176	below	Ifarɨ̯ / meifarɨ̯	*ifari*		ifarɐ̯	*ifaara*	
177	this	mɛɾɛ	*mere*		mɛɾɛ	*mere*	
178	that	mɛnaɛ	*menae*		mɛnaɾ	*menar*	
179	near	jaxaxɛp	*yahahep*	gagep	xagˡɛp / iðɛgˡɐjɛ̯	*haglep / ideglaye*	jithelajE
179 b	beside	isəxɛ	*isehe*				
180	far	taːwɐ̯	*taawa*	taawA	taːwɐ̯	*taawa*	taawA
181	where (question)	mɛːa (meija) / iːa	*iya*	jija	iːa	*iya*	jija
182	i	ŋaːŋ	*ngaang*	ngaang	ŋaːŋɐ̯	*ngaangü*	ngaang
183	thou	xɛːɾ	*heer*	geer	xɛɾɐ̯	*hera*	geer
184	he/she	iːj	*iiy*	jiij	iːjə	*iya*	jiij
185	we (incl.) (excl.)	xiːt͡ʃ	*hiits*	giic	xiːs	*hiisa*	giis
185 b		ŋaːmɛm	*ngaamem*	ngaamem	xaːmɛmɨ̯	*haamämi*	gaamemI
186	you	ŋaːmi	*ngaami*	ngaami	xaːmi	*haami*	gaami
187	they	iːx	*iih*	jiig	iːgˡ	*iigla*	jiil
188	what (question)	mɛta	*meta*	meta	mɛta	*meta*	metea
189	who (question)	itɵw	*itöü*	jitéw	itɵw	*itöü*	jitéj
190	other	(maka)pɐɣɵːɣ should be pɐɣɵːr	*pahüür*		pɐgˡəːgˡ	*paglügl*	
191	all	uɾuto -or	*uruto(r)*	wuruto	uɾutɐ -ɾ	*uruta-*	wuruta
192	and	ma	*ma*	mé / ngé	ma / ŋa (/bʸa)	*ma / nga*	mé / ngé

193	if	ifiriˌ	*ifiri*	wuun	ɛweːj / ŋasɐxᵩ	*ewei / ngasahu / ifir*	jifiri
194	how (question)	e feita	*e feita*		feita	*feita*	
	how many	fitoʊ	*fitou*		fitoʊwąˌ	*fitouwa*	
195	no, not	nawɛɾ / tɛi/taɛ	*taiye / nawer*	nawer	nawɛɾiˌ / tɛi / tɐwei	*naweri / tei / tawei*	naweI
195 b	not correct		*tewehi*				
196	to count	xaxoioxoi	*hahoyohoy*	wetegi	xaxoiaxoiᵩˌ	*hahoyahoya*	gagojagoja
197	one	sɛːw	*seew*	seew	ðɛːwᵩˌ	*deewa*	theew
198	two	xʊow	*huwow*	guwow	gˡʊwoːwᵩˌ	*gluwouwa*	luwow
199	three	sɘɾuw	*söruw*	séruw	ðoɾuːwᵩˌ	*doruuwa*	théruw
200	four	faːw	*fauw*	faaw	faʊwᵩˌ	*fauwa*	faaw
201	five	ɾimow	*rimow*	rimow	ɾimoːwᵩˌ	*rimouwa*	rimow
202	six	woɾow	*worow*	worow	woɾoːwᵩˌ	*worouwa*	worow
203	seven	fisuw	*fisuw*	fisuw	fɵðuwᵩˌ	*fiduuwa*	fythyw
204	eight	waɾuw	*waruw*	waruw	waɾuwᵩˌ	*waruw*	waruw
205	nine	tiwow	*tiwow*	tiwow	tiwoːwᵩˌ	*tiwouwa*	tiwow
206	ten	sɛix	*seih*	thejig	ðeixɛtiwᵩ	*deihetiwo*	sejig!
207	twenty	xuxɛix	*huheih*	gygejic	gˡijɛixᵩˌ	*gliyeiha*	lijejig
208	fifty	ɾimɛix	*rimeih*	rimejig	ɾimɛixᵩˌ	*rimeiha*	rimejig
209	one hundred	(sə)bᵛuxux	*(se)buhuh*	bwuguj	ðobᵛuxyjᵩˌ	*dobwuhüya*	bwuguj
210	one thousand	ssɐxɐŋɛs	*(se)hangas*	n.a.	ðɐŋɐgˡætiˌ	*dangaglädi*	n.a.